

Globalisation and income growth promote the Mediterranean diet

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Abstract

Objective: To examine global food demand patterns and how changing diets may stimulate demand for and trade of Mediterranean diet products.

Design: Literature review. Trends in global and US food consumption patterns are examined and trade data are reviewed to evaluate the impact of changing diets on trade of Mediterranean diet products. Market access issues are also addressed briefly to highlight the role of policy in the trade of Mediterranean diet products.

Results: Diets are shifting towards higher-value products such as meats, fruits and vegetables, and a wider array of packaged food products. Trade in these products has also grown in the past two decades, with several non-traditional importers and exporters becoming increasingly active in the global market.

Conclusions: Income-driven demands for quality and variety are likely to increase the demand for Mediterranean diet products globally. While the middle-income countries appear to be the best growth prospects, the USA remains a potential growth market if these products can meet the growing consumer demand for variety, quality and convenience. Although consumer trends globally indicate growth in demand for Mediterranean diet products, the additional demand may not be reflected by a corresponding growth in trade. Trade in Mediterranean diet products continues to be hampered by higher than average trade barriers and high transportation costs for perishables.

Keywords

Consumption
Income
Trade

Mediterranean diet

Suppliers of Mediterranean diet products, such as pastas, fresh fruits and vegetables, fish, nuts, legumes, olives, olive oil and wine, are interested in whether the current popularity of the Mediterranean diet means they will experience continued increased demand for their products. To contribute to an assessment of that issue, this paper examines three practical questions:

1. Are global diets changing, why and in what direction?
2. Do consumption trends in the USA favour the Mediterranean diet?
3. Will changing diets stimulate trade in Mediterranean diet products?

Are global diets changing?

Cultural preferences, household demographics, education, geographic location, access to technology, and health and health attitudes are some of the many factors that work together to shape food preferences and dietary choices. It is income, however, that is the major driver of dietary changes around the world¹. Income provides the means needed to convert desired demand for goods into effective demand for those goods. In addition, and of special importance to those looking for growth markets for Mediterranean diet products, income growth promotes

larger dietary changes in lower- and middle-income nations than in high-income nations. The World Bank defines low-income countries as those with 1998 gross national product (GNP) per capita below US\$760, middle-income countries as those with 1998 GNP per capita between US\$760 and 9360, and high-income countries as those with 1998 GNP per capita above US\$9360. Countries in the low- and middle-income groups are generally called 'developing countries'.

The income–food consumption hierarchy

Diets change noticeably as countries move up the income scale. In low-income countries, like Bangladesh, demand for food is driven by the need to meet basic caloric requirements, leading to a diet comprising mainly carbohydrate-rich products such as cereals. Increases in income at this level most likely result in further consumption of calorie-rich carbohydrates. In middle-income countries, like the Philippines and Mexico, where most consumers can meet their basic caloric needs, taste, cultural trends and other economic conditions, such as the increased number of women in the formal labour market, are more important factors in determining national food demand. Income growth among consumers in these countries may lead to substitution of staple foods with more expensive sources of calories such as meat and

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fruit and vegetables, and with products popularised by cultures in developed countries.

At yet higher income levels such as in the USA, Japan and Western Europe, consumer demand for food may be influenced by demand for leisure and an array of social preferences and concerns. Consumers at this level of income can easily meet their nutrient needs, and income growth is likely to raise food expenditures through purchases of more expensive foods rather than through consumption of larger quantities. Food expenditure increases due to consumers paying higher prices for labour-saving ready-to-eat products, higher-quality products, or for products produced in a manner consistent with their social values (such as concern for the environment or animal welfare).

Developing country diets seeing most change

Recent analyses of 1996 International Comparison Project data, conducted by the US Department of Agriculture's Economic Research Service (ERS), indicate that low-income countries spend about 53% of their total household budget on food compared with about 17% for richer countries (Table 1). Also, food purchases by consumers in low-income countries tend to be more responsive to income and food price changes – a finding supported by new ERS estimates of income and price elasticities². For example, for every dollar increase in income, consumers in Tanzania, a low-income country, spend about \$0.80 on additional food purchases. Consumers in the USA, a high-income country, spend on average only \$0.10 of every additional dollar on additional food.

In low-income countries, consumers are likely to substitute between lower-priced products within a food group when prices change. For example, when the price of wheat increases, low-income consumers may substitute corn for wheat. Middle-income consumers, however, may be more likely to switch to products outside the cereal group, such as meat or horticultural products. For high-income consumers, food is such a small part of the total household budget that food price changes may lead to only small or no adjustments in the composition of food consumed. These findings suggest that middle-income countries are typically more responsive and more likely to

upgrade their diets when prices of higher-value food products decline in relation to prices of low-value staple foods – an important finding for suppliers of Mediterranean diet products.

Urbanisation and transportation advances increase diet diversity

Urbanisation, improved national and international transportation, and better infrastructure facilities have combined with income growth to expand global consumption and diversify global diets¹. Per capita food availability on a global basis increased from about 2300 kcal day⁻¹ in 1961 to almost 2800 kcal day⁻¹ in 1998³. In addition to changes in food availability, the basic sources of calories have changed, with animal and horticultural products accounting for a growing share of total calories consumed at the expense of root and tuber crops, such as cassava and sweet potatoes. In low-income countries, where hunger remains a concern despite recent economic gains, decreases in root and tuber availability were more than offset by significant increases in per capita supplies of all other food types between 1961 and 1998.

Population and GDP growth in developing countries drive food demand projections

Global per capita gross domestic product (GDP) grew by about 2.6% in the 1990s, with low- and middle-income countries registering higher growth rates of 4% and 3%, respectively, compared with high-income countries at 2%. According to the International Food Policy Research Institute (IFPRI), developing countries are expected to continue registering higher GDP growth rates until 2020 – rates of about 4.6% compared with 2.4% for developed countries⁴. Increased purchasing power among consumers in developing countries has been accompanied by faster rates of population growth, leading to greater demand for food. In developing countries, IFPRI projects meat demand to double by 2020, while cereal demand is expected to increase 50% during the same period. Although developed countries are also expected to experience income growth and slight increases in population, food demand in these countries is expected to grow at a modest rate of about 13%.

Table 1 Budget shares and income elasticities of food categories

Consumption category	Budget share			Income elasticity		
	Low-income	Middle-income	High-income	Low-income	Middle-income	High-income
Food as share of total budget	0.53	0.35	0.17	0.73	0.60	0.34
Share of food budget						
Cereals	0.27	0.18	0.12	0.53	0.37	0.17
Meat	0.15	0.18	0.18	0.78	0.64	0.36
Dairy	0.08	0.11	0.10	0.86	0.69	0.38
Fruit and vegetables	0.20	0.18	0.14	0.64	0.51	0.28
Beverages and tobacco	0.09	0.14	0.26	1.25	0.84	0.44

Source: Seale *et al.*².

The composition of food demand is also expected to change. The developing countries, which accounted for about half of the world's one billion urban persons in 1960, are expected to account for over four-fifths of the world's almost 5 billion urban populace in 2020. Urbanisation, coupled with higher incomes and education, will spur demand for variety and labour-saving food products. Analysis of Euromonitor data indicates stable or declining future growths in retail sales of packaged food products in some high-income countries, but significant increases in developing countries. Changes in the composition of food demand and increased purchases of packaged products are likely to expand markets for Mediterranean diet products. Since 1996, retail sales of cheeses, pasta and olive oil have expanded greatly in countries across the world from Brazil to India, Japan, Singapore and others (Table 2). Although developed countries like the USA and Japan registered major increases in retail sales of Mediterranean diet products during the past 5 years, Euromonitor projections indicate retail growths to have peaked in these countries. Retail growths in developing countries, on the other hand, are predicted to continue growing rapidly during the next 5 years.

In sum, global diets are changing. Rising incomes are driving increases in global per capita food consumption. Income, combined with urbanisation, improved transportation, greater access to global goods and other factors, is diversifying diets. Diets are shifting towards meats, fruits and vegetables, and a wider array of packaged food products. The most significant dietary shifts are occurring in middle-income countries. In these countries, consumers' rising incomes are providing new flexibility to upgrade diets towards higher-quality foods in response to relative price changes. In general, these global dietary shifts would appear to favour many Mediterranean diet products, although growth in red meat consumption in lower-income countries is also an important source of new food demand.

Do US food consumption trends favour the Mediterranean diet?

As a high-income country, the USA is expected to experience fewer large-scale dietary shifts than middle-income countries. However, in such a huge food market, even marginal shifts in dietary preferences are of interest to food suppliers. Such shifts create the potential for winners and losers in the competition for a slice of the American food pie.

US food consumption projections favour Mediterranean diet products

Some healthy dietary shifts appear to be in America's future. They are probably too small to significantly trim the American waistline, but they should be of interest to producers of Mediterranean diet products. A new ERS study has projected food expenditures and consumption to 2020⁵. These projections rest on the assumption that differences currently observed in food consumption patterns among different income and demographic groups will hold in the future.

By 2020, the US population will probably add between 50 and 80 million people. An additional 50 million food customers could fuel a 26% increase in food expenditures in the USA between 2000 and 2020, which means that US food spending will increase from almost \$800 billion in 2001 to over \$1 trillion in 2020. In addition to population growth, anticipated income growth and demographic shifts, such as an older population age distribution, greater ethnic diversity and higher levels of formal education, will affect US food spending and choices.

Perhaps the most marked demographic trend in the USA is the ageing of the population⁶. Although having a tendency to eat smaller quantities, the older members of the population actually spend more per capita on food and tend to eat away from home less frequently than younger people. The shift towards an older age distribution is forecast to increase per capita expenditures

Table 2 Retail sales and retail growth of Mediterranean diet food products in selected countries

	Cheese			Pasta			Olive oil		
	2000 sales (1000Mt)	Annual growth (%)		2000 sales (1000Mt)	Annual growth (%)		2000 sales (1000Mt)	Annual growth (%)	
		1996–2000	2000–2005		1996–2000	2000–2005		1996–2000	2000–2005
Brazil	384	3.7	4.9	885	1.8	1.3	28	14.7	12.8
Chile	34	1.5	1.3	123	0.9	1.2	2	11.8	13.8
India	16	14.8	11.8	1	15.5	22.8	0	6.9	8.9
Japan	113	3.6	−0.2	162	4.3	2.0	16	26.5	0.2
Malaysia	0	4.1	3.8	1	−1.5	4.2	0	−20.5	3.0
Mexico	1354	1.8	3.4	307	2.3	3.1	5	0.6	11.4
Russia	206	0	6.9	764	0	3.0	1	12.1	2.6
Singapore	2	5.6	4.4	2	13.3	15.5	0	3.4	3.4
South Korea	12	2.3	7.8	53	16	12.7	1	12.1	24.3
USA	1315	3.3	5.2	1031	−1.5	−0.7	1241	11.8	4.7
World	10102	2.2	3.1	9098	0.7	2.1	5113	4.3	2.2

Source: Integrated Market Information System, Euromonitor, 2002.

on fruits, vegetables and fish, reflecting current tendencies of older age groups to eat more of these foods than younger segments of the population.

Increasing ethnic diversity is another prominent trend. Basing forecasts on current dietary preferences, increasing diversity of the population is forecast to increase per capita consumption of fruits, nuts and seeds, eggs and fish, all else held constant, and to decrease per capita consumption of dairy products.

The 2020 population will also achieve higher levels of education, with 85% of the US population attaining a high school degree and 26% finishing college. Upward movement in education has been found to enhance consumer awareness and knowledge of diet and health issues. This is projected to increase the consumption of fruits and vegetables, except for fried potatoes, and to have a very small, negative effect on per capita consumption of beef, pork, other red meats and eggs.

Despite its already high income status, income is still the main driver of change in US food markets. Magnitudes of projected changes in food expenditures due to income growth overshadow the projected magnitudes due to changes in demographic characteristics such as age and race. Also, higher incomes drive up per capita food expenditures more rapidly than per capita quantities consumed for virtually all foods. Since most Americans are already well off and well fed, more of the extra discretionary consumer dollars are expected to go to purchasing quality and convenience than to quantity.

Combining the projected income and demographic shifts results in forecasts of how both per capita food expenditures and consumption will change between 2000 and 2020. Per capita food expenditures are projected to increase by 7.1%. The largest increases in per capita expenditures are projected for fruits (up 8.1%), vegetables (up 7.2%), fish (up 6.2%), miscellaneous prepared foods (up 5.3%), and sugars and sweets (up 4.7%). The largest projected increases for per capita quantities consumed are also expected for fruits, with citrus fruits, apples and other fruit increasing by 7% or more. Per capita vegetable consumption is also expected to increase, with exceptions being fried potatoes (down 8.6%) and 'other potatoes' (down 3.0%). Per capita beef and pork quantities are expected to decline by 2.8% and 3%, but fish is expected to increase by 6.5%. When these per capita projections are expanded by population growth, increases in food expenditures between 2000 and 2020 are likely to exceed 26%, with the largest percentage increases forecast for fruits, vegetables and fish.

Tomorrow's US consumer will demand more quality and variety

The effect of demographic and income changes on demand for food can be separated into two components: demand for quantity and demand for quality. The demand for quantity typically describes the demand for

undifferentiated basic commodities, while the demand for quality describes the demand for a wide array of food characteristics, such as better taste, nutritional content, safety and convenience. In the USA, increased demand for quality is being manifested through expenditures on higher-valued items within a food group, more expensive fresh foods, new food types, more dining out, new convenience foods, and foods that reflect more complex desires, such as 'fair-trading' practices, environmental protection or animal welfare.

Increases in income, especially when coupled with exposure to new and different foods, will also stimulate America's continuing quest for increasing variety in its diet. Indeed, the most successful food companies in 2020 are likely to be those that tap most effectively into Americans' appreciation for diversity in their lives, especially the possibly insatiable desire for new and different food choices.

In sum, US dietary shifts do appear to favour the Mediterranean diet. Higher incomes, education and ageing will all reinforce recent shifts in the composition of Americans' increasingly varied diets towards more fruits, vegetables and fish, but it is important to remember that these are marginal shifts. The effects of higher per capita incomes will be largely realised in the form of increased demand for quality, convenience and variety, rather than quantity.

Will changing diets stimulate trade in Mediterranean diet products?

Changes in global food demand driven by diet upgrades in developing countries and the quest for quality and leisure in developed countries have significantly altered global food trade patterns. While trade in bulk commodities has decreased in share since 1980 to less than 30% of current world agricultural trade, the share of processed and semi-processed products has increased (Fig. 1). Trade in intermediate processed products, made up of semi-processed bulk commodities such as vegetable oils, oilseed meals and flours, has kept pace with world agricultural trade and maintained its share of world trade. Fresh horticultural products represent the smallest of these aggregate categories, and its 12% share of world agricultural trade has remained almost unchanged during the past 20 years. The perishable nature of fresh horticultural products constrains trade, although technological advances to extend shelf-life have enhanced the potential for increased produce trade.

Trade in Mediterranean diet products is diversifying

Developed countries such as those in Western Europe, the USA, Japan, Canada, Australia and New Zealand have traditionally dominated global trade in Mediterranean products. Ten major exporting countries account for over

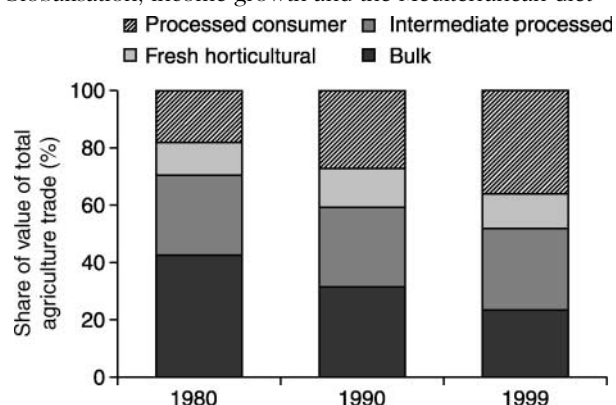


Fig. 1 Higher-value products increasing as share of trade. Source: United Nations COMTRADE, Economic Research Service classification

80% of total world exports of dairy products. Fifty to eighty per cent of government support to agriculture in some of these countries goes to the dairy sector. Although to a lesser extent, fruit and vegetable production and export, especially in Western Europe, also receive government assistance⁷. Ten large exporters also account for about 80% of the world nut exports and 62% of world fruit and vegetable exports (Table 3). However, exports of Mediterranean products in many major exporting countries declined between 1995 and 1999, while exports from smaller exporters have increased substantially during the same period.

Developed countries have also traditionally accounted for most world imports of Mediterranean products, with the top 10 importers accounting for 61% of dairy, 77% of nut and 70% of fruit and vegetable imports (Table 4). However, globalisation and income growth have increased the demand for these products in developing

countries, and many developing countries registered significant increases in imports between 1995 and 1999.

As global diets diversify, increasing the demand for dairy products, nuts, fruits and vegetables, new suppliers have entered the market to meet the growing demand. While traditional suppliers continue to be a presence in the market, demand and supply from non-traditional countries will likely drive future growth in trade, especially for nuts, fruits and vegetables. For dairy, however, high subsidies paid to suppliers in many developed countries may constrain new producers from establishing and expanding the industry.

In addition to demand-driven factors, other factors are also shaping global trade of Mediterranean diet products. Among these, intra-industry trade is an important phenomenon, whereby the same country exports and imports products within the same industry. For example, the USA exports dry milk and whey to many countries, while importing cheeses from Europe. Similar trends are observed in trade of wines, fruits, vegetables and many processed foods. Growth in intra-industry trade can partly be attributed to foreign direct investments (FDI). FDI is investment in a foreign entity or affiliate in which a parent company holds a substantial, but not necessarily a majority, ownership interest. FDI and trade are often complementary and fuel bilateral trade growth between countries. For example, the USA and Canada have greatly expanded FDI sales and trade in processed fruits and vegetables.

Trade liberalisation enhances trade of Mediterranean food products

Despite large gains in market access for agricultural products obtained from the Uruguay Round negotiations of the World Trade Organization (WTO), significant

Table 3 Selected exporters of Mediterranean diet products

Dairy		Nuts		Fruit and vegetables	
	Export change, 1995–1999 (%)		Export change, 1995–1999 (%)		Export change, 1995–1999 (%)
<i>Top 10 exporters</i>		<i>Top 10 exporters</i>		<i>Top 10 exporters</i>	
Germany	–12	USA	31	USA	1
France	–17	UAE	98	Spain	0
The Netherlands	–21	Australia	20	The Netherlands	–10
Belgium/Luxembourg	–23	China	–30	Italy	–2
New Zealand	7	Hong Kong	–32	Belgium/Luxembourg	4
Denmark	–4	Spain	75	France	–1
Australia	37	South Africa	159	China	–10
Ireland	–33	Singapore	–23	Mexico	22
UK	–8	Portugal	131	Turkey	–2
Italy	12	Russia	4010	Germany	6
Global market share	>80%	Global market share	80%	Global market share	62%
<i>New exporters</i>		<i>New exporters</i>		<i>New exporters</i>	
Morocco	553	Indonesia	2224	Niger	741
Mexico	398	Zimbabwe	650	Vietnam	244
Swaziland	247	Turkey	245	Nigeria	109
Cameroon	160	Ukraine	208	Pakistan	108
Indonesia	148	Bulgaria	187	Peru	72
Global market share	0.3%	Global market share	4%	Global market share	1%

Source: FAOSTAT database⁹.

Table 4 Selected importers of Mediterranean diet products

Dairy		Nuts		Fruit and vegetables	
	Import change, 1995–1999 (%)		Import change, 1995–1999 (%)		Import change, 1995–1999 (%)
<i>Top 10 importers</i>		<i>Top 10 importers</i>		<i>Top 10 importers</i>	
Germany	–15	USA	33	USA	40
Italy	–9	UAE	79	Germany	–15
The Netherlands	–27	Canada	85	UK	17
Belgium/Luxembourg	–28	Japan	–21	Japan	–1
France	–8	Hong Kong	–30	France	–10
UK	27	UK	11	The Netherlands	3
USA	56	Germany	35	Belgium/Luxembourg	–7
Spain	–6	The Netherlands	40	Canada	16
Japan	–5	Belgium/Luxembourg	82	Italy	8
Algeria	8	France	51	Spain	1
Global market share	61%	Global market share	77%	Global market share	70%
<i>New importers</i>		<i>New importers</i>		<i>New importers</i>	
Lithuania	458	Colombia	1364	Mexico	143
Latvia	312	Egypt	1219	Poland	85
Kenya	193	Argentina	900	Turkey	81
Zimbabwe	168	South Africa	863	Egypt	54
Panama	166	Thailand	65	China	43
Global market share	0.2%	Global market share	1%	Global market share	4%

Source: FAOSTAT database³.

barriers to trade continue to exist for Mediterranean food products. Many of these items, such as olive oil, pasta and cheese, are value-added products and suffer from higher rates of tariffs generally levied on value-added products, a process known as tariff escalation. The mean and median tariff rates faced by Mediterranean products remain very high, ranging from 28 to 74%, and maximum allowable rates in some cases are as high as 706%⁸.

Additionally, fresh fruit and vegetables are subject to sophisticated tariff schedules, where tariffs are defined narrowly for products based on date of entry, entry price and degree of processing⁹. These tariffs have large impacts for trade in fresh produce, as they discriminate according to when a product arrives, with large tariffs corresponding to periods when domestic production is at its highest levels.

Many countries also use the Special Safeguard (SSG) provision allowed under WTO's Agreement on Agriculture to restrict imports of Mediterranean products. Under the SSG provision, additional tariffs can be levied if imports to a country exceed the volume or value limits set by the country. From a total of 327 SSGs implemented during 1995–99 by WTO member countries, about 16% were on fruit and vegetables and 12% on dairy products^{10,11}. The implementation of other WTO provisions, such as the Sanitary and Phytosanitary Agreement and trade remedy provisions, are also potentially particularly important to future trade in Mediterranean products.

Conclusions

In sum, changing diets globally do appear to be stimulating trade in Mediterranean diet products. The composition of global trade is shifting towards processed and

semi-processed products, away from bulk commodities. Rising incomes and advances in shipping technology raise the potential for more trade in perishable products like fresh fruits and vegetables. Middle-income countries appear to be the best growth prospects for Mediterranean diet products. However, transportation costs for shipping perishable products are still high; and trade barriers appear to be higher than average for Mediterranean diet products. Also, consumer concerns with quality, safety and convenience may be increasingly important trade factors. Note that detentions of US import shipments for food safety violations, such as residues of unapproved pesticides, are highest for vegetables and seafood products.

With respect to the US role in Mediterranean diet product trade, Mediterranean diet products are among the fastest growing US imports. Nevertheless, imports' shares in US food consumption are generally still small for most products. Additionally, US food markets are mature markets, so demand for food is not likely to grow much faster than the rate of population growth – despite America's seemingly insatiable appetite. The extra US consumer dollar is expected to go more to quality than quantity – good news for Mediterranean products if they can cater to that trend.

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