

10 Globalization, Trade, and the Nutrition Transition

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INTRODUCTION

The world is characterized by huge nutritional inequities. Undernutrition, especially among children, persists at unacceptably high levels, leading to poor health in the poorest and most vulnerable communities around the world. At the same time, a “nutrition transition” to energy-dense, poor-quality diets is occurring, leading to obesity and diet-related chronic diseases (DRCD) among poor populations in middle- and high-income countries (or developed and transitioning countries).

This chapter begins with an overview of the double burden of malnutrition. It then identifies and analyzes the role of processes of globalization within the food system that are linked to the increase of poor-quality diets: the rise of transnational food corporations (TFCs), international food trade, and the use of global food advertising and promotion. It also examines how these processes are changing diets through their interaction with changes in the social system such as household livelihood and income, shifting global demographics, and increasing levels of urbanization.

THE DOUBLE BURDEN OF MALNUTRITION

Since the 1980s, the proportion of undernourished children and adults in the world has declined. The rate of decline, however, was slow; the numbers remain high; and in Africa, the actual number of undernourished people rose (Tables 10.1, 10.2, and 10.3). The Food and Agricultural Organization of the United Nations (FAO) estimates that between 2001 and 2003, 854 million people worldwide were undernourished: 820 million in developing countries, 25 million in transition countries, and 9 million in industrialized countries (FAO, 2006). In developing countries, this represents a decline of just 3 million people since 1990–92 (Table 10.1); between 2000 and 2003 there was an actual *increase* of 23 million, offsetting a decline of 26 million between 1990 and 1997. By far the largest

number of undernourished people live in Asia (mainly South Asia), but it is only in Africa that the number of undernourished people has increased since 1990 (FAO, 2006). The proportion and number of stunted¹ and underweight² children in developing countries declined between 1980 and 2005, but in Africa, while the proportion declined, the number of stunted children increased, as did both the proportion and number of underweight (Tables 10.2 and 10.3). There were an estimated 165 million stunted and 138 million underweight children in developing countries in 2005.

Table 10.1 Number and Proportion of Undernourished People in Developing Countries, 1990–1992 and 2001–2003

Region	Number of Undernourished People (million)		Proportion of Undernourished People (%)	
	1990–1992	2001–2003	1990–1992	2001–2003
Sub-Saharan Africa	169.0	206.2	36	32
Near East & North Africa	25.0	37.6	8	9
Asia	569.7	524.0	20	6
Latin America/Caribbean	59.6	52.4	13	10
DEVELOPING WORLD	823.1	820.2	20	17

Source: Adapted from United Nations Food and Agriculture Organization, 2006, p. 32.

Table 10.2 Estimated Prevalence and Number of Stunted Children in Developing Countries, 1980 (actual) and 2005 (forecasted)

UN Region	Prevalence of Stunting (%)		Number Stunted (million)	
	1980 (actual)	2005 (forecasted)	1980 (actual)	2005 (forecasted)
Developing countries	47.1	29.0	221.35	164.70
Africa	40.5	33.8	34.78	49.40
Asia	52.2	29.9	173.37	110.19
Latin America/Caribbean	25.6	9.3	13.19	5.11

Source: Adapted from United Nations System Sub-Committee on Nutrition, 2000.

Table 10.3 Estimated Prevalence and Number of Underweight Children in Developing Countries, 1980 (actual) and 2005 (forecasted)

UN Region	Prevalence of Underweight (%)		Number Underweight (million)	
	1980 (actual)	2005 (forecasted)	1980 (actual)	2005 (forecasted)
Developing countries	37.4	24.3	175.74	137.95
Africa	26.2	29.1	22.47	42.45
Asia	43.9	25.3	145.95	93.16
Latin America/Caribbean	14.2	4.3	7.32	2.35

Source: Adapted from United Nations System Sub-Committee on Nutrition, 2000.

By numbers, micronutrient deficiency is an even larger problem. Iron deficiency and anemia affect at least 3.5 billion people in the developing world; more than 740 million people are affected by goiter (a result of iodine deficiency), and 2 billion are at risk for dietary iodine deficiency; between 78 and 254 million people are estimated to suffer from vitamin A deficiency; large numbers also suffer from zinc deficiency (United Nations System Sub-Committee on Nutrition, 2000).

Against this background, it is ironic that the proportion and number of adults and children who are overweight or obese is increasing, particularly in the developed or high-income countries of the world. According to the World Health Organization (WHO), in 2005 approximately 1.6 billion adults (age fifteen and over) worldwide were overweight, at least 400 million of whom were obese (World Health Organization, 2006). In addition, at least 20 million children under the age of five years were overweight. WHO further projects that by 2015, approximately 2.3 billion adults will be overweight and more than 700 million will be obese.

Obesity has become an important global public health concern because it is a core risk factor for the development of DRCs such as cardiovascular diseases (CVDs), diabetes, and some cancers, as well as the associated risk factors of high blood pressure and cholesterol. Although CVDs have been the leading causes of death in developed countries for decades, CVD is now projected to be the leading cause of mortality in developing countries as well, and 80 percent of all deaths from chronic diseases occur in developing countries (World Health Organization, 2005). Worldwide, the number of individuals with diabetes is estimated to rise from 171 million (2.8 percent of the world's population) in 2000, to 366 million (6.5 percent) in 2030, 298 million of whom will live in developing countries (Wild, Roglic, Green, Sicree, & King, 2004).

Likewise, the number of people who are overweight and obese is growing particularly rapidly in developing countries, from Brazil to Morocco, India to China, Saudi Arabia to Thailand (World Health Organization, 2000; Popkin & Gordon-Larsen, 2004; Prentice, 2006). As shown in Figure 10.1, the prevalence of overweight is considerably higher in urban areas in the developing world, but in Latin America, the Middle East, and South Africa, overweight is also higher than underweight in rural areas. Moreover, the situation found in high-income countries, where prevalence of obesity and related diseases is disproportionately high among groups of lower socioeconomic status (SES), is beginning to repeat in middle-income countries. A recent review of the evidence concluded that as developing country gross national product (GNP) increases, the burden of obesity shifts towards lower SES groups. After countries cross a GNP threshold of about US\$2,500 per capita, women of low SES have proportionally higher rates of obesity (Monteiro, Moura, Conde, & Popkin, 2004). In other words, in both developed and developing countries, obesity starts out as a problem among groups of higher SES but as national economies grow, the

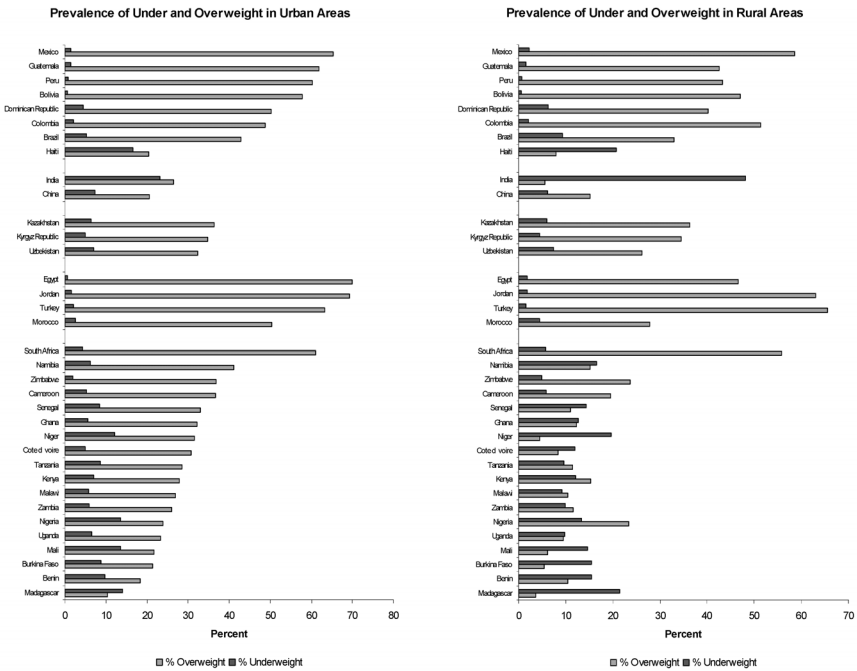


Figure 10.1 Prevalence of overweight and underweight in urban and rural areas of developing countries.

Source: Adapted from Mendez & Popkin, 2004.

risk moves towards groups of lower SES.³ In Mexico, for example, a recent study showed that overweight and obesity doubled over a six year period in young women living in a poor community (Neufeld, Hernández-Cordero, Fernald, & Ramakrishnan, 2008). In these lower income communities, obesity has been found to coexist with undernutrition within the same household, typically consisting of an overweight mother with a stunted child (Doak, Adair, Monteiro, & Popkin, 2000; Garrett & Ruel, 2005).

These changes in nutritional status can be linked in part to changing diets. In what is often termed the nutrition transition, people are consuming more fats, sweeteners, energy-dense foods, and highly processed foods compared to traditional diets characterized by higher intake of cereals. In industrialized countries, the transition to diets higher in fats, sweeteners, and highly processed foods has been ongoing since the Industrial Revolution (Grigg, 1995). For example, in England, it is estimated that the per person consumption of fat and refined carbohydrates increased five to tenfold over the past two centuries, while the consumption of fiber-rich grains declined substantially (Uusitalo, Pietinen, & Puska, 2002). Today, this shift is taking place in middle- and low-income countries, but at a much faster rate

(Popkin, 2002). The shift typically begins with major increases in domestic production and imports of oilseeds and vegetable oils (Drewnowski & Popkin, 1997). Consumption then increases of animal-source foods (meat, milk) and processed foods such as snacks, soft drinks, breakfast cereals, and processed dairy products. The transition is also characterized by increased consumption of foods away from home, such as street foods and fast foods. As a result of these changes, people who do not consume sufficient energy to assuage hunger face nutrition insecurity through an inadequate supply of micronutrients, while those who do consume sufficient energy also face nutrition insecurity through an intake of unhealthy levels of saturated fat and free sugars.

GLOBALIZATION AND DIET: A QUESTION OF CHANGING FOOD AND SOCIAL SYSTEMS

It is widely postulated that the nutrition transition towards poor quality, energy-dense diets and the increasing prevalence of chronic disease is deeply rooted in the processes of globalization. Two plausible pathways can be identified. First, globalization-driven changes in the social system, including income growth, urbanization, and employment, can drive dietary changes. Second, globalization-related changes in the food system can alter the amount and quality of food available for consumption. Changes in both the social and food system are important in and of themselves but are of course interconnected, making it difficult to attribute exactly the influence of specific components.

CHANGES IN THE SOCIAL SYSTEM

While this chapter focuses mainly on the food system, some contextual understanding of the possible influence of globalization on the social system is necessary, particularly if we are to understand the unequal distribution observed in overnutrition (Friel, Chopra, & Satcher, 2007). Ecological studies suggest that increasing national income and urbanization are associated with changes in diet and prevalence of obesity. Countries with higher GNPs and more urbanized populations consume greater amounts of energy from fats, sweeteners, and protein (Popkin, 1999; Dixon et al., 2007). It has also been estimated that body mass index (BMI), along with systolic blood pressure and total cholesterol, increases with national income until about I\$5,000 (international dollars)⁴ and then levels off. BMI increases continuously with greater urbanization (Ezzati et al., 2005). Thus, to the degree that globalization has helped to generate higher national incomes and encouraged more urbanization, it is associated with the nutrition transition through changes in ways of living and associated food demands.

But it should be noted that the relationship among globalization, income, urbanization, employment, and nutrition is not straightforward. Many have disputed whether globalization really does lead to higher household incomes for all (see Chapters 2 and 13, this volume). It has already been shown that in some countries, people of lower SES consume more obesogenic diets, indicating that even if there is a relationship between rising incomes and obesity at the level of national populations, it may not operate at the individual or household level. Moreover, the nutrition transition among people of lower SES is occurring faster in today's developing countries than earlier transitions in industrialized countries. The nature of urbanization and the resulting built environment appears to have a greater adverse impact on low-income households that are more constrained by lack of transportation and lack of healthful food purchasing choices in lower-income neighborhoods (Dixon et al., 2007). Globalization-induced changes in employment conditions have possible ramifications

Box 10.1 Implications for diet: Changes in the Indian social system.

India's emergence as one of today's most rapidly growing economic forces arises partly because of a shift in the late 1980s away from its historical commitment to nonalignment and self-reliance, to greater international trade liberalization, liberalization of foreign direct investment, fewer restrictions on large enterprises, and liberalization of the financial sector. However, like many transitioning countries, the nature of India's integration into the globalization process and accompanying structural adjustment programs appears to have been characterized by cuts in some areas of welfare spending, low employment generation, greater income inequality, and persistence of poverty (Gupte, Ramachandran, & Mutatkar, 2001).

Since 1997, the Indian economy has grown on average by 5.4 percent each year, resulting in a burgeoning urban middle class that is roughly the same size as the whole of the United States. Juxtaposed with national wealth are the persistently high rates of poverty, which, while declining, remain a very serious problem in rural and urban slum areas. Notably, over the course of the 1990s, much of the push in urban areas was towards informal, unprotected labor. With wages not indexed to inflation, this growing group is disproportionately affected by rising food prices (Ghosh, 2002).

Both economic growth and workforce changes were enjoyed most acutely by the urban middle-class professionals and skilled workers, and helped to fuel increases in market demand for high-value foods such as meat, fruit, vegetables, and edible oils, which were highly import intensive, and have created a boom in certain consumer goods (Ghosh, 2002). Through globalization of the economy the middle-class, Indian dietary habits have converged with those of the Western world, that is, high in saturated fat and refined sugars.

Even though India experienced continued economic growth, employment, which grew by 2.5 percent per annum between 1987 and 1988, and 1993 and 1994, slowed down to 1.1 percent between 1993 and 1994, and between 1999 and 2000. During this period of globalization, work in the agriculture sector stagnated (Papola, 2005). The reduction in state subsidies supporting domestic produce, the depression of domestic prices due to cheaper imports, and technological and infrastructural factors have affected both the nature of the national food supply and employment and working conditions for those in the agricultural sector.

for nutrition security, although the evidence remains sparse. Time pressures and strain associated with precarious employment conditions make fast access to energy-dense foods more attractive. More fundamentally, changing labor market conditions mean reduced job security and limited access to benefits such as paid family leave that undermine those financial and psychosocial resources necessary for individuals and communities to make healthy living choices (Friel et al., 2007). An example of how globalization has affected diets through these changes in the social system is given in Box 10.1.

CHANGES IN THE FOOD SYSTEM

Globalization is also influencing diets by radically altering the nature of the food system. As stated by Kennedy, Nantel, and Shetty:

[G]lobalization is having a major impact on food systems around the world . . . [which] affect availability and access to food through changes to food production, procurement and distribution and the food trade environment . . . in turn bringing about a gradual shift in food culture, with consequent changes in dietary consumption patterns and nutritional status that vary with the socio-economic strata. (2004, p. 1)

The evidence suggests that diets have been influenced by three important changes in the food system: the growth of TFCs, including transnational supermarkets; liberalization of international food trade and foreign direct investment (FDI); and global food advertising and promotion (Table 10.4). All three are fundamental to the process of globalization, and can be conceptualized as affecting diet by altering the availability, prices, and desirability of food.

Table 10.4 Globalization Processes Linked With the Nutrition Transition

Globalization Process	Dietary Implication
Growth of TFCs, including supermarkets	Increases availability of processed foods (fast foods, snacks, soft drinks) through growth of fast-food outlets, supermarkets, and food advertising/promotion; driven by trade and FDI. Growth of transnational supermarkets changes food availability (increases diversity of available products), accessibility, price, and way food is marketed
Liberalization of international food trade and foreign direct investment (FDI)	Imports change availability of foods and/or their price ; investment changes type of foods available, their price, and the way they are sold and marketed
Global food advertising and promotion	Shapes food preferences by affecting desirability of different foods

The Growth of Transnational Food Processors, Fast-Food Companies, and Supermarkets

TFCs now increasingly organize food production, distribution, and marketing on a global scale. Globalization has provided powerful incentives for the formation of these transnational companies (Box 10.2). TFCs grow through FDI, often acquiring partial or complete ownership of a local company. This allows companies to buy, sell, and invest in other companies in other countries, one of the processes through which vertical integration of the global food chain is taking place.

The market power of TFCs throughout the food supply chain has grown considerably with globalization. Globally traded agricultural commodities, from bananas to sugar to coffee, are now controlled by a relatively small number of processors and retailers (Vorley, 2003). Meat producers and processors have become increasingly concentrated (Table 10.5), while the largest food processors and retailers have spread their global reach and increased sales (Table 10.6) (Hendrickson & Heffernan, 2005).

Box 10.2 How globalization has encouraged the growth of TFCs.

- FDI in the food industry as the key process by which TFCs form and grow.
- The commercialization and privatization of state food monopolies, further opening opportunities for investment by the domestic and foreign private sector.
- FDI in the service sector, the streamlining of dispute settlement mechanisms under the World Trade Organization, and stronger and broader intellectual property rights (see Chapter 11, this volume) facilitate the ability of TFCs to conduct business and increase access to capital and technology, encouraging further investment by TFCs.
- More liberalized cross-border trade and FDI facilitates “global vertical integration” by which TFCs and their buying and contracting companies and services become involved in all aspects of the production, processing, distribution, and sale of a particular food, bringing the entire food supply chain under TFC control.
- Greater liberalization of cross-border trade also facilitates “global sourcing,” when a company searches for inputs, production sites, and outputs where costs are lower and regulatory, political, and social regimes favorable. Both vertical integration and global sourcing enable TFCs to cut costs and create safeguards against the uncertainty of commodity production and product sales, stimulating further growth of TFCs.

Table 10.5 Concentration Ratio (CR)^a of Selected Food Sectors in the United States

Sector	Historical CR (date)	CR in 2003
Beef packers	72% (1990)	84%
Broilers	44% (1990)	56%
Pork packers	40% (1990)	49%
Food retailers	24% (1997)	46%

Source: Adapted from Hendrickson and Heffernan, 2005.

Note: ^aCR is the concentration (relative to 100%) of the top four firms in that specific food sector.

Table 10.6 Sales From the Largest TFCs in Food Processing and Retail, mid-2000s

Sector	TFC (country-base)	Sales US\$ Billions (year)
Food processors	Kraft Foods Inc. (US)	21.9 (2003)
	Tyson Foods Inc. (US)	21.9 (2003)
	Pepsico Inc. (US)	18.3 (2003)
Food retailers	Wal-Mart (US)	244.5 (2004)
	Carrefour (France)	64.7 (2004)
	Royal Ahold (Netherlands)	59.2 (2004)

Source: Adapted from Hendrickson and Heffernan, 2005.

The most dramatic increase in power has been among food retailers, which have emerged as dominant players in the food system (Murphy, 2006). In Europe, merely 110 retail buying desks served 160 million consumers and 3.2 million farmers and producers in 2003 (Vorley, 2003). European and US-based grocery retailers are expanding transnationally: in 2002, 49 percent of French-based Carrefour's sales came from the foreign market, as did 85 percent of Dutch-based Royal Ahold's sales (Vorley, 2003). In just the ten years since Wal-Mart first started to sell food, it has emerged as the world's largest grocery chain, with 45 percent of total sales coming from groceries (Murphy, 2006). In 2004, Wal-Mart was estimated to have 6.1 percent of the global grocery market, with Carrefour at 2.3 percent. In 2003 the top thirty retailers had 19 percent of the market in Asia and Oceania and 29 percent of the market in Latin America, and in all continents mergers and acquisitions are ongoing. Supermarkets now control 50 to 60 percent of the food retail sector in Latin America. The effect of these trends is similar everywhere: supermarket chains are replacing local food shops, bringing in capital and know-how to deliver a variety of food to consumers in one place (Murphy, 2006).

TFCs have altered the food supply by increasing the availability of processed and fast foods through the growth in food-processing companies and large transnational supermarkets and fast-food outlets, and by making them more desirable through advertising and promotion (McMichael, Shetty, & McPherson, 1997; Lang, 1999; Chopra, Galbraith, & Darnton-Hill, 2002; Chopra, 2002; Hawkes, 2002, 2006; Chopra & Darnton-Hill, 2004; Kennedy et al., 2004; Kinabo, 2004; Sawaya, Martins, & Martins, 2004).

The largest foreign affiliates of TFCs in developing countries are often food companies specializing in producing some type of processed foods (Table 10.7). FDI has played a particularly important role in shaping the growing global market for such foods (Connor, 1994; Vepa, 2004; Hawkes, 2005, 2006). Food processing is now the most important recipient of FDI relative to other parts of the food system, and FDI is more important in the global processed-foods market than trade. US FDI into foreign food processing companies grew from US\$9 billion in 1980 to US\$36 billion in

2000. Sales by these companies increased from US\$39.2 billion in 1982 to US\$150 billion in 2000; trade, by contrast, generated a relatively small US\$30 billion in processed food sales in 2000. While a high proportion of this FDI is still targeted at high-income countries, an increasing proportion is entering developing and transition markets, notably Latin America, Asia, and Central and Eastern Europe. The evidence also shows that as FDI into food processing companies has risen, the allocation of investment has shifted away from products for export to the home market towards foods for sale in the host market. In 1998, 74 percent of the sales of affiliates of US food companies remained in the host market.

A second trend has been the shift of FDI away from primary to highly processed foods. For instance, Central and Eastern Europe and the Baltic states attracted soaring rates of FDI in the food sector in the 1990s, concentrated on soft drinks and confectionery. The confectionery sector in Poland attracted FDI of US\$963 million between 1990 and 1999, more than the FDI in meat, fish, flour, pasta, bread, sugar, potato products, fruits, vegetables, vegetable oils, and fats put together. On a global scale, this trend has led to the dominance of foreign investors in the highly processed-food sector. In China, there are numerous national and local food companies, some of which have successfully outcompeted foreign companies. But in packaged foods, such as instant noodles, soft drinks, snacks, sweet biscuits, and fast foods, foreign investors dominate. Further evidence comes from Mexico, as described in Box 10.3 (Hawkes, 2006).

This is not to underestimate the importance of domestic investment in the processed-foods industry, as shown by evidence from India. In India the consumer-food industry remains relatively small but has been growing since 1990, notably in packaged bread and biscuits. Consumption of these products has increased. Yet a relatively small proportion of this growth came from foreign relative to domestic investment: of the US\$156 billion of investment in the Indian processed-foods industry between 1991 and 2002, just US\$2 billion was from FDI (Vepa, 2004).

The second key aspect of the growth of TFCs has involved transnational supermarkets. Supermarkets have fast become the new locus of power in the food system and now provide an increasing amount of the world's food to consumers (Tables 10.5 and 10.6). FDI from US-based supermarket chains grew to nearly US\$13 billion in 1999, up from around US\$4 billion in 1990. European-based supermarkets have transnationalized to an even greater extent: Carrefour (France), Tesco (UK), and Metro (Germany) are the second, third, and fourth largest supermarkets worldwide, after Wal-Mart, the world leader (Hendrickson & Heffernan, 2007).

The growing importance of supermarkets has two important related dietary implications: shifting demand for home-produced foods or foods purchased in open ("wet") markets to increased dependence on store-bought foods supplied by TFCs; and expanding available food choices, especially of processed foods (Lang, 1999; Chopra, 2002; Cwiertka &

Box 10.3 Foreign direct investment, supermarkets, and processed foods in Mexico.

In 1994, Mexico, the United States, and Canada signed the North American Free Trade Agreement (NAFTA). The agreement contained key provisions designed to facilitate foreign investment, and stimulated a rapid acceleration of FDI from the United States into Mexican food processing. Between 1983 and 1993, US FDI into the Mexican food-processing industry increased from US\$210 million to US\$2.3 billion. Five years after NAFTA was signed, FDI into the Mexican food industry from the United States had risen to US\$5.3 billion, nearly three-quarters of which went into the production of processed foods.

The passage of NAFTA also had a profound effect on the food retailing sector in Mexico. The number of chain supermarkets, discounters, and convenience stores grew from less than 700 in 1993 to 3,850 in 1997 and 5,729 in 2004 (Hawkes, 2006). Growth occurred largely through major investments by foreign-based retailers. Modern retailers, notably supermarkets and convenience stores, now account for 55 percent of all food retail in the country. US-based Wal-Mart de Mexico (known as Walmex) has been particularly successful; it is now the nation's leading retailer. In 2004, there were 663 million customer transactions at 420 Walmex supermarkets and discount stores and 290 Walmex restaurants in seventy-nine cities; in 2004, sales increased by 11 percent to reach a record high of US\$12.4 billion. The company also employs more people (109,075) than any other company in Mexico.

Large supermarkets in Mexico, like Walmex, stock a far wider range of processed foods than the small, traditional family-owned *tiendas*. During the time period of the rise of supermarkets, sales of processed foods (e.g., soft drinks, snacks, baked goods, and dairy products) expanded rapidly relative to other food groups, at a rate of 5–10 percent per year (between 1995 and 2003). Importantly, thousands of *tiendas* also sell (almost exclusively) soft drinks and snacks.

Walraven, 2002; Fajardo, 2004; Kennedy et al., 2004; Kinabo, 2004; Pingali & Khwaja, 2004; Sawaya et al., 2004; Schmidhuber & Prakash, 2004; Hawkes, 2006; Popkin, 2006; Dixon et al., 2007). The entry of supermarkets into developing countries is marked initially by specialization in the sale of processed foods; after establishment, supermarkets diversify into products like frozen meat and fruits and vegetables (Kennedy et al., 2004; Schmidhuber & Prakash, 2004; Popkin, 2006). This focus on processed foods occurs because supermarkets are better able to make available a far wider range of such foods than are small stores, to take the risks inherent in introducing new foods, and to sell them at lower prices (Hawkes, 2006). The case of Mexico again presents an illustrative example of the effect of the growth of supermarkets (Box 10.3).

Fast-food companies have grown along with supermarkets. Figure 10.2 shows that, while the number of McDonald's outlets in the United States increased rapidly between 1991 and 2001, the proportion of outlets outside the United States increased at an even faster rate. Other data show that even in countries like Tanzania, where the number of fast-food outlets remains quite small, their presence and popularity are fast rising, propelled by advertising and promotion (Kinabo, 2004).

Table 10.7 Examples of Low- and Middle-Income Countries in Which Food Companies are Among the Three Largest Foreign Affiliates in the Industrial or Tertiary Sector

Country	Sector (rank 1–3 by sales)	Company Name (country base)	Sales (US\$ millions) ^a
Africa			
Algeria	Food, dairy (1)	Laiterie Djurdjura (France)	29.8
Cape Verde	Beverages, beer/soft drinks (1)	Ceris-Soc CV Cerveja Ref (Luxembourg)	1.8
Kenya	Food, packaged (3)	Unilever Kenya (UK)	141.0
Morocco	Food, packaged (3)	Nestlé Maroc (Switzerland)	88.4
Rwanda	Beverages, beer/soft drinks (1)	Brasseries et Limonaderies (Netherlands)	28.6
Zimbabwe	Food, meat (1)	Meat Importers (UK)	25.0
Asia / Pacific			
Cambodia	Beverages, soft (2)	Cambodia Beverage Company (Coca-Cola) (Singapore)	Not known
Samoa	Beverages, beer/soft drinks (2)	Samoa Breweries (Japan)	Not known
Central & Eastern Europe			
Albania	Beverages, soft (2)	Coca-Cola Bottling Enterprises (USA)	Not known
Bosnia-Herzegovina	Beverages, soft (3)	Coca-Cola (USA)	Not known
Croatia	Beverages, beer (1)	Zagrebacka Pivovara DD (Belgium)	49.4
Estonia	Food, meat processing (3)	Rakvere Lihakombinaat AS (Finland)	72.8
Kazakhstan	Diversified, including food (1)	Procter & Gamble (USA)	150.0
Moldova	Food, dairy (2)	Alba (USA)	Not known
Romania	Retail, including food (1)	Metro Cash and Carry SRI (Germany)	359.8
Ukraine	Beverages, soft (3)	Coca-Cola Beverages Ukraine Ltd. Co. (USA)	42.0
Latin America			
Brazil	Retail, including food (2)	Carrefour Comercio E Industria (France)	4412.0
Costa Rica	Food, fruit production (3)	Standard Fruit Company de Costa Rica (USA)	173.0
Ecuador	Food, packaged (2)	Nestlé Ecuador (Switzerland)	102.0
Mexico	Retail, including food (1)	Wal-Mart de Mexico (USA)	9607.0

Source: Hawkes, 2005. Reprinted with permission.

Note: ^aData are taken from 1999, 2000, 2001, or 2002.

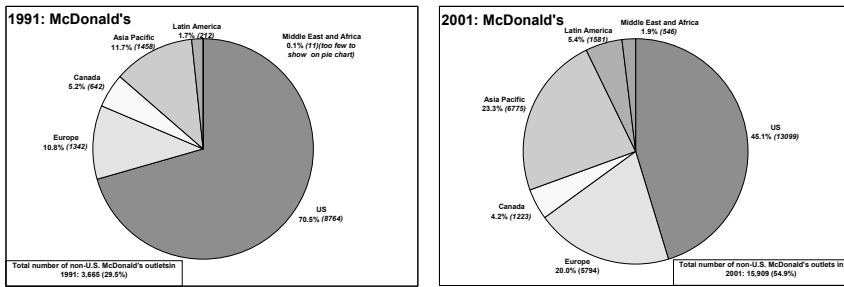


Figure 10.2 Worldwide number of McDonald's outlets, by region, 1991 and 2001 (proportion and number).

Source: Hawkes, 2002. Reprinted with permission.

TFCs and Changing Dietary Patterns

There can be no question that processed foods now loom larger in the global diet. Between 2000 and 2005, sales of packaged foods increased from US\$1.095 billion to US\$1.455 billion (Euromonitor, 2006). Globally, the fastest growth was in snack bars, followed by ready meals. The number of transactions at fast-food chains is also increasing in countries all over the world (Figure 10.3). Sales of processed foods in developing countries are lower than in developed countries (one-quarter or less of all food expenditures, compared with almost half), and sales of primary processed foods (e.g., fats and oils) relative to highly processed foods are greater. Yet annual sales growth of all processed foods is around 29 percent in low- to middle-income countries compared with 7 percent in high- to middle-income countries. For example, in Brazil, growth in real volume sales of hamburgers, biscuits, ready-to-eat desserts, yogurts, and flavored milk amounted to an average 27 percent between 1993 and 1997, compared with 5 percent for vegetable oils, margarines, beef, poultry, and pork meat. Sales of breakfast cereals are registering double- and triple-digit growth in many developing countries, while sales growth of ready-to-eat meals has been dramatic in Eastern Europe and Latin America. Soft-drink sales are growing rapidly in Eastern Europe, Asia, and Latin America. Vietnam, China, and Indonesia are expected to be the fastest-growing markets for packaged food retail sales over the coming years, with growth rates forecast at 11, 10, and 8 percent, respectively. Korea, Thailand, India, and the Philippines rank among the top ten growing markets, with total packaged food retail sales expected to grow by 5 to 7 percent annually.

Direct evidence on changes in the amounts of processed foods manufactured by TFCs, however, is lacking. One study (Adair & Popkin, 2005) actually suggests these foods contribute relatively few calories to diets among youth in developing countries. The study examined changes in consumption of fast foods, snacks, and soft drinks among youth in China,

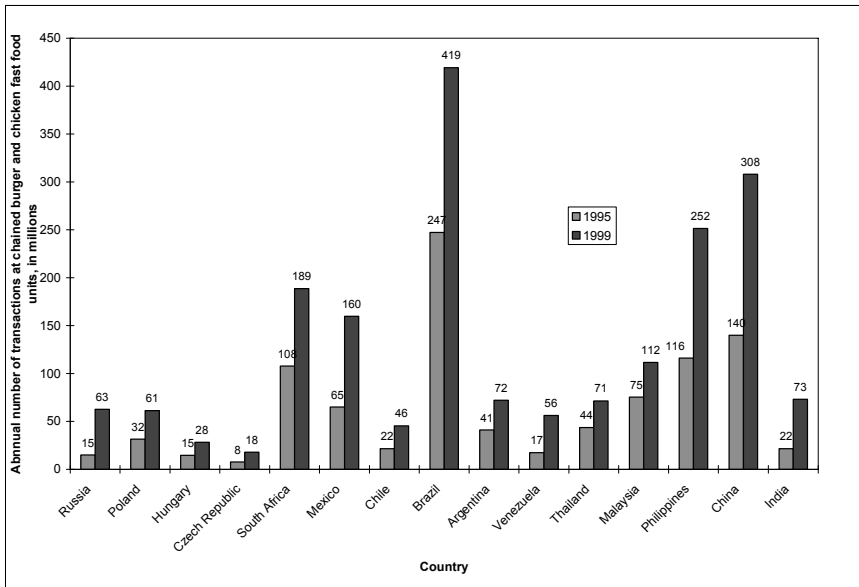


Figure 10.3 Number of transactions at chained burger and chicken outlets in selected countries, 1995 and 1999.

Source: Hawkes, 2002. Reprinted with permission.

Russia, the Philippines (Cebu in metropolitan Manila), and the United States, finding that in the United States, intake of these foods doubled from 10.5 percent to 21.2 percent of total energy intake between 1977 and 1996. The contribution of these foods to caloric intake in the other countries was much smaller. In Chinese youth, modern snacks, fast foods, and soft drinks made up less than 0.1 percent of caloric intake in both 1991 and 2000. In Russian youth, percent calories from modern snacks rose from 0.9 to 1.4 percent between 1994 and 2003, fast food remained the same at 0.2 percent, and soft drinks rose from 0.2 to 0.5 percent. In Cebu youth, percent calories from modern snacks declined from 2.6 percent to 0.6 percent between 1994 and 2002, fast food remained the same at 0.7 percent, and soft drinks rose from 1.6 percent to 3 percent. The evidence thus shows that, relative to the United States, the presence of fast foods, snacks, and soft drinks in the diets of youth remains relatively small, although these products are beginning to have more dietary significance in these countries.

There is also little direct evidence on how the growth of large supermarkets has influenced dietary patterns. It is clear that consumers are purchasing more foods at supermarkets relative to other stores, and supermarkets sell a wider range of processed foods, but the dietary impacts of this shift has not been subject to rigorous investigation.

In practice, direct measurements of consumption of foods produced by TFCs may not be the best source of evidence of dietary impact. This is because TFCs also have important indirect effects (Hawkes, 2006). TFCs have a reverberating impact on food-system change by introducing new ways to sell and promote foods and stimulating new forms of competition, thereby affecting the availability, accessibility, price, and desirability of foods not just from TFCs but from all actors in the food market

INTERNATIONAL FOOD TRADE

The Growth of International Food Trade

The rise of international food trade, especially imports, is widely perceived as an important determinant of the nutrition transition. In some countries, trade liberalization was initially adopted as a domestic, unilateral strategy. In others, eliminating quotas, lowering tariffs, and privatizing state trading agencies were undertaken as part of structural adjustment programs (SAPs) in many developing countries starting in the 1980s. The pace of reform accelerated in the 1990s as many countries liberalized food trade via global, regional, and bilateral agreements. The 1994 Agreement on Agriculture represented the first time food had been specifically addressed in the General Agreement on Tariffs and Trade (GATT). The GATT was superseded by the World Trade Organization (WTO), which continues to be the major global negotiating mechanism for the reduction of tariffs, export subsidies, and domestic agricultural support. WTO disciplines are now complemented by a proliferation of regional and bilateral agreements including the North America Free Trade Agreement (NAFTA), the Mercado Común Sudamericano (MERCOSUR), the Association of Southeast Asian Nations (ASEAN), and the Central American Free Trade Agreement (CAFTA). The result has been a more liberal regime for international food trade, although it cannot yet be described as “open,” since high levels of protection still exist in various forms.

The global value of food trade grew from US\$224 billion in 1972 to US\$438 billion in 1998, a 95 percent increase that greatly exceeded world population growth of 53 percent during the same time period. Food now accounts for 11 percent of global trade, a proportion higher than that of fuel (Pinstrup-Andersen & Babinard, 2001; Chopra et al., 2002). In developing countries, food-import bills as a share of gross domestic product (GDP) more than doubled between 1974 and 2004, and the amount of trade made up of processed agricultural products rose much faster than primary agricultural products (FAO, 2004).

International Trade and Changing Dietary Patterns

An increase in food imports can have nutritional implications by altering food availability and/or prices, thus helping to shape preferences (Chopra et al., 2002; Chopra, 2002). But the evidence on whether food imports have actually *changed* the nature of the food supply, rather than just substituting for foods previously produced domestically, is rather thin. For example, evidence from the Philippines shows that imports (as of 1999) contributed to over 50 percent of the total supply of milk and milk products, but it is not clear whether this represents an addition to the existing milk supply or a substitution for domestically produced milk (Pedro, Barba, & Candelaria, 2004). Likewise, evidence from Colombia shows that the proportion of calories from imported foods has risen over time, but not whether this has contributed to increased energy availability (Fajardo, 2004).

More compelling evidence comes from India, where market liberalization in the mid-1990s stimulated a rapid increase in imports of low-priced vegetable oils (Hawkes, 2006), which corresponded with a simultaneous increase in consumption (Table 10.8). It also stimulated a switch in the type of oils consumed, away from traditional peanut, rapeseed, and cottonseed oils, and towards imported palm and soybean oils. This is a good example of how the nutrition transition typically begins with major increases in imports of oilseeds and vegetable oils, as shown by Drewnowski and Popkin (1997). A similar process occurred in China. During the 1990s, China implemented new tax and import regulations to encourage soybean imports. Subsequently, imports of soybeans and soybean oil increased and the amount of calories from vegetable oils available for consumption in China increased relative to what would have been produced domestically (Table 10.8). Household survey data also suggest that vegetable oil consumption has increased significantly throughout China in the past fifteen years. Still, it remains unclear whether the increase in vegetable oil imports is driving increased consumption, or whether increased consumer demand is driving increased imports.

The strongest body of evidence on the role played by trade in the nutrition transition comes from the Pacific Islands. Four different studies show that imported foods have altered the “traditional” diet, particularly by increasing fat consumption (Evans, Sinclair, Fusimalohi, & Liava’a, 2001; Schultz, 2004; Hughes & Lawrence, 2005; Cassels, 2006). Many of these changes actually preceded the modern era of economic globalization. Before 1945, each Pacific island was essentially food self-sufficient, with nutritionally adequate diets comprising locally produced staples, fish, and fruits. After 1945, Europeans colonized the islands (a different form of globalization) and foods began to be imported. This marked a specific change in the foods available on the islands: people began to consume increasing amounts of imported foods, and to change their source of calories. Increases of imports continue to this day. In Fiji, total energy supply

Table 10.8 Imports and Consumption of Vegetable Oils in India and China, 1989–1991 and 2000–2002

	1989–1991 ^a	2000–2002 ^a
INDIA		
Imports of soybeans (mT)	102	432
Imports of soybean oil (mT)	25,944	1,055,083
Calories available from soybean oil/cap/day	11	48
Imports of palm oil (mT)	353,790	3,317,333
Calories available from palm oil/cap/day	7	66
Calories available from peanut, cottonseed, and rapeseed oils/cap/day	107	76
Calories available from all vegetable oils/cap/day	158	231
Soybean oil as percentage of calories available from all vegetable oils (%)	7	21
Palm oil as percentage of calories available from all vegetable oils (%)	4	28
CHINA		
Imports of soybeans (mT)	1,961,944	14,368,805
Imports of soybean oil (mT)	435,735	736,254
Calories available from soybean oil/cap/day	27	78
Calories available from all vegetable oils/cap/day	141	213
Soybean oil as percentage of calories available from all vegetable oils (%)	19	37

Source: Hawkes, 2006. Reprinted with permission.

Notes: ^aThe numbers are three-year averages around 1990 and 2001.

derived from imported foods rose from 43 percent to 60 percent between 1985 and 1996 (Schultz, 2004). There is evidence that Pacific Island countries are experiencing “dumping” of high-fat meat cuts, particularly cheap mutton flaps from Australia and New Zealand and turkey tails from the United States (Gittlesohn, Haberle, Vastine, Dyckman, & Palafox, 2003; Gewertz & Errington, 2007).

The availability of imported foods appears to have stimulated a change from “healthy” locally sourced foods (preimports) to “unhealthy” fatty foods (postimports). In Tonga, meat imports rose from 3,389 to 5,559 tons between 1989 and 1999, mainly high-fat chicken parts (Evans et al., 2001). Given that the population of the island increased from 96,000 to 100,000 during the time period (Populstat, 2007), this represents an increase of availability from 0.035 to 0.056 tons per capita (35 to 56 kilograms), an increase of 57 percent. In seven of the islands between 1963 and 2000, the total fat supply increased by between 5 percent and 80 percent, the largest increases in the most economically advanced islands (80 percent in French Polynesia, 65 percent in Fiji) (Hughes & Lawrence, 2005). This is because imported fats and oils have *added* to existing sources of fats, such as coconut oil. Individual imported foods providing fat include vegetable oils, margarine, butter, meat and chickens, canned meat, and canned fish. A survey

on the island country of Vanuatu conducted in 1998 showed that the proportion of energy as fat consumed from imported foods was 44.8 percent for urban populations compared with 8.4 percent for rural and semirural populations. People who consumed fats from imported foods rather than traditional fats were 2.2 times more likely to be obese and 2.4 times more likely to be diabetic.

A further study provides some limited evidence of the role of food imports in the Federated States of Micronesia (Cassels, 2006). There, the initial massive dietary changes started in the 1960s and 1970s when the United States began to provide subsidies to the islands. Imported foods became more accessible and available, and a US-subsidized school feeding program encouraged the consumption of tinned foods and rice. Overweight and obesity rates rose on the islands during the same time period. A particularly important policy change occurred in 1981 with the sale of local fishing rights to the Japanese. After this, consumption of local tuna declined and consumption of tinned fish increased.

It has been argued by some, however, that changing diets have a greater influence on trade than trade has on diets. In other words, trade (in the form of increased food imports) simply meets increased demand for specific foods rather than creating demand itself. For example, Regmi, Ballenger, and Putnam (2004) examined trends in food consumption patterns worldwide, finding that consumption of products associated with a “Mediterranean diet” is increasing (i.e., olive oil, pasta, and cheese), a process the study attributes to growing incomes, GDP, and urbanization. The study presents evidence that this demand is being met by increased trade in these products, although trade continues to be hampered by high tariff barriers and transportation costs. Whether or not increased food trade creates or follows demand (or, most probably, does both), less doubt exists that food advertising and promotion are playing an important role in the globalization of diets and the subsequent nutrition transition.

FOOD ADVERTISING AND PROMOTION

The Growth of Global Food Advertising and Promotion

Advertising and promotion have been a fundamental process of globalization. From the 1980s onwards, advertising agencies transnationalized through FDI, mergers, and acquisitions and grew into vertically integrated global corporations (Hawkes, 2006). Today the global advertising and promotion market is controlled by just a handful of communications networks, mainly headquartered in the United States, Europe, or Japan. An important outcome of this global consolidation has been that agencies previously concerned solely with advertising now have additional

expertise in nonmedia advertising, market research, and communications services, enabling them to supply clients with coordinated and comprehensive promotional campaigns.

The growth of transnational advertising and communications companies has deepened the role of food advertising and promotion by speeding the flow of food products into the global marketplace (Hawkes, 2006). Advertising and promotion works by attracting attention to new products, creating perceived differences between similar products, and improving the apparent value and desirability of products. In so doing, marketing encourages more consumers to consume the products and more producers to produce them, thus advancing the cycle of global market exchange and integration.

Global food advertising expenditure is high and is increasing steadily in developing countries. Total global advertising expenditure rose from US\$216 billion to US\$512 billion between 1980 and 2004 (World Watch, cited in Hawkes, 2006). In the United States, the food industry is estimated to spend around US\$11.26 billion on advertising, more than any other industry (McGinnis, Gootman, & Kraak, 2006), and evidence suggests that the food industry is increasing its advertising expenditure in developing countries. Figure 10.4 shows that expenditure by two leading US-based brands declined in the United States in the 1990s, but increased outside the United States; Table 10.9 shows that, while the Coca-Cola Company is not among the top ten largest spenders in the United States or Western European countries, it is in developing and transitional countries. In other words, spending is greatest where companies are attempting to significantly grow their “new” (or at least newer) markets.

Evidence from Western countries shows that a significant proportion of food advertising and promotion is targeted at children and youth, and much of it is for high-calorie, nutrient-poor foods (Hastings et al., 2003; McGinnis et al., 2006). Available studies from developing countries show the same pattern. A recent systematic review of the literature from developing countries revealed that there is a great deal of food promotion to children in countries for which data is available, particularly in the form of television advertising, and that advertising is typically for highly processed, energy-dense foods (Hastings et al., 2003). In Brazil, close to 60 percent of all food advertisements in 2002 were for foods high in fats and sweeteners (Sawaya et al., 2004). In Asia food makes up a significant proportion of advertising targeted at children, ranging from 25 percent in South Korea, to 40 to 50 percent in India, 50 to 75 percent in Pakistan and the Philippines, and 70 percent in Malaysia (Escalante de Cruz, Phillips, Visch, & Bulan Saunders, 2004).

As described in Box 10.4, companies use a wide range of techniques to deliberately encourage children and youth to adopt regular and frequent consumption of these products in developing countries (Hawkes, 2002). In

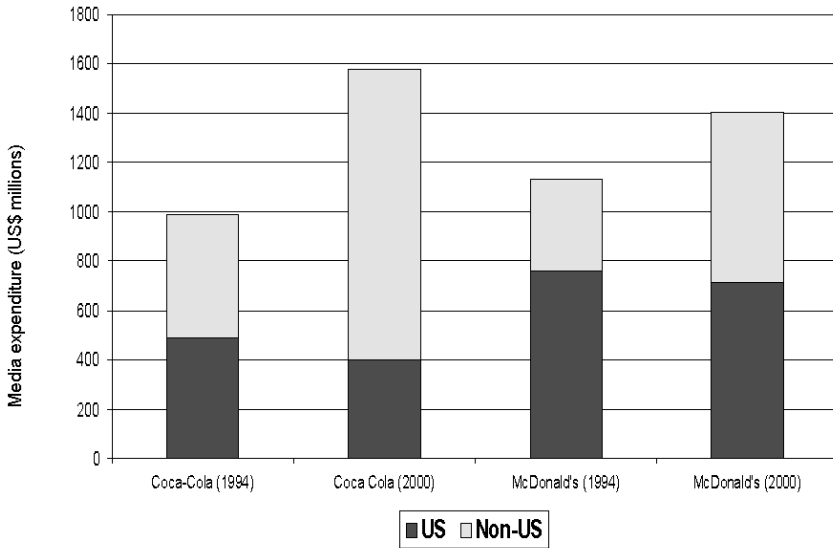


Figure 10.4 US/non-US media spending by the Coca-Cola Company and McDonald's, 1994–2000. Source: Hawkes, 2002. Reprinted with permission.

Table 10.9 Countries in Which the Coca-Cola Company was Among the Top 10 Media Spenders, 1997–2000

Country	Media Expenditure (US\$ million per year)	Country	Media Expenditure (US\$ million per year)
Mexico	68.8	Ukraine	3.8
Chile	54.5	Croatia	2.9
Colombia	41.2	Kazakhstan	2.7
Turkey	27.2	Indonesia	1.9
India	22.7	Vietnam	1.7
South Africa	21	Serbia	1.4
Venezuela	16.4	Lebanon	1.0
China	15.3	Kenya	0.9
Russia	13.5	Azerbaijan	0.8
Peru	12.6	Jordan	0.6
Hungary	11.7	Macedonia	0.5
Romania	5.1	Uganda	0.3
Slovakia	4.1	Bulgaria	0.3

Source: Hawkes, 2002. Reprinted with permission.

Latin America, for example, soft-drinks companies took steps in the late 1990s to “increase consumption in schools” by selling products in schools in “attractive combo” packages in Mexico and Colombia, and in Costa Rica “creat[ed] new points of sale in strategic areas of each institution.”

These strategies were said to boost sales to schoolchildren by 50 percent. In India, a leading soft-drinks company used celebrity advertising as a means of “making sure people are made to want to drink more of our drinks.” In China, the popularity of fast food with children was encouraged by the provision of facilities for birthday parties, play areas, and educational activities. This latter finding is supported by anthropological evidence from Asia that advertising and promotion are used to create a cultural identification with new, Western foods (Watson, 1997). In all of these developing markets, promotional activity is destined to grow given the expansion of media communications, the liberalization of rules on international advertising services, and the increasing number of children’s television channels.

Food Advertising and Promotion, and Changing Diets

There is clear evidence that food advertising and promotion affect food consumption patterns. Two major systematic reviews have now concluded that food advertising targeted at children and youth does influence food choices (Hastings et al., 2003; McGinnis et al., 2006). The review by Hastings et al. (2003) was updated in 2006 and came to the same conclusions (Hastings, McDermott, Angus, Stead, & Thomson, 2007). The implications from both reviews are clear: food promotion has a significant influence on children’s food behavior and diet *independent* of other factors. Although these studies focused on North America and Europe, a second review by Hastings et al. (2007) also found that children in developing countries recall, enjoy, and engage with food advertising.

The example of Thailand suggests that greater investment in advertising helps stimulate greater consumption of processed foods. The advertising and promotions industry in Thailand is among the most developed and dynamic in Asia: from 1987 to 1996, advertising expenditures grew nearly 800 percent and advertising revenues have grown at double-digit figures in recent years. Foreign ownership of advertising/marketing agencies is not restricted and, while advertising is regulated to some degree, campaigns are not subject to restrictions like maximum foreign content requirements. This relatively open market has encouraged TFCs to enter Thailand and to use the network of global marketing and communications agencies to develop highly sophisticated marketing campaigns using a wide variety of promotional techniques.

Evidence from a US-based company, Frito-Lay (a division of PepsiCo), shows that advertising does appear to increase sales, in this case, of snacks (Figure 10.5). When Frito-Lay first consolidated its presence in Thailand in 1999/2000, per capita snack consumption was still relatively low (1 kg per person per year in 1999 compared with 3 kg in Mexico and 10 kg in the United States). The company developed an aggressive strategy to increase consumption and more than doubled its promotional spending between 1999 and 2003. Frito-Lay’s share of the total snack market subsequently

Box 10.4 Strategies used by TFCs to encourage consumption of high-calorie, nutrient-poor foods among children worldwide.

TFCs use many different strategies to promote consumption of their products, which are often termed the “5 Ps” of marketing: price, package, product, promotions, and public relations.

PRICE AND PACKAGE: Processed-foods products are often priced out of the reach of the mass market. To expand their consumer base, TFCs use a joint price/package marketing strategy of selling smaller and cheaper drinks in newer/poorer/rural markets. To expand volume, they size up portions and packages in more affluent urban areas.

PRODUCT: TFCs adapt their products to provide products preferred by local people and develop menu items specifically to appeal to children and youth.

PROMOTION: To advertise their products, TFCs utilize a huge range of techniques including signage, television advertising, sales promotions, and Web sites.

- *Television advertisements* are designed to encourage consumers to emotionally bond with the product, via association with a special or magical moment, strong family values, fun and excitement, or local traditions. Commercials purvey glamour, and often feature young children, good-looking teens and young adults, celebrities, and animation.
- *Premium, prize, and discount sales promotions* target children and youth. Notable examples include free/discounted toys with meals, and gifts available to collectors of product packaging. In some countries, TFCs have set up kids' clubs enabling children to access more sales promotions.
- *Web sites* provide information about promotional campaigns and feature interactive promotions, games, and downloadable goods.

PUBLIC RELATIONS: Includes service-related marketing, TV and movie tie-ins, sports sponsorship, music, events, product sponsorship, educational competitions, and philanthropy.

- *Service-related marketing* by fast-food companies includes the provision of services to attract children (such as play areas and birthday parties) and teens (such as Internet access and computer games).
- *Sports sponsorship* is a major promotional vehicle for TFCs, ranging from the global scale (such as the World Cup and Olympic games) to the grassroots level (such as community sports training programs). The sports sponsored are those most popular in specific countries and those popular with youth.
- *Sponsorship of children's and youth television shows and movies.*
- *Sponsorship of music, events, and products* as a means of attracting teens, expanding product availability and signage, and identifying the brand with local culture. They also run a range of educational competitions, including environmental awareness campaigns and youth achievement awards.
- *Philanthropy* extends marketing by identifying the brand with good deeds and local concerns. TFCs operate on a large scale via foundations and links with international organizations, as well as at a local level, focusing on causes such as children, education, and health.

grew from the low single digits in the mid-1990s to 30 percent by 2003. More importantly from a dietary perspective, the entry of Frito-Lay into the market also had the effect of stimulating total snack sales. Snack sales grew particularly rapidly from 1999 to 2004, the period of most intensive

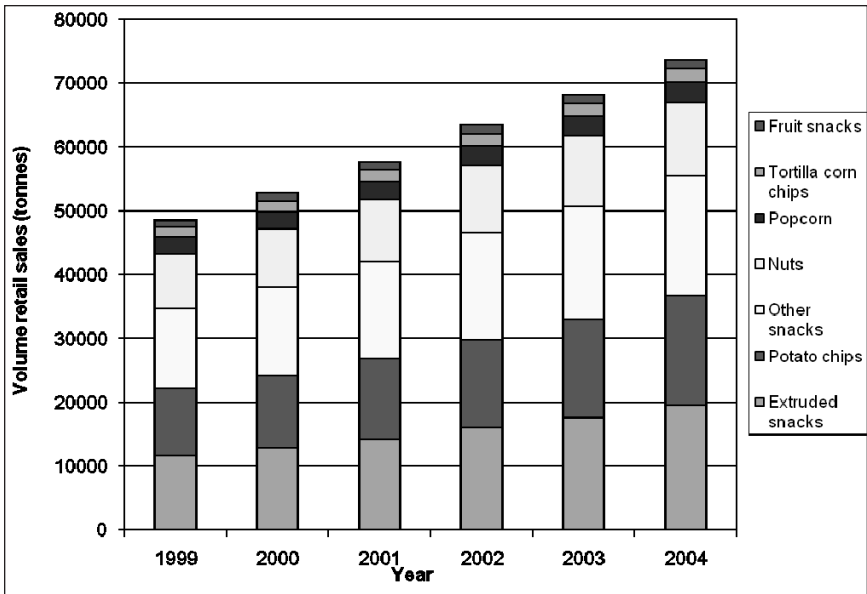


Figure 10.5 Retail sales of sweet and savory snacks in Thailand, 1999–2004. Source: Hawkes, 2006. Reprinted with permission.

marketing, and sales volumes of the most heavily promoted products (chips and extruded snacks) increased by the largest amount (Figure 10.5). This indicates—though does not prove—that advertising and promotion played an important role in encouraging sales and consumption of snacks.

CONCLUSION

Linking the nutritional transition directly with globalization is a difficult task. Changes in diet and nutritional outcomes can be caused by a number of phenomena within social systems that are linked to globalization such as urbanization, agrarian reform, social welfare policy, and changes in relative income. Here we have concentrated mainly upon changes in the food system linked with globalization and summarized the evidence of how this can plausibly be linked to changes in diet and nutritional outcomes especially with regards to overweight and obesity.

Globalization has been strongly associated with a significant increase in the concentration of corporate ownership across the whole food-supply chain from production, processing, supply, and retailing. This is occurring across all regions of the world albeit at different rates, with Latin America and large parts of Asia experiencing the most rapid changes. Overall there is convincing evidence that globalization has magnified key supply-side

drivers shaping diets. The growth of large TFCs, including supermarkets, along with increasing FDI is leading to dramatic increases in the supply, availability, advertising, and promotion of high-calorie, nutrient-poor foods (especially processed food) in middle-income countries. Although individual country case studies suggest that changes in the food supply have been very important in shaping diets, studies of individuals are too few to provide strong empirical evidence.

The pathways by which the recent changes in the food system are being experienced in different segments of the population, especially in low- and middle-income countries, are still relatively underresearched. But our review indicates that processes driving globalization exacerbate existing inequities. The diversifying nature of globalization processes has positive implications, but also raises the policy concern that these processes may encourage the uneven development of new dietary habits between rich and poor. As high-income groups in developing countries accrue the benefits of a more dynamic marketplace, lower-income groups may either continue to face inadequate access to food or to experience convergence towards poor-quality obesogenic diets, as has been observed in Western countries. People of low socioeconomic status (albeit not the poorest of the poor) are more likely to be influenced, over the long term, by the converging trends of the global marketplace, while the more affluent and educated move onto the more expensive, “healthy market” niches.

The specific impacts of globalization processes and policies also depend on other contextual factors, such as the terms of trade (ratio of the price of an export commodity to the price of an import commodity), the specifics of the trade agreement, the foodstuff, and the domestic policies and cultural traditions. Thus, the implications of globalization for the nutrition transition should always be examined in the context in which it is affecting people’s everyday lives.

NOTES

1. Measure of height-for-age, which reflects cumulative effects of inadequate nutrition.
2. Measure of weight-for-age, which is a composite of stunting and wasting (weight-for-height, reflecting severe and acute weight loss).
3. This relationship is particularly strong for women and is not always the case for men.
4. Hypothetical unit of currency that has the same purchasing power that the US dollar had in the United States at a given point in time.

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