Much Room for Growth in Latin America’s Food Expenditures and Consumption

Althougeh not the poorest in the world, Latin American diets fall behind those in the United States and Canada. But, income growth in Latin America would likely increase demand for food and lead to improved diets. Because of its relative size and expected rapid population growth, the Latin American market may offer more fertile ground for growth in food demand than can be found in the United States and Canada, where most consumers already enjoy abundant and varied diets.

A comparison between Latin American diets and food budgets with those in the United States and Canada provides a glimpse of the path that lower-income Western Hemisphere countries may take as their per capita incomes grow. Understanding how food demand may expand in the future is useful in determining food needs and evaluating market size and trade prospects.

While consumers in the United States and Canada devoted 13 and 11 percent of their income on food, their counterparts in Latin America spent an average of 33 percent. This suggests that Latin Americans would likely spend a significant share of any increased income on food.
Food Consumption Throughout the Western Hemisphere

To compare Western Hemisphere food consumption patterns, four factors are examined: the share of income spent on food, the percentage of per capita calorie requirements available in the food supply, the amount of protein available, and the share of calories that come from carbohydrate sources.

Data on the food budget share are from the World Bank’s World Development Report, 1992. The amount of calories and protein available in the food supply, as well as the calorie share from food grains and tubers, are calculated based on 1986-90 averages from United Nations Food and Agriculture Organization (FAO) food balance sheets. These levels are then compared to intake recommendations specific to each country published in the 1977 FAO Fourth World Food Survey.

Latin American Countries Spend a High Proportion of Income on Food

As an essential for life, food gets priority in household budgets. In some poorer countries, consumers spend more than half their income on food.

Rising incomes in poorer countries quickly push up household food budgets as consumers are able to purchase more food and items not previously affordable. As food needs are met, more of the additional income is then allocated to other items, such as shelter, health care, household goods, and entertainment, so that the food budget eventually makes up a smaller and smaller share of total income. (Income growth in high-income countries can rapidly increase demand for certain food items, however, such as convenience foods.)

Examining the share of national income spent on food helps researchers understand whether most households in a particular country are struggling to meet their basic food requirements.

The share of consumers’ budget allocated to food differs widely throughout the Western Hemisphere (fig. 1). While the United States and Canada devoted 13 and 11 percent, respectively, of all private spending to food, Latin America spent an average of 33 percent.

These differences are to be expected, given the wide gaps in per capita incomes. According to the World Bank, U.S. and Canadian incomes were above $20,000 (U.S. dollars) per person in 1990, while average Latin American income was US$2,180—about one-tenth that of the United States, and below the world average of US$4,200.

The high percentage of income spent on food in Central and South America and the Caribbean suggests that Latin Americans would likely spend a significant share of any increased income on more food. However, this income growth would have to occur among the poorer Latin American households to result in national increases in food demand, since income growth concentrated on the already well-off households would likely result in growing expenditures on nonfood consumer goods.

Two Indicators of Diet Quality: Availability of Calories and Protein

Adequate caloric intake is an important measure of dietary quality. Studies have shown that when an individual’s energy needs are met, there is a high probability that other important nutrients—such as protein and certain vitamins—also will be obtained in sufficient quantities.
Establishing a recommendation for caloric intake is a complex procedure, since energy needs vary with age, sex, average body size, climate, and physical activity level (both at work and at leisure). The 1977 FAO requirements attempt to take these factors into account, and are based on the age and sex distribution of each nation’s population, the people’s average body size, and the country’s climate. They also include a 10-percent buffer for “normal” activity beyond minimum life-sustaining levels to allow for energy to undertake physical work and play. However, while these are useful, it should be recognized that methods for setting caloric recommendations continue to evolve in the nutritional sciences.

A second important indicator for comparing dietary adequacy is protein intake. Protein is essential for growth, repair of body tissues, building of bones and teeth, and many other important functions.

Establishing a recommendation for protein is also complex because not all protein sources are of equal quality (see box). Proteins from animal sources contain a complete array of amino acids in the proportion needed by the body and, therefore, most of the protein is usable by healthy individuals. In contrast, many plant products that contain protein—such as cereals, roots, and legumes—lack some essential amino acids, so that not all of their protein content is usable by humans. However, it is possible to obtain complete protein, supplying all the essential amino acids, by combining protein from different plant sources.

To compare protein supplies available between different countries, we took into account the lower usability of protein from plant sources (see box). A quality-adjusted protein level was calculated for each country in the Western Hemisphere using the assumption that plant proteins provide half the amount of usable protein as animal protein.

**Latin American Diets Lag Behind United States, Canada**

Latin American consumers spend a larger share of their income on food than do people in the United States or Canada. Because per capita incomes are much lower in Latin America, most consumers there are not able to purchase as much food as their U.S. and Canadian counterparts.

Both per capita calorie and protein supplies in Latin American diets are below U.S. levels. In fact, national food supplies in some of these countries are below the level needed to meet the population’s nutritional needs.

The FAO classifies countries as “food deficit” if national production is insufficient to cover total food requirements and if they have per capita income below the level used by the World Bank to determine eligibility for special, concessional loan terms (the 1991 level was equivalent to US$1,235 per person per year).

Food supplies in Western Hemisphere countries designated as “food deficit” by FAO—the Dominican Republic, Haiti, El Salvador, Guatemala, Honduras, Nicaragua, Bolivia, Ecuador, and Peru—either do not meet average per capita calorie requirements or have only a small calorie surplus available (fig. 2).

Calorie levels in some other countries that are not classified as food deficit—notably Chile, Colom-

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**Figure 2**

**Caloric Intakes in Four Latin American Countries Compare With the United States**

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*Designated as food deficit by United Nations Food and Agriculture Organization (FAO). Note: Intake data are 1986-90 averages. Source: Calculated from FAO food balance sheets. Caloric requirements are from FAO's 4th World Food Survey.
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Bia, Panama, Uruguay, and Venezuela—are also below or only slightly above per capita caloric intake recommendations. The caloric levels available in these countries are similar to those in other developing countries, such as India and China.

In contrast, the food supplies in the United States, Canada, Argentina, Costa Rica, Cuba, and Mexico all offer at least a 20-percent calorie surplus over the per capita average caloric requirement (fig. 2). (However, there have been reports of shortages of imported foods in Cuba since the dissolution of the Soviet Union, formerly Cuba’s major trade partner.) Similar calorie surpluses are found in other industrialized countries, such as the former Soviet Union, France, Poland, and Japan.

It should be noted, however, that although the adequacy of the food supply in meeting caloric requirements can be used for a comparison of diets between nations, it should not be used as the sole indicator of hunger or malnutrition in any particular country, since averages cannot account for unequal distribution of food within regions or households, or for seasonal variations in the diet. Hunger and malnutrition can and do exist even in countries with large caloric surpluses.

The Latin American countries with food supplies inadequate to meet per capita caloric requirements would almost certainly use rising income to buy more food. The other countries in which food supplies are marginally adequate also would likely increase food intake with income growth. The surplus per capita caloric intake levels found in higher income countries suggest that consumers often prefer to have food supplies well above the minimum requirements when they can afford it.

As with caloric intake, the food supplies in those countries classified as food deficit ranked the lowest in quality-adjusted protein levels (fig. 3). However, all have per capita quality-adjusted protein levels within or above the FAO adult intake guidelines’ range of 29 to 37 grams per person per day, but below the world average of 48 grams per person per day (see box).

In contrast, quality-adjusted protein intake levels in the United States and Canada are over twice the FAO guidelines. Argentina’s per capita intake levels are comparable with those in the United States and Canada. The remaining Latin American countries also have quality-adjusted protein intake levels well above the FAO guidelines.

Even though food supplies in all Latin American countries provide enough protein to meet the FAO’s adult intake guidelines, most provide less than half of what is available in the United States and Canada. This suggests that an increase in Latin American incomes could increase the demand for protein-rich foods, particularly more animal products.

Higher Incomes Would Reduce Reliance on Starchy Staples

In addition to increased demand for animal products, income growth in poor households is likely to bring other changes in food consumption patterns, such as increased consumption of fats, oils, sugar, as well as more highly processed foods. As a result, a diminishing share of calories would come...
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from inexpensive carbohydrate sources, or "starchy staples," which include wheat, maize, rice, sorghum, and other food grains, as well as potatoes, sweet potatoes, yams, cassava, and other starchy roots and tubers.

The reliance on starchy staples makes both economic and nutritional sense when food resources are scarce, because they generally require fewer agricultural resources to produce and are more affordable than meat or vegetable oils.

Latin American diets depend heavily on starchy staples, especially in countries classified as food deficit (fig. 4). While consumers in the United States and Canada derive one-fourth of their calories from grains, potatoes, and other starchy roots and tubers, these provide one- to two-thirds of calories in Latin America. However, food supplies in most Latin American countries contain a smaller share of starchy staples than the world average of 56 percent.

Food Supplies Must Increase Significantly To Reach U.S. Levels

To bring Latin American average per capita food consumption up to the 1990 U.S. level would require significant increases in food supplies—especially more expensive foods, such as meat and vegetable oils.

Latin American food grain consumption is already high in many countries because consumers depend on grains to meet a large share of food needs. However, eight of these countries have per capita food grain supplies below the U.S. level of 113 kilograms per person per year. Supplies in Bolivia, Belize, Colombia, Dominican Republic, Ecuador, Haiti, Paraguay, and Peru range between 86 and 105 kilograms per capita per

Figure 4
Latin American Diets Depend Heavily on Starchy Staples

Figure 5
Latin American Food Supplies Must Increase Significantly To Reach U.S. Levels

Note: Data are based on 1990 consumption levels. Source: Calculated from FAO food balance sheets.
Not All Proteins of Equal Quality

Protein quality and usability can differ tremendously between different kinds of foods. Thus, a variety of scales have been developed to measure the relative quality of protein of foods. For example, the Food and Agriculture Organization (FAO) and World Health Organization (WHO) developed a chemical scoring system to rank food protein quality in relationship to hen's eggs, a very high-quality source.

Under FAO’s scoring system, eggs score 100 in food protein quality. In comparison, wheat, potatoes, some pulses, some nuts and seeds, cassava, and maize range around 50 to 55, while rice, barley, and sweet potatoes are around 65. Soybeans score 74—very high for a plant source. Meats and fish score 99-100. Cow’s milk scores 95; human milk 100.

Because the body actually uses less of the plant proteins, it is necessary to consume greater quantities of plant proteins as compared to meat, milk, or eggs to obtain the same amount of usable protein. That is, the 49 score for maize means that about 2 kilograms of maize would have to be eaten to obtain the same amount of protein as 1 kilogram of beef, which has a protein-quality score of 100.

However, it is possible to improve the usability or score of plant protein by combining two or more different types of protein-containing foods. For example, when eaten alone, the protein from maize scores 49 on the FAO scale. However, when eaten with other protein from legumes, nuts, seeds, or even animal protein, the maize protein usability improves.

For this study, the quality-adjusted protein intake level was estimated by adding the amount of protein available from animal sources to half the amount of protein available from plant sources (since only part of it is usable). The quality-adjusted protein intake level represents the level of intake if, on average, the plant sources scored 50 on the FAO/WHO scale. This method does not account for the complementary interaction between plant sources to achieve complete proteins, nor the inability of the human body to use protein from any source when chronic hunger exists.

The FAO intake recommendations, or “safe level of intake,” for high-quality protein (scoring 95 to 100) ranges from 14 to 38 grams per day for children and adolescents, and from 29 to 37 grams for adults. However, pregnant and lactating women need up to twice the amount of protein as do other women. The “safe level” protein intake range for adults (not pregnant, not lactating) is shown by the shaded area in figure 3.

Such protein “safe levels” should not be interpreted as exact nutritional requirements. Instead, these are guidelines which have been set high enough so that almost all healthy individuals will meet their physiological needs by consuming these recommended quantities of protein.

year. (However, roots and tubers provide a significant supplement to starchy staple calories in Bolivia, Colombia, Haiti, Paraguay, and Peru). To bring the average per capita grain consumption of these eight countries up to the 1990 U.S. level would require an additional 2 million metric tons (mmt) of grain per year.

Virtually all major Latin American countries have less meat and vegetable oil available per capita than do U.S. consumers. In 1990, vegetable oil available for consumption in the United States was 23 kilograms per capita, over twice that of Latin America’s average of 9.5 kilograms. U.S. meat supplies were 115 kilograms per person in 1990, compared with an average of 35 kilograms in Latin America—only 30 percent of the U.S. level. Vegetable oil supplies would have to increase by 5 million metric tons per year, and meat supplies would have to increase by 31 million metric tons to bring Latin America up to the 1990 U.S. levels.

In addition, food supplies would have to grow at the same rate as the Latin American population, about 2 percent per year, to maintain these higher per capita consumption levels.

This strong population growth makes the region an important potential market—most of the Western Hemisphere’s consumers live in Latin America, and they will make up an ever-increasing share of the population. In 1990, 60 percent of all people living in the Western Hemisphere were citizens of Mexico, Central or South America, and the Caribbean. These same countries are expected to be home to an additional 130 million people by the year 2005, while the combined U.S. and Canadian population is expected to grow by a more modest 30 million.