Public Health Nutrition: 8(4), 357–365 DOI: 10.1079/PHN2004706

The role of foreign direct investment in the nutrition transition

Corinna Hawkes*
International Food Policy Research Institute, 2033 K Street NW, Washington, DC 20006, USA

Submitted 1 September 2004: Accepted 22 November 2004

Abstract

Objective: To examine the role of foreign direct investment (FDI) in the nutrition transition, focusing on highly processed foods.
Design: Data on FDI were identified from reports/databases and then compiled and analysed. A review of published literature on FDI into the food sector was conducted.
Setting: The nutrition transition is a public health concern owing to its connection with the rising burden of obesity and diet-related chronic diseases in developing countries. Global health leaders are calling for action to address the threat. Highly processed foods often have considerable fat, sugar and salt content, and warrant closer examination.
Results: FDI into food processing, service and retail has risen rapidly since the 1980s, mainly from transnational food companies (TFCs) in developed countries. As FDI has risen, so has the proportion invested in highly processed foods for sale in the host market. FDI has proved more effective than trade in generating sales of highly processed foods, and enables TFCs to cut costs, gain market power and obtain efficiencies in distribution and marketing. The amount of FDI targeted at developing countries is increasing; while a disproportionate share enters the larger developing economies, foreign affiliates of TFCs are among the largest companies in low- and low- to middle-income countries. The effect of FDI is to make more highly processed foods available to more people. FDI has made it possible to lower prices, open up new purchasing channels, optimise the effectiveness of marketing and advertising, and increase sales.
Conclusion: FDI has been a key mechanism in shaping the global market for highly processed foods. Notwithstanding the role of demand-side factors, it has played a role in the nutrition transition by enabling and promoting the consumption of these foods in developing countries. Empirical data on consumption patterns of highly processed foods in developing countries are critically needed, but since FDI is a long-term investment vehicle, it is reasonable to assume that availability and consumption of highly processed foods will continue to increase. FDI can, however, bring considerable benefits as well as risks. Through its position 'upstream', FDI would therefore be an appropriate entry-point to implement a range of public health policies to 'redirect' the nutrition transition.

Keywords
Nutrition transition
Foreign direct investment
Globalisation
Transnational food companies
Highly processed foods
Fast food
Food processing
Food price
Supermarkets
Food policy
Public health policy

The rising consumption of energy-dense, nutrient-poor foods high in fats, sugars and salt has become a source of global concern. In a trend known as the 'nutrition transition', populations of developing countries are now consuming diets closer to those of developed countries, with more animal products, vegetable oils, sweeteners and processed foods, and fewer whole grains[1,2]. The World Health Organization (WHO) has identified foods high in fats, sugars and salt as a risk for chronic diseases and called for concerted action to address the threat in its Global Strategy on Diet, Physical Activity and Health (2004)[3].

The increased consumption of these foods in developing countries is in part driven by shifts in demand-side factors, such as increased incomes and reduced time to prepare food in an increasingly urbanised world[4,5]. But supply-side determinants are also at work. Promotional marketing of processed foods by transnational food companies (TFCs) and the growing availability of fast foods[6] have been identified – by public health professionals, nutritionists, the media and activists – as possible culprits. Yet the less visible, structural dynamics underlying the wider availability of these foods have only just begun to be examined from a public health perspective[4,7,8]. Trade, consolidation in the food system and the changing nature of food production are examples of such 'upstream' dynamics. Another is foreign direct investment (FDI), which has thus far been overlooked as a driver of the nutrition transition. It is well known that FDI (along with trade, communication and migration, etc.) has been a key process generating greater global economic

*Corresponding author: Email c.hawkes@cgiar.org

integration ('globalisation'). In the public health arena, it has been recognised that FDI influences tobacco consumption[9]. But minimal attention has been paid to the key role played by FDI in shaping the global market for a specific group of foods associated with the nutrition transition: highly processed foods*.

FDI is an investment by an enterprise from one country into an entity or affiliate in another, in which the parent firm owns a substantial but not necessarily majority interest[10]. It can take place through direct entry or investment in existing firms. The foreign enterprise becomes a foreign affiliate of a parent company, thus creating or joining a transnational corporation (TNC). FDI is one of the mechanisms through which TNCs enter new markets, and reflects an intention to remain invested over the long term.

FDI into food processing, service and retail has become particularly significant since the mid-1980s, enabling many of the recent developments in the production, distribution and, subsequently, consumption of highly processed foods. FDI is the financial mechanism by which developed nations, many of whom have stated their commitment to combating the ill-effects of poor diets at home, spread some of the products associated with those poor diets to developing countries. Being a long-term investment vehicle, FDI also indicates where TFCs intend to be in the future, and what products they intend to produce, sell and promote.

FDI is thus a process worthy of greater attention from the perspective of diet and nutrition. An awareness of FDI will improve the understanding of one of the long-term financial drivers behind the changing food supply in developing countries, and help identify key entry-points in the food system appropriate for policy intervention.

The objective of the present paper is to highlight and examine the role of FDI as an upstream driver of the nutrition transition. It starts by presenting the data on FDI into food processing, service and retail in developing countries. It then describes why TFCs invest in highly processed foods, and examines the consequences of FDI, drawing implications for public health nutrition and policy.

FDI in food processing, service and retail

Since the 1980s, FDI has been an unprecedented source of funding and stimulus to economic development in developing nations. It is in fact the largest source of external financing for developing countries. Between 1990 and 2000, FDI into developing countries grew more than six-fold, faster than gross domestic product or trade[11]. Despite recent downturns, US$162.1 billion of FDI flowed into developing countries in 2002, mainly from TNCs in developed countries[12]. In order to harness the capital, skills, technology and goods and services promised (though not always realised) by FDI, developing country governments have liberalised investment rules and introduced incentives[11,13]. TNCs, meanwhile, have gained from new and emerging markets for their products and lower production costs.

Foreign assets and sales by TFCs

Food companies†, based mainly (but not exclusively) in Western Europe and the USA, have a significant international investment presence. In 2001, 12 TFCs were among the top 100 holders of foreign assets globally, double the number of 1990 (Appendix)[12,14]. The foreign assets of these companies amounted to US$257.7 billion in 2002, an increase from US$34.0 billion in 1990 (Fig. 1, Appendix). In the same period, foreign sales increased from US$88.8 to US$234.1 billion.

Although a high proportion of foreign assets and sales are in developed countries, the amount of assets in developing countries is increasing. Middle-income countries are attracting a particularly large share. In 2001, eight of the top 40 TNCs by sales in Latin America and the Caribbean were food companies[15]. Foreign affiliates of TFCs are often also among the largest companies in low- as well as middle-income countries (Table 1)[16].

Investment in processed foods

Globally, food processing is the most important recipient of FDI relative to other parts of the food system, including the farm sector. Data from the USA illustrate the dramatic growth of FDI into food processing over the past 25 years. US FDI into foreign food processing companies grew from US$9 billion in 1980 to US$36 billion in 2000, with sales increasing from US$39.2 in 1982 to US$150 billion in 2000[10]. FDI into food processing has proved far more effective at generating overseas sales than US exports of processed foods, which generated US$30 billion in sales in 2000[10,17]. Trade in processed foods does, however, remain dynamic[18]. Between 1976 and 2002, gains in US agricultural exports were led by processed agricultural

*Highly processed foods refer to foods that have undergone secondary processing into a readily edible form. They are likely to contain added sugars, hydrogenated fats (*trans*-fatty acids) and/or salt, and include soft drinks, snacks, baked goods, frozen and dairy desserts, breakfast cereals, fast foods, ready meals, dressings and sauces. They are sometimes termed 'high-value' foods because of the amount of inputs required for their transformation. They stand in contrast to primary processed foods such as sugar and vegetable oils.

†'Food company' refers to companies that are involved in processing, service or sale of highly processed food. It includes diversified companies that manufacture, serve or sell products other than food, such as personal care products and tobacco. It excludes companies concerned solely with agricultural production, processing or research.

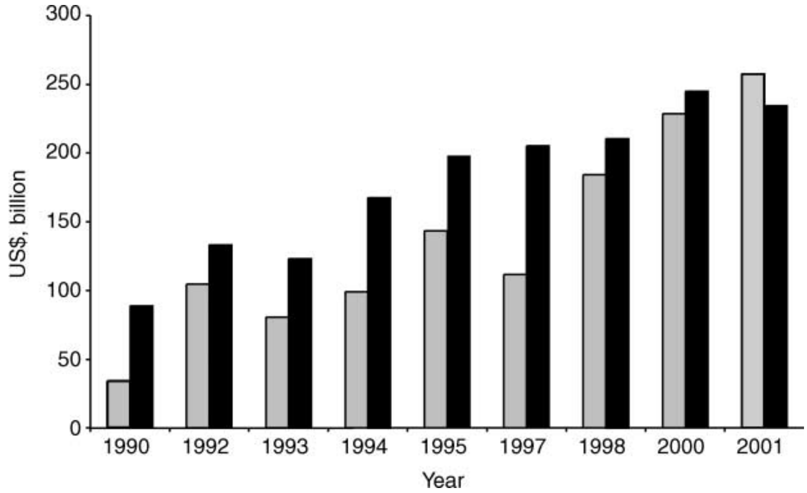

Fig. 1 Foreign assets (grey bars) and sales (black bars) (US$ billion) by companies in the top 100 transnational corporations by foreign assets, concerned with the manufacture, service or sale of food products, 1990–2001. *Note:* data are listed by company in the Appendix; data for foreign assets for specific companies are missing for 1990, 1993, 1994, 1997 and 1998 (see Appendix). *Source:* Compiled from United Nations Conference on Trade and Development (UNCTAD) (2003)[12] and UNCTAD (2004)[14]

goods, and of these, exports of highly processed foods grew the most[19].

It is significant that as FDI has risen, the allocation of investment has shifted towards highly processed foods for sale in the host market and away from products for export to the home market and products produced by primary processing (although they may remain important in certain cases)[20,21]. In 1998, 74% of the sales of affiliates of US food companies remained in the host market[10]. The tendency to allocate investment into highly processed foods is illustrated by the economies of Central and Eastern Europe and the Baltic states, which attracted soaring rates of FDI in the food sector in the 1990s[22,23]. Investment has concentrated on soft drinks and confectionery. The confectionery sector in Poland, for example, 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

Table 1 Examples of low- and middle-income countries in which food companies are amongst the three largest foreign affiliates in the industrial or tertiary sector

Country	Sector (rank 1–3 by sales)	Company name (source country)	Sales (US$, millions)
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 (The Netherlands)	28.6
Zimbabwe	Food, meat (1)	CSC Meat Importers (UK)	25.0
Asia and 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 SRL (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)	Standart 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 México (USA)	9607.0

Note: Data are taken from 1999, 2000, 2001 or 2002.
Source: United Nations Conference on Trade and Development (2004)[16].

together[24]. On a global scale, this trend has led to the dominance of foreign investors in the highly processed food sector. In China, for example, there are numerous nationally and locally based food companies, some of which have successfully out-competed foreign companies. But in packaged foods, such as instant noodles, soft drinks, snacks, sweet biscuits and fast foods, foreign investors dominate[25].

A high proportion of FDI into food processing from the USA still targets developed countries, notably Canada and the United Kingdom. But many developing countries are attracting an increasing share, particularly those in Latin America, Asia, and also Central and Eastern Europe (the trends with respect to Africa and the Middle East are more variable)[10,17,26]. Mexico, for example, attracted US$5 billion of FDI in food processing from the USA in 1998, a 25-fold increase from US$210 million in 1987[27]. Mexico was then the third largest recipient of US FDI in food processing, but in 2000 became a larger recipient of FDI into food products than Canada[17]. Reflecting the trend towards FDI in more highly processed foods, around three-quarters of the FDI in Mexico is in products like soft drinks, snacks and mayonnaise.

Investment in food service and retailing

FDI into food retail and service increased rapidly in the second half of the 1990s. Supermarkets based in Europe and the USA are placing huge investments into Africa, Asia, Central and Eastern Europe and Latin America[28–31]. In 2004, the top 10 FDI destinations by global supermarket chains included Russia, India, China, Latvia, Vietnam, Slovakia and Thailand[29]. Between 1994 and 1998, retail giants from France, The Netherlands and the USA entered the top 100 largest holders of foreign assets globally (Appendix). FDI from US-based supermarket chains grew to nearly US$13 billion in 1999, up from around US$4 billion in 1990[10]. Food service restaurants show a similar trend. In 1998, nine companies in the USA (with 117 foreign affiliates) invested US$5.7 billion in eating and drinking places overseas[32].

In total, this suggests that of the order of US$55 billion a year was invested by American companies in foreign food processing, service and retail in the late 1990s/early 2000s.

Why do TFCs place FDI into highly processed foods?

TFCs have invested overseas to gain from the potentially high returns from the emerging buying power of growing populations. Many developing countries – especially large ones – have far higher growth potential than the more mature markets of developed nations[33]. As the economies of many developing nations have grown, so has the confidence needed for long-term investments such as FDI[20]. Another strong force for investment by TFCs has been the liberalisation of FDI under the General Agreement on Tariffs and Trade (GATT) and other trade agreements[29,34,35]. The combination of these changes has encouraged and enabled FDI into food processing, service and retail over the past 25 years.

Highly processed foods also have a series of characteristics that make them specifically appropriate for FDI. Likewise, FDI has a series of characteristics that make it an attractive strategy for TFCs. First, relative to trade, FDI can be a highly cost-effective way for TFCs to reach foreign markets[10]. Exporting highly processed foods can incur high transport and storage costs relative to the value of the product – costs which are significantly reduced by direct investment[10,24,36]. These foods can thus be produced in the host country for less than the delivered costs of exports, particularly when the host country has the raw materials available for production[20]. For example, sugar is less expensive in Mexico than the USA, making it an advantageous place to invest in the production of confectionery and bakery products[10]. Moreover, setting up manufacturing plants in other countries is facilitated by the easily replicable nature of the production process[36].

An ability to 'jump' trade barriers is a second attraction of FDI[10]. This has been important in the past. Nestlé, for example, circumvented the series of comprehensive tariff and quota restrictions imposed by Southeast Asian countries after 1945 by investing directly in manufacturing plants in the region[34]. Today, trade barriers tend not to be a primary driver of investment decisions, but in some cases TFCs do invest directly because high tariffs make trade a costly option[33].

Third, FDI can optimise the effectiveness of branding and promotional marketing. Global advertising has created global brand recognition for many highly processed foods, such as Coca-Cola and McDonald's. Investing in many national markets thus allows these companies to benefit from economies of scale in marketing and advertising[24]. On entering the country, the brand alone is enough to attract market share[6]. Buying up well-known local brands also confers advantages, since the brand is already known in the national/regional market and has an existing customer base.

In a fourth and related advantage, FDI may catapult the company into the position of market leader. Early foreign investors in food processing in developing countries tend to favour highly concentrated industries (i.e. with only one or two market leaders), such as soft drinks and confectionery[23,37]. The acquisition of leading firms is an attractive investment proposition and a means of minimising local competition. In the retail sector, FDI into supermarkets has led to a strikingly rapid increase of market power[28,31].

Fifth, an FDI sales strategy facilitates the ability of TFCs to tailor the entire production, marketing and distribution process to local tastes and conditions. FDI provides access to the 'intangible assets'[26] possessed by local companies, such as staff with knowledge of local market conditions and preferences, and an already established distribution network. A local presence also makes it easier to form relationships with local players, such as suppliers and other TFCs[38].

Consequences of FDI into highly processed foods in developing countries

FDI is a key mechanism shaping the market for highly processed foods in developing countries. FDI makes more processed foods more available to more people. It enables lower prices and opens up new purchasing channels. It also has repercussions for the food supply chain. As a consequence, FDI drives sales and consumption of highly processed foods.

FDI and the food supply chain

FDI has inter-related repercussions with other parts of the food system, notably the supply chain[22], including trade. This is illustrated by the food retail and service industries. As discussed extensively elsewhere[28–31], the greater supermarket power enabled by FDI has impacted significantly on agricultural supply chains in developing countries since supermarkets demand much larger-scale procurement compared with small retailers. Supermarkets have also stimulated foreign affiliates of transnational food processors to change their distribution systems, originally developed to supply small retail outlets[34].

The relationship between FDI and trade in processed foods is often complex: there is a debate on whether FDI substitutes for trade or complements it[17,20]. Traditionally, FDI was thought to substitute for exports, but more recent analysis suggests that FDI and trade in processed food products tend to be mutually reinforcing[10,17,33]. This is exemplified by FDI in the fast-food sector. FDI in food service has stimulated the growth of fast-food restaurants, leading to huge growth in consumption of French fries world-wide. In an inter-related shift, trade in frozen potato products has expanded[39], with the amount imported associated with the degree of FDI in the fast-food sector[40]. And hand-in-hand with increased trade has been increased FDI in French fries processing plants, which provide fries for the host market and intra-regional trade[39]. The McDonald's Corporation, for example, has invested in processing plants in Argentina, producing fries to supply McDonald's restaurants in all the Mercosur countries[41]. This has subsequently affected the local food supply chain: the TFC-affiliated processors have introduced written contracts for local potato farmers, which favour larger commercial suppliers over small farmers[42].

FDI and local competition

FDI has in some cases led to the near total dominance of foreign TFCs in specific sectors. In others, the entry of TFCs has stimulated the development local competitors. In China, for example, 'foreign direct investors... set new quality standards, illustrated marketing innovations, introduced new products and technology, introduced new management concepts... Local companies learned and mastered these gradually. Although many local food companies lost in the competition, some arose from ashes and became threatening rivals to foreign brands'[25] (p. 441). In several countries, competitors with US-based fast-food chains have also been highly successful[6]. The effect has been to strengthen the processed foods sector as a whole.

FDI and marketing of highly processed foods

The entrance of TFCs into emerging markets has been accompanied by a tremendous increase of marketing muscle. As already noted, FDI enables global brands to take advantage of economies of scale in marketing. Aiming to create demand, the marketing techniques employed by TFCs tend to be aggressive, comprehensive, and targeted at young people[6].

FDI and prices of highly processed foods

In developing countries, many processed foods are high-value items targeted at higher-income consumers. This remains the case in many countries, although it varies between products. At the same time, evidence now suggests that TFCs eventually lower prices in order to expand their market base and out-compete other companies[25]. Major foreign investors in soft drinks and fast food have developed sophisticated strategies to lower prices and increase affordability in many developing countries, which has had the intended effect of broadening the customer base[6]. In Brazil, the price of processed foods fell 30% between 1994 and 1997, driven by new investments and entries in the food market, the growing market power of supermarket chains, competition with local food companies and imports of processed foods[41]. The presence of local competitors can have a significant effect on price. In China, Unilever dramatically cut ice cream prices to compete with local brands[25]. Evidence from Latin America also suggests that supermarkets are now moving beyond their original 'niche' in upper-income neighbourhoods, into middle-class neighbourhoods and, in the late 1990s, into lower-income communities[30].

FDI and purchasing channels

FDI in supermarkets has opened up new sales channels for highly processed foods. Supermarkets are well placed to sell processed foods at lower cost due to economies of scale in procurement[28]. The growing use of refrigerators and cars in many developing countries facilitates weekly shopping for processed foods[38]. In Latin America, supermarket share of all food retail grew from around 10–20% in 1990 to 50–60% in 2000[30]. In Brazil, over 70% of all food consumption expenditures are now in supermarkets[41]. In Central and Eastern Europe, foreign supermarkets sold about US$15 billion worth of food products in 2002[31].

FDI has also propelled the spread of restaurant chains. The top 10 American chains had 40 178 foreign units in 1999[32], and the number of transactions at fast-food chains rose dramatically in many developing countries in the 1990s[6]. While expenditures on meals outside the home still tend to be higher in developed countries, evidence indicates that developing countries may be following the trend. In Argentina, for example, 18% of all food expenditures were spent on meals eaten outside the home in 1996, an increase from 8% in 1970[42].

The penultimate consequence: FDI and sales of highly processed foods

Processed food sales in developing countries are lower than in developed countries (one quarter or less of all food expenditures, compared with almost half)[38]. And sales of primary processed foods (e.g. fats and oils) relative to highly processed foods are greater. Yet wider availability, lower prices and new purchasing channels are driving rapid growth. Annual sales growth of all processed foods is around 29% in low- to middle-income countries compared with 7% in upper- to middle-income countries[38]. And the market for highly processed foods is expanding fast. In Brazil, growth in real volume sales of hamburgers, biscuits, ready-to-eat desserts, yoghurts and flavoured milk amounted to an average 27% between 1993 and 1997, compared with 5% for vegetable oils, margarines, beef, poultry and pork meat[41]. 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 drinks sales are growing rapidly in Eastern Europe, Asia and Latin America[6].

Future sales growth for TFCs 'lies in developing countries'[38]. According to Gehlhar[38]: 'Studies indicate that as income levels rise, consumers in developing countries spend a larger share of the additional income on food compared with consumers in high-income countries with similar increases in income levels. The additional expenditure on food by consumers in developing countries often translates to diet diversification and increased expenditures on high-value food products, such as retail packaged foods' (p. 42). 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%, respectively. Korea, Thailand, India and the Philippines rank among the top 10 growing markets, with total packaged food retail sales expected to grow by 5–7% annually.

The ultimate consequence for public health: FDI and the nutrition transition

The precise effect of FDI on diets in developing countries remains speculative. But it is clear that FDI has played a role in the nutrition transition by increasing the amount of highly processed foods in the global diet. Food service chains such as McDonald's, products such as French fries and soft drinks, and now retailers such as Carrefour are becoming more entrenched in eating cultures[43]. FDI is, therefore, affecting what people eat.

Less clear is exactly how increased consumption of highly processed foods has affected diet and nutrition as a whole. What is known is that the nutrition transition has been characterised by enormous increases in the consumption of edible oils and caloric sweeteners[44,45]. Since highly processed foods are often high in fats and sugars, it is likely that they have contributed to these trends. Beyond this, more empirical information on patterns of highly processed food consumption in developing countries is critically needed. Key unknowns include:

- How significant are highly processed foods relative to other foods in contributing to excessive consumption of energy, fats, sugar or salt?
- What foods do highly processed foods tend to displace in people's diets, or do they simply tend to add to them?
- Do highly processed foods have some positive impacts by diversifying diets, or do they tend to add to them?
- What role do highly processed foods play in the diets of the poor?
- What are the relationships between the consumption of highly processed foods and income, age, gender, employment, dwelling place (urban or rural) and education?
- How does the increased consumption of highly processed foods affect the culture of food consumption in developing nations?

Answers are needed to improve our understanding of the impact of highly processed foods on public health nutrition. It would also be useful to develop an econometric model to examine the effect of FDI by TFCs on diets (following similar analysis conducted for tobacco[46]). Such information could assist policy-makers in developing solutions to the less healthy aspects of the nutrition transition.

Implications (and dilemmas) for public health nutrition policy

Policies commonly proposed to address the negative sides of the nutrition transition tend to focus largely on lifestyle factors and dietary guidelines. Entering the food system more 'upstream' is a more public health-oriented approach[47]. As shown here, FDI underlies many of the 'upstream' inter-related dynamics in the supply, distribution, marketing and sale of highly processed foods. Thus 'following the money' would enable a more integrated response to this aspect of the nutrition transition.

But how could FDI be targeted by policy interventions to 'redirect' the nutrition transition towards better health?[4]

There are several potential approaches. One, and perhaps the most intuitive from a public health perspective, would be to take a regulatory approach and impose health-oriented conditionalities on FDI by TFCs. A country could develop an integrated package of provisions that the TFCs must meet, notably with regard to fiscal matters, but also on issues such as promotional marketing and the provision of information. These policy options (and others) are contained in the WHO Global Strategy on Diet, Physical Activity and Health[3], and many countries have the structures in place to implement them[48,49]. Through its position upstream, FDI would be a single entry-point to implement a multiple range of public health policies.

The challenge of this approach is that regulating FDI by TFCs, and the foods that they produce, will likely affect the decision by a TFC to invest in a country[50] – and may well discourage investment. This is problematic because, as a major source of external financing, governments are actively seeking more FDI, not less[4]. Diet-related conditionalities on FDI would simply add to the range of demands for 'corporate social responsibility'. It is a particular problem for poorer countries usually overlooked by major foreign investors. The recent investment made by the Coca-Cola Corporation in Somalia is a case in point: in August 2004 the company made the largest single investment in the country since the government collapsed over a decade ago[51]. Although nutritionists may question the value of the product, it is the type of investment that signals the business confidence that many poor countries are desperate to build.

A second option, therefore, would be to look directly to TFCs for a voluntary solution. An intuitive alternative to the regulatory option would be to encourage TFCs to invest in healthier products – less salty snacks and baked goods and more low-fat products and nutrient-rich foods. It is noteworthy that low-fat products are growing well in large markets such as Brazil[41], but the disadvantage of this approach is that categorising such foods as 'healthy' individualises the benefits. A better approach would be to reduce the content of fats, sugars and salt in highly processed foods across the board, as TFCs are beginning to do in developed countries.

These two different approaches reflect one of the fundamental tensions in policy development today: the balance between the role of nation states and TNCs. The first option outlined here assumes that the TFC is subservient to the power of the state; the latter that the state must cede to the power of the TFC. In food policy, the balance of forces is skewed, with TFCs possessing more power and information than the states that they seek to enter[52]. Should, then, nation states cede responsibility for diet to TFCs on the basis that they are able to cater to consumer demand for highly processed foods? Or should governments recognise the influential role of supply-side drivers and regulate them? And if governments play a stronger role, how should they trade the risks (for public health) against the opportunities (of investment) from FDI?

This tension is not new. The trade-off between the opportunities and risks of FDI has been much debated in the past[12,13,53–55]. The challenge for regulators of any type of FDI is how to remove obstacles without unfairly favouring foreign investors[11]. The experience of sustainable development is particularly relevant here: like the nutrition transition, modern environmental problems are associated with more economic growth, not less. In the environmental arena, it has been shown that FDI is more beneficial and less detrimental when based within a long-term, integrated policy framework that takes a precautionary approach and draws on international co-operation[56].

The same applies to diet. Despite some of the unknowns about the role of highly processed foods in the nutrition transition, the importance of good nutrition for good development warrants a precautionary approach. Taking a long-term view is particularly relevant in the light of the long-term intentions of FDI and the likelihood that investment will continue into the future. A policy framework for FDI in the food supply chain is thus needed that incorporates regulatory, voluntary and market mechanisms to balance the costs and benefits of FDI between industry, economies and nutrition. Such a framework would be facilitated by an advantage possessed by TFCs – their ability to adapt to regulatory and policy frameworks[53]. Addressing dietary shifts upstream at the point of financing could create an enabling environment for the development of new business models by TFCs, while providing governments with leverage to address public health nutritional needs. It would help replace the prevailing attitude of 'grow now and promote good diets later' to 'grow good economies with good diets'.

Acknowledgements

The early part of the research conducted for this paper was carried out while the author was employed at the World Health Organization. The author would like to gratefully acknowledge the contributions made to the research by Dr Derek Yach.

References

1 Popkin BM. The nutrition transition and its health implications in lower income countries. *Public Health Nutrition* 1998; **1**: 5–21.
2 Popkin BM. An overview of the nutrition transition and its health implications: The Bellagio Meeting. *Public Health Nutrition* 2002; **5**(1A): 93–103.
3 World Health Organization. *Global Strategy on Diet, Physical Activity and Health*, May 2004. Available at http://www.who.int/dietphysicalactivity/strategy/eb11344/en/
4 Haddad L. Redirecting the nutrition transition: what can food policy do? *Development Policy Review* 2003; **21**: 599–614.

5 Ruel MT, Haddad L, Garrett JL. Some urban facts of life: implications for research and policy. *World Development* 1999; **27**: 1917–38.
6 Hawkes C. Marketing activities of global soft drink and fast food companies in emerging markets: a review. In: *Globalization, Diets and Noncommunicable Diseases*. Geneva: World Health Organization, 2002. Available at http://whqlibdoc.who.int/publications/9241590416.pdf
7 Chopra M, Darnton-Hill I. Tobacco and obesity epidemics: not so different after all? *British Medical Journal* 2004; **328**: 1558–60.
8 United Nations Standing Committee on Nutrition (UN SCN). *5th Report on the World Nutrition Situation: Nutrition for Improved Development Outcomes*. Geneva: UN SCN, 2004.
9 Gilmore AB, McKee M. Tobacco and transition: an overview of industry investments, impact and influence in the former Soviet Union. *Tobacco Control* 2004; **13**: 136–42.
10 Bolling C, Somwaru A. US food companies access foreign markets through direct investment. *Food Review* 2001; **24**: 23–8.
11 Mody A. Is FDI integrating the world economy? *The World Economy* 2004; **27**: 1195–222.
12 United Nations Conference on Trade and Development (UNCTAD). *World Investment Report 2003. FDI Policies for Development: National and International Perspectives*. Geneva: UNCTAD, 2003.
13 Organization for Economic Cooperation and Development (OECD). *Foreign Direct Investment, Development and Corporate Responsibility*. Paris: OECD, 2000.
14 United Nations Conference on Trade and Development (UNCTAD). *Largest Transnational Corporations*, 2004. Available at http://www.unctad.org/Templates/Page.asp?intItemID=2443&lang=1
15 United Nations Economic Commission for Latin America & the Caribbean (UN ECLAC). *Foreign Investment in Latin America and the Caribbean*. Chile: UN ECLAC, 2003.
16 United Nations Conference on Trade and Development (UNCTAD). *World Investment Directory*, 2004. Available at http://www.unctad.org/Templates/Page.asp?intItemID=3204&lang=1
17 Mattson J, Koo WW. *US Processed Food Exports and Foreign Direct Investment in the Western Hemisphere*. Fargo, ND: North Dakota State University, 2002.
18 Tullao TS. The impact of economic globalization on NCDs: opportunities and threats. In: *Globalization, Diets and Noncommunicable Diseases*. Geneva: World Health Organization, 2002. Available at http://whqlibdoc.who.int/publications/9241590416.pdf.
19 Whitton C. *Processed Agricultural Exports Led Gains in US Agricultural Exports Between 1976 and 2002*. Electronic Output Report FAU-85-01. Washington, DC: Economic Research Service, United States Department of Agriculture, 2004.
20 Bolling C, Neff S, Handy C. *US Foreign Direct Investment in the Western Hemisphere Processed Food Industry*. Washington, DC: United States Department of Agriculture, 1998.
21 Bolling C. Appendix 4: Foreign direct investment in the global processed food industries. In: Burfisher ME, Jones EA, eds. *Regional Trade Agreements and US Agriculture*. Washington, DC: United States Department of Agriculture, 1998.
22 Gow HR, Swinnen JFM. Impact of foreign direct investment on agriculture and agro-industry in transition economies. In: Csaki C, Lerman Z, eds. *Structural Change in the Farming Sectors in Central and Eastern Europe*. World Bank Technical Paper No. 465. Washington DC: World Bank, 2000.
23 Jansik C. *Foreign Direct Investment in the Food Processing of the Baltic Countries*. Economic Research Report 250. Helsinki: Taloustukimus (MTTL), 2001.
24 Walkenhorst P. The geography of foreign direct investment in Poland's food industry. *Journal of Agricultural Economics* 2001; **52**: 71–86.
25 Wei A, Cacho J. Competition among foreign and Chinese agro-food enterprises in the process of globalization. *International Food and Agribusiness Management Review* 2001; **2**: 437–51.
26 Yenal NZ. Food TNCs, intellectual property investments and Post-Fordist food consumption: the case of Unilever and Nestlé in Turkey. *International Journal of the Sociology of Agriculture and Food* 1999; **8**: 21–34.
27 Bolling C, Elizalde JC, Handy C. US firms invest in Mexico's processed food industry. *Food Review* 1999; **22**: 26–30.
28 Reardon T, Timmer CP, Barrett CB, Berdegué J. The rise of supermarkets in Africa, Asia, and Latin America. *American Journal of Agricultural Economics* 2003; **85**: 1140–6.
29 Reardon T, Swinnen JFM. Agrifood sector liberalisation and the rise of supermarkets in former state-controlled economies: a comparative overview. *Development Policy Review* 2004; **22**: 515–23.
30 Reardon T, Berdegué JA. The rapid rise of supermarkets in Latin America: challenges and opportunities for development. *Development Policy Review* 2002; **20**: 371–88.
31 Dries L, Reardon T, Swinnen JFM. The rapid rise of supermarkets in Central and Eastern Europe: implications for the agrifood sector and rural development. *Development Policy Review* 2004; **22**: 525–56.
32 Harris JM, Kaufman PR, Martinez SW, Price C. *The US Food Marketing System, 2002*. Agricultural Economic Report No. 811. Washington, DC: United States Department of Agriculture, 2002.
33 US International Trade Commission. *Processed Foods and Beverages: A Description of Tariff and Non-Tariff Barriers for Major Products and their Impact on Trade: Vol. 1*. Washington, DC: US Trade Commission, 2001.
34 Pritchard B, Fagan R. Circuits of capital and transnational corporate spatial behaviour: Nestlé in Southeast Asia. *International Journal of Sociology of Food and Agriculture* 1999; **8**: 3–20.
35 Chavez M. The transformation of Mexican retailing with NAFTA. *Development Policy Review* 2002; **20**: 503–13.
36 Bolling C. Globalization of the soft drink industry. *Agricultural Outlook* 2002; **297**: 25–7.
37 Jansik C. The path of Baltic food industries towards the EU. *Economic Trends (Finland)* 2003; **2**: 30–3.
38 Gehlhar M. Shaping the global market for high-value foods. *Agricultural Outlook* 2002; **297**: 38–42.
39 Plummer C, Makki S. French fries driving globalization of frozen potato industry. *Agricultural Outlook* 2002; **295**: 8–11.
40 Lanclos DK, Devadoss S, Guenthner J. Impacts of foreign direct investment and advertising on the export demand for US frozen potatoes. *Agribusiness* 1997; **13**: 273–84.
41 Farina EMMQ. Challenges for Brazil's food industry in the context of globalization and Mercosur consolidation. *International Food and Agribusiness Management Review* 2001; **2**: 315–30.
42 Ghezán D, Mateos M, Viteri L. Impact of supermarkets and fast-food chains on horticulture supply chains in Argentina. *Development Policy Review* 2002; **20**: 389–408.
43 Watson JL, ed. *Golden Arches East: McDonald's in East Asia*. Stanford, CA: Stanford University Press, 1997.
44 Drewnowski A, Popkin BM. The nutrition transition: new trends in the global diet. *Nutrition Reviews* 1997; **55**: 31–43.
45 Popkin BM, Nielsen SJ. The sweetening of the world's diet. *Obesity Research* 2003; **11**: 1325–32.
46 Bettcher D, Subramaniam C, Guidon E, Perucic A-M, Soll L, Grabman G. *Confronting the Tobacco Epidemic in an Era of*

Trade Liberalization. Geneva: World Health Organization, 2003.
47 Caraher M, Coveney J. Public health nutrition and food policy. *Public Health Nutrition* 2004; **7**: 591–8.
48 Hawkes C. *The Global Regulatory Environment around Marketing Food to Children*. Geneva: World Health Organization, 2004.
49 Hawkes C. *The Global Regulatory Environment around Nutrition Labels and Health Claims*. Geneva: World Health Organization, 2004.
50 Hooker NH, Caswell JA. Trends in food quality regulation: implications for processed food trade and foreign direct investment. *Agribusiness* 1996; **12**: 411–9.
51 BBC News. *Coca-Cola makes Somalia return*. Available at http://news.bbc.co.uk/2/hi/africa/3865595.stm
52 Lang T, Heasman M. Diet and nutrition policy: a clash of ideas or investment? *Development* 2004; **47**: 64–74.
53 United Nations Conference on Trade and Development (UNCTAD). *World Investment Report 1999. Foreign Direct Investment and the Challenge of Developments*. Geneva: UNCTAD, 2003.
54 South Centre. *Foreign Direct Investment, Development and the New Global Economic Order*. Geneva: South Centre, 2000.
55 Doane D, Greenhill R, Oram J, Pettifor A, Simms A. *Chasing Shadows: Re-imagining Finance for Development*. London: New Economics Foundations, 2002.
56 Organization for Economic Cooperation and Development (OECD). *Policies to Enhance Sustainable Development*. Paris: OECD, 2001.

Appendix – Foreign assets and sales (US$ billion) of companies in the top 100 transnational corporations by foreign assets, concerned with the manufacture, service or sale of food products, 1990–2001

	Year								
Company	1990	1992	1993	1994	1995	1997	1998	2000	2001
Foreign assets									
Nestlé	–	28.7	24.8	25.4	33.2	31.6	35.6	35.3	33.1
Unilever	–	19.4	18.0	22.0	25.8	25.6	32.9	20.4	30.5
Philip Morris	12.5	13.8	15.6	18.0	19.5	19.4		7.4	19.3
Grand Metropolitan	10.4	13.0	7.5	–	9.5				
Procter & Gamble	6.5	10.2	–	9.6	12.1	10.0	10.0	16.9	17.3
McDonald's	4.6	5.3	5.7	–	8.2	10.0	12.0	12.5	12.8
Pepsico		9.0	–	7.6	7.7				
Sara Lee Corporation		5.3	4.9	5.8					
RJR Nabisco			4.0	4.9	5.8		–		
Carrefour				5.8	7.2		10.3	17.1	29.3
Coca-Cola Company					7.5		14.9	16.6	17.1
Danone Group SA					6.7	7.5	10.3	10.9	11.4
Diageo Plc						–	27.9	25.9	19.7
Royal Ahold NV						7.4	–	14.8	
Wal-Mart Stores							30.2		26.3
Hutchinson Whampoa								41.9	40.9
Cadbury-Schweppes								8.8	
Total foreign assets	34.0	104.7	80.5	99.1	143.2	111.5	184.1	228.5	257.7
Foreign sales									
Nestlé	35.8	37.7	38.4	47.3	47.8	47.6	51.2	48.9	34.7
Unilever	16.7	35.0	16.1	39.1	42.7	44.8	39.4	26.1	28.7
Philip Morris	10.5	20.0	22.5	24.2	27.7	32.1		32.5	33.9
Grand Metropolitan	9.7	11.2	10.1	4.7	11.4				
Procter & Gamble	9.6	15.9	15.9	16.1	16.8	17.9	17.9	19.9	19.0
McDonald's	6.5	3.4	3.5	4.2	5.3	18.2	7.5	8.4	8.5
Pepsico		5.4	6.7	8.2	8.7				
Sara Lee Corporation		4.5	5.2	5.8					
RJR Nabisco			4.5	4.9	4.7		5.6		
Carrefour				13.3	11.2		17.2	28.6	31.5
Coca-Cola Company					12.7		11.9	12.7	12.6
Danone Group SA					8.6	8.8	8.8	9.9	9.9
Diageo Plc						17.6	10.5	15.9	13.7
Royal Ahold NV						18.2	20.9	33.7	
Wal-Mart Stores							19.4		35.5
Hutchinson Whampoa								2.8	6.1
Cadbury-Schweppes								5.4	
Total foreign sales	88.8	133.1	122.9	167.8	197.6	205.2	210.3	244.8	234.1

Missing data indicated by –; a blank cell indicates that company was not included in the top 100 ranking that year.
Source: United Nations Conference on Trade and Development (UNCTAD) (2003)[12] and UNCTAD (2004)[14].