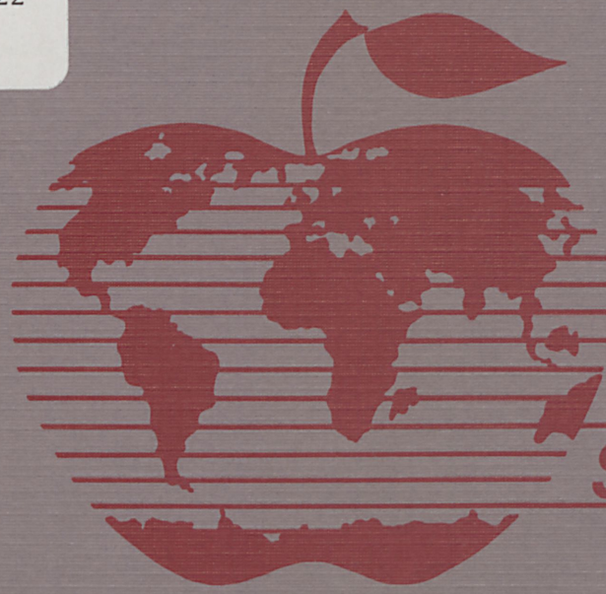

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NORTHERN AMERICA AS A PRECURSOR OF CHANGES IN WESTERN EUROPEAN FOOD PURCHASING PATTERNS

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Those who analyze food consumption trends in Northern America are used thinking of European cuisine as the major antecedents of the eating habits of Americans. During the colonial period, American cuisine most resembled that of the English, but with slight influences from Dutch and French cooking and with the addition of some ingredients widely available in Northern America (most notably maize, maple syrup, and wild game). Waves of immigration in the 19th and 20th centuries brought yet more influences. From 1901 to 1921, the USA received 15 million immigrants, of which 41% were from Northern and Western Europe, 44% from Eastern and Southern Europe, and 5% from Asia (Kinsey 1990). During this period, rye breads (Scandinavian), bagels (Jewish), Polish sausage, and Muenster cheese (German) became widely available in grocery stores. Moreover, German, Italian, French, and Spanish restaurants were opened in most major U.S. cities. Olive oil, Parmesan cheese, and anchovies were imported. German brewmasters largely converted breweries from English-type beers (porter, stout) to lager beers. The wine industry, established by European immigrants in the 19th century, was decimated by that great failure in social experimentation, the Prohibition Era of 1917-1933.

In more recent years Northern American food habits have been affected by additional ethnic groups. From 1970 to 1986, the 15 million immigrants to the USA came primarily from Latin America (about 60%) and Asia (about 30%). Hispanic foods and drinks are now consumed as frequently as pizza, and Chinese and other Asian restaurants are ubiquitous in American cities and towns of all sizes. The latest trends in restaurants are those offering Ethiopian, Afgan, or Salvadorean food. Indeed, new restaurants are sensitive barometers that measure political or economic turmoil around the world.

These changes in American eating habits have occurred through what economists call a "demonstration effect." Curious individuals, perhaps tourists or neighbors, try a new national cuisine, like it, and continue to demand it. It is said that American soldiers in Italy during the Second World

War developed a taste for Neapolitan pizza. European tourists have found pizza (much changed from the Italian original) a convenient and inexpensive source of food during trips to the USA. Ironically, U.S. foodservice companies, which in 1988 had about $7 billion in retail food sales in Europe, have been major forces in developing European tastes for Americanized pizza.

In this paper, I will explore the fascinating topic of the influence of Northern America on the food purchasing patterns of Western European consumers. I will argue that Northern America has indeed been a model for changing European food habits, in the sense that many American patterns have subsequently been observed in Western Europe. Clearly, European and American food consumption and expenditure patterns are quite different, yet just as apparent is the increasing convergence of such patterns. Consumer food preferences in the two areas are different, and persistently so, but the differences will narrow.

I believe that the major mechanisms of change have been international trade and foreign direct investment. In addition, certain socio-demographic changes in Northern American households have occurred first or to a greater degree than in Western Europe. While demonstration effects are doubtlessly present, I suggest that they play a minor role in changing European food habits. To accept my argument, you must agree with its premise that "all consumers are basically alike." That is, consumers with the same incomes and socio-demographic characteristics, facing the same relative prices,and holding the same information, will tend to choose the same basket or array of goods. If one accepts this view, then changes in Northern American food habits become a useful predictive device in Western Europe. If one does not, then changing European food expenditure patterns are simply the result of essentially unpredictable historical and cultural factors.

Universal Determinants of Food Expenditures

Economists who specialize in estimating household demand for food have found that annual changes in per capita consumption can be explained statistically by three factors: household real income, product price, and the prices of substitute products (including nonfood products). The predictive power of models that incorporate only these three determinants is quite impressive. An excellent study of the U.S. demand for about 40 major food groups is a case in point (Huang 1985). This study examined the year-to-year variations in per capita consumption from 1954 to 1983 for such foods as beef, pork, chicken, turkey, eggs, milk, wheat flour, and several others. Huang's model was able to explain as much as 97% of the annual variation in demand, and it did quite a good job of matching "turning points" (peaks and troughs) in consumption. Moreover, the Huang model has been shown to predict consumption at least four years into the future with a high degree of accuracy (Johnson, Connor, et al. 1989:14-25).

There are several limitations of the standard estimation techniques of economists from the point of view of business planning. For one, the degree of aggregation is often too great to be useful in the more narrowly defined markets in which pricing, new-product, and merchandising decisions are usually made. Of what immediate use is information on chicken demand elasticities when a company is trying to sell frozen, prepared "Chicken Kiev?" Second, the variable representing income is known to be highly correlated with a number of other socio-demographic characteristics that may be more useful in marketing a product. For example, household income is known to be positively correlated with education levels, with dual-career situations (both adults are working outside the home), and with the ownership of advanced kitchen appliances such as microwave ovens. For foods sold through normal grocery stores or being advertised on certain mass media, it is usually not possible to segment demand by income levels directly. However, a marketing plan can be devised to target

consumers by education level; and a product can be designed to appeal especially to busy people who own microwave ovens. Third, business conditions do not usually permit companies to collect 20 years of data, particularly when a product is relatively new. When only current data are available, then a wider array of household characteristics are known to determine food consumption.[1] Among these factors are ethnic origin, regional location, household size and composition, age profile, "lifestyle" preferences, and attitudes about food nutrition and healthfulness. Finally, income and prices become weaker determinants of food expenditures when food becomes a smaller share of total expenditures (Kinsey 1990). In this situation, factors like taste, convenience, variety, and the social status conveyed become correspondingly more important, though some of these factors are positively related to unit price.

There is little doubt that income and socio-demographic characteristics have strong associations with food and beverage expenditures. Looking at recent U.S. data confirms several well-known patterns (Table 1). Income is very closely related to total food and beverage expenditures, with the richest one-fifth of the households spending annually more than three times ($6,703) the amount spent by the poorest one-fifth ($2,038). Consistent with Engel's Law the poor pay a higher <u>percentage</u> of their disposable incomes (19.7%) than the rich (14.4%). Spending on food and beverages in food stores by the richest one-fifth ($3,060) is more than twice the amount spent by the poorest one-fifth of all households ($1,321), but the rich allocate a far smaller percentage of their incomes (6.6%) than do the poor (12.8%). However, the percentage of expenditures devoted to eating away from home and to alcoholic beverages is almost unrelated to income levels. High-income consumers also tend to have higher education levels, managerial-professional jobs, smaller families, more dual-career situations (both spouses working), and more wealth.

Table 1. U.S. Food and Beverage Expenditures, by Demographic Characteristics, 1987.

Household Characteristic	Food at Home	Food Away-From-Home	Alcoholic Beverages	Proportion of Total Expenditure
	Percent			
Average household	8.6	6.4	1.2	16.2
Age:				
Under 25 years old	7.3	8.1	2.2	17.5
25-34 years old	8.2	6.5	1.5	16.2
35-54 years old	8.2	6.5	1.1	15.8
55-74 years old	9.4	5.9	0.9	16.2
75 years or older	12.2	5.0	0.6	17.8
Size of Household:				
One person	6.7	6.9	1.8	15.3
Two persons	8.1	6.4	1.2	15.7
Three or four persons	9.0	6.1	1.0	16.1
Five or more persons	11.3	6.6	0.9	18.8
Status of Household:				
Single person	7.7	6.8	1.8	16.2
Single parent, one or more children	11.3	6.4	1.0	18.8
Couples: No children	7.8	6.3	1.1	15.2
Oldest child under 6 years	8.3	4.7	0.8	13.8
Oldest child 6-17 years	9.2	6.6	0.9	16.7
Oldest child 18 or more	9.1	6.7	1.0	16.8
Income Before Taxes:				
Lowest 20 percent	12.8	5.8	1.2	19.7
Second 20 percent	11.7	6.1	1.2	18.9
Third 20 percent	9.5	7.0	1.5	18.0
Fourth 20 percent	8.3	6.4	1.2	15.8
Highest 20 percent	6.6	6.7	1.2	14.4

U.S. Census Bureau (1990:442).

Note: "One-person" households are not the same as "single-person" households. The fo household takes no consideration of the social status of the person. The latte individuals living alone who have never been married, individuals other than co in multiple-person households (e.g., two childless sisters), single parents wit living at home, and all single persons living in boarding houses or other group arrangements.

Better educated consumers may be more skeptical of product claims, more interested and informed about food safety and nutrition, and generally less concerned about buying brands that confer social status (i.e., they purchase more store-label foods). On the other hand, well-off consumers are less price sensitive--more willing to pay more for higher demonstrated quality, variety, and convenience. Although they eat out more often, high-income households tend to have the most modern and varied equipment for food storage and preparation at home; they are more adventuresome in trying new products, new recipes, and different cuisines (Kinsey 1990). Such households do less frequent food buying, but with greater male spouse participation in shopping and preparation.

Income is also associated with age and family structure. Middle-age childless couples have on average the highest incomes (five times the official "poverty level"); couples with children, retired couples, and nonretired individuals living alone all had incomes close to the U.S. average (three times the poverty level); single mothers with children and retired individuals were likely to be poor (Kinsey 1990:52). As shown in table 1, households with heads of the household in middle age (35-54) tend to spend the most on food, as do households with older children. On the other hand, households with children spend less per person as the number of children increases (a phenomenon called economies of scale in consumption). As will be seen, the number of childless families and the number of individuals living alone have increased over time, factors that partly account for the increasing disparity of household incomes in the United States. Two-person households spend 1.66 times as much on food as one-person households; three-, four-, and five-person households spend 2.11, 2.40, and 2.58 times as much, respectively. Increases beyond five persons are negligible (Kinsey 1990:32-33). Smaller households also spend considerably more per person on food away from home; indeed single

persons spend more on food away from home than for food at home (Table 1), especially single males.

In summary, household income, product price, and the prices of substitute consumer products are strong determinants of the per capita consumption of all food and major categories of foods. However, to explain the demand for individual food items that account for only small shares of a household budget, other factors must be considered: ethnic origin, region, household size and composition, age, lifestyle, and attitudes toward foods. In addition, changes in total expenditures result from a combination of per person demand and population growth.[2] Ignored here are purchases of food made by businesses for their employees and by government for schools, hospitals, the military, and so forth; in developed countries, nonhousehold purchases tend to be less than 10% of domestic demand.

The first column in Table 2 lists what I believe are the five major determinants of aggregate household expenditures for food in all countries. Conventional economic analyses of demand are conducted on the assumption that preferences for food and all other products are fixed and, therefore, such analyses have little to contribute to our understanding of long-term changes in food expenditures. However, there is a body of knowledge in business case studies and some anecdotal evidence on how changing preferences, lifestyle, and attitudes affect food buying habits.

Economists find it difficult, if not impossible to measure factors like family "lifestyle." Thus, the second column of Table 2 lists lifestyle and other associated factors next to the more measurable factors that affect food expenditures. The five factors are listed in approximate order of importance in predicting future expenditure trends for all food. For individual food products the order of importance would probably be: preferences, demography, income, prices, and population growth. Each factor will now be discussed.

Table 2. Universal Determinants of Real Household Food Expenditures.

Factor	Also Related to
1. Population Growth	Household size
2. Income/Wealth	Education level Dual-career families Kitchen technology Automobile ownership Television ownership
3. Relative Prices of Consumer Products Actual vs. perceived price Perceived quality	Advertising Intensity
4. Other Demographic Characteristics:	
Ethnic pluralism	Persistent regional preferences
Number of children/size	Lifestyle
Dual-career families	Perceived value of time
Age of head of household	Lifestyle
Group living arrangements	Age, size, lifestyle
5. Preferences and Attitudes:	
Customary cuisine habits	
Desire for variety	Advertising Intensity
Eating away from home	Lifestyle
Nutritional beliefs	Education level
Concern for preventative health	Education level

Population Change

Household expenditures for food and beverages adjusted for inflation grew at about 2.5% per year in the United States between 1963 and 1982 (Connor 1988:9). Population increased at 1.0% per year during that period; that is, population change accounted for 40% of the real increase in food purchases, while increased per capita consumption accounted for the remaining 60%.

Population growth is slowing down in all industrial economies. In Northern America population growth in the 1990s is expected to be about 0.8% per year (Table A1). Further slowdowns will occur in the next millenium when population change is predicted to be 0.5 to 0.6% per year. However, these estimates depend on highly uncertain assumptions about net immigration, which has ranged from 350,000 to 800,000 per year into the United States since 1970, or 20% to 50% of the total U.S. population increase. Most projections assume that net immigration will account for 20 to 30% of the U.S. population increase, leaving a natural increase of about 0.5% per year in the 1990s and reaching zero around 2020.

Western Europe is moving more rapidly toward zero population growth than is Northern America. In the 1970s, Western Europe's population grew at about 0.5% per year, but by the 1990s the rate is expected to drop to 0.1% per year (Table A1). Lower population growth rates in Western Europe cannot be ascribed to differences in fertility or death rates (Table A2).

Income and Wealth

Income, wealth, and related socio-demographic measures are higher in Northern America than in Europe, and have been so for more than half a century. The leading position of Northern America has been obscured in recent years because of fluctuating currency exchange rates and wide differences among countries in retail prices. To avoid these problems, a superior international measurement has been developed by economists called the "purchasing power parity (PPP) index." This index shows how many units of

currency are needed in one country to buy a given set of goods that one unit of currency will buy in another country. By using the PPP index instead of exchange rates, the volume of goods and services produced in various countries can be compared at a common set of international prices. If two countries have the same GNP per capita, but consumer prices are higher in one country, then the latter country will tend to have a lower purchasing power parity.

In 1987, the Northern American economy was generating $18,000 per resident (Table A3). The purchasing power parity in ten selected Western European countries ranged from $8,681 (Spain) to $15,405 (Norway). The unweighted average of the ten countries ($12,700) was 30% lower than Northern America. In 1970, the gap in consumer purchasing power was about 35%. Thus, while the differences in consumer spending ability between Europe and America have narrowed, there is still a substantially higher level in Northern America. To the extent that differences in household incomes drive food choices, Northern America is indeed a model for Western Europe.

This statement is backed up by evidence on other household characteristics that are closely correlated with per capita income. Food expenditures' shares are known to decline as real expenditures rise. As is well known, the proportion of household spending on food and beverages is quite low in Northern America (12% in the USA and 15% in Canada in 1986), but the average share for 11 European countries was almost 22% of private expenditures (Table A4). The ratio is highest in countries with lower per capita incomes (e.g., Spain) and with relatively high food prices (e.g., the Nordic countries). The effect of prices on expenditures is particularly evident in countries with high alcoholic beverage taxes (Finland, Canada). In fact the total <u>amount</u> spent on food and beverages is about the same in Europe ($2,305 in 1986) as it is in Northern America ($2,414) (Table A5).

Income and wealth are closely related. High income shows up in early adoption and high rates of ownership of household appliances (Table A6).

Older kitchen appliances are widespread in both areas, but Northern America adopted refrigerators and freezers much earlier. Microwave ovens are much more common in Northern America than in most of Europe. Such ownership patterns are indicative of the high value placed on "convenience" (household time-saving) by high-income consumers.

High incomes have permitted widespread ownership of two other assets that affect food purchase decisions--the automobile and television. In 1975, Northern Americans owned 44% of the world's motor vehicles, a share that by 1987 had declined to only 38%. In 1987, the lowest ratio of persons per car (1.8) was in the USA. In Western Europe the ratio varies from 2.1 (West Germany), to 2.5 (France and Italy), to 3.9 (Spain). High rates of automobile ownership and usage predispose Northern Americans to one-stop grocery shopping for heavily packaged items, made possible warehouse stores (which draw customers from a 50-mile radius and who spend $150-200 per visit), and stimulated the growth of fast-food and drive-in foodservice establishments. Lengthy commuting patterns place a premium on new foods and beverages that can be eaten with one hand so as to leave the other free for driving.

High television and radio ownership in Northern America transformed food marketing methods many decades ago (Table A7). The dominance of the electronic mass media has given an advantage to food processors with well-known brands, colorful packages, emotionally charged product images, and snappy slogans or songs. Highly repetitive, brief, and simplistic advertising messages predominate, whereas more rational appeals are found in the print media. There is evidence that a synergistic effect of advertising by all brands in a category stimulates demand for the entire product category (Connor, et al. 1985:313-320). When an industry has a dominant brand, some of the advertising content is practically generic (e.g., many Campbell's Soup advertisements extoll the virtues of eating soup).

Relative Prices

Demand is stimulated by a product price that is low relative to other substitutes. Long-term changes in price relationships seem to be driven more by technological changes on the supply side than any other single factor. Such stimuli can only rarely be engineered by individual food processors or distributors. More often, they are simply to be noted as constraints to be reckoned with.

Overall demand for food and beverages has been assisted by falling price relative to all most other consumer goods. In both Western Europe and Northern America, nonfood prices have on average risen 1 to 2% faster each year than food prices (Table A8). This was true in every European country except Norway and Sweden, whose farmer parties and cooperatives appear to be exceptionally well organized as political interest groups. In general, the prices of housing, transportation, and most services rose faster than food prices, a trend that may be attributed in large part to the impressive productivity gains in agriculture and food processing (Connor 1988; Table A8).

There is one major expenditure category where Northern American trends portend a difficulty for food demand in the future. Health expenditures in the USA are increasing at such a rate in recent years that they may well exceed food and beverage spending by 1992.[3] Although health expenditures are a higher share of GDP in Northern America than in Western Europe, the share has risen in virtually all European countries as a well (Table A10). The large share of health costs in GDP has been obscured by the large role that governments play in health services in Europe.

Relative prices among foods are affected by a number of forces in the domestic food systems of Europe as well as by the trading relationship Europe has with its largest food supplier, Northern America. The principal imports have been animal feed ingredients, which have together with more efficient

animal feeding techniques lowered the relative costs of meats in the European Community. Beef and poultry consumption per capita has been historically quite a bit higher in Northern America than in Western Europe; even taking into account the higher per capita consumption of pork in France, Germany, and other Western European countries to the north of these countries, Northern American total meat consumption is higher than Western Europe. Despite the declines in per capita beef consumption in Northern America since about 1975, overall meat consumption has continued to rise because of poultry (Johnson, Connor, et al.). Changes in animal genetics, feeding practices, retail trimming standards, and consumer cooking methods will continue to generate fewer calories per person from animal sources in Northern America, a trend noted in Blandford's (1984) analysis. Moreover, this trend will be reinforced by continued substitution of margarine and low-fat dairy products for high-fat dairy products; this trend is seen in both Northern America and Western Europe (Wheelock, et al. 1989). Thus, the influence of relatively lower prices and consumer desires for reduced animal fats will lead to greater per capita meat consumption in Western Europe, but a change in the mix to lower-fat meat sources.

Trends in meat consumption may be one of the few changes in food purchasing behavior that can be predicted from price changes. Overall, the influence of relative prices on food choices is likely to be blunted in the future. As already mentioned, higher future incomes reduce consumer price sensitivity, though an important segment of large or poor families will remain highly price-conscious; moreover, periodic recessions have a tendency to heighten price sensitivity as consumers facing unemployment reevaluate their food budgets. One other factor that reduces price sensitivity by consumers is the increasing absence of quality guidelines. Consumers appear to be less informed about government or industry-wide grades and standards; where these exist and are employed by retailers, consumers rely heavily on price to guide

purchase decisions. Increasingly, however, foods and beverages are becoming more complex mixtures of ingredients that resist objective grades or standards. In the case of such highly prepared foods, consumers rely more and more on brand or company reputations as guides to quality. Needless to say, mass-media advertising is playing a more prominent role in creating these reputations. Mass-media advertising, particularly the electronic media, are simply not suited to conveying concrete product information such as price, flavor intensity, safety, or other relevant dimensions of food quality.

This is another feature of Northern American merchandising that appears to be leading a similar trend in Western Europe. Mass-media advertising expenditures in the USA, an increasing share of which are for food, are three times the amounts spent in the eleven leading Western European markets (Table A11). The amount spent per person in the USA is also triple the Western European average, but rates of increase were faster in Europe in the 1980s, so a catch-up appears to be going on. Proportionately less television advertising is used in Europe, but it also appears to be rising toward U.S. levels.

Although this would be difficult to substantiate, it is likely that the foreign direct investment activities of major food manufacturers have been the principal mechanism for the increasing convergence of food advertising methods between Northern America and Western Europe. United States multinationals have key positions in many European markets for highly differentiated foods and beverages. Their European rivals have been compelled to respond with similar marketing techniques; in many cases they have turned for help to the very American advertising companies that followed U.S. multinationals to Europe. Quite possibly, the takeover of so many U.S. food processors by mainly European multinational corporations has reinforced this trend via a feedback mechanism. The Stouffer frozen-foods subsidiary of Nestle has

essentially done the U.S. test-marketing for new items subsequently introduced by Nestle in its European markets.

Other Demographic Characteristics

Besides overall population growth, there are several demographic changes that are driving food-purchase decisions:

- ethnic pluralism & regional preferences,
- smaller household sizes,
- dual-career families,
- aging population, and
- group living arrangements.

In the case of smaller families headed by increasingly older consumers, Western Europe appears to have led Northern American demographic trends. On the other hand, ethnic pluralism and dual-career families appear to be earlier, stronger trends in Northern America than in Europe. Each of these demographic changes has significant implications for food purchase behavior and the marketing strategies of food firms (Wikstrom 1986).

As mentioned above, the USA and Canada have a long history of massive immigration from many parts of the world. Food firms there have had long experience in marketing authentic ethnic specialties to often geographically concentrated minorities. More importantly, these companies have been adept at spotting interest in ethnic foods by consumers outside such groups and formulating foods that, while not truly traditional, appeal to a wider set of buyers. Many Oriental, Mexican, and Italian specialties are widely available in frozen prepared form from major food manufacturers; most often they are "compromises"--versions that mimic the originals, but that use formulations or preparation methods that broaden their appeal. As the ethnic groups lose their identity, ironically the compromises often become the new standards against which the newer products are judged--the ethnic dishes become "Americanized" in form and image.

Knowledge of the techniques of indigenation, together with serving segmented or regionalized markets is particularly well developed in North American multinational food companies. It may well be an important competitive advantage in the ethnically fragmented European Community, including the small but growing number of guest workers and refugees from around the world. It may also be an advantage in marketing new food products in those countries whose citizens are more open to cultural pluralism[4] (Wikstrom 1986).

Households are becoming smaller in all industrialized economies, reflecting a number of collateral trends (Table A12). As incomes rise and housing becomes more affordable, the young create their own households at earlier ages; the elderly live longer and are more able to afford to continue living in their homes as widows or widowers; higher divorce rates increase the demand for separate housing; perhaps most importantly, couples are having fewer children. As a result of these simultaneous trends, the proportion of U.S. households without children has risen from 55% in 1970 to 66% in 1980 and probably has risen further since (Table A13). Incomplete data from Western Europe are consistent with these U.S. trends, and indeed may have preceeded them. In addition, households with two or more unrelated adults living together have risen to about 5% of all households in the USA (Kinsey 1990:26). Finally, more of the U.S. population is living in non-households (group quarters such as dormitories, old-age homes, and other institutions).

Smaller households increase per capita consumption of food because economies of scale in procurement and preparation are more difficult to realize. Reductions in economies of household size will particularly affect per capita consumption of fruits and vegetables; weaker effects will be seen in bakery products, cheese, soups and sauces (Price 1988). Income held constant, smaller households tend to purchase more food away from home

(especially childless couples and single males). Food purchased for use at home by small households tends to be more convenient and bought in smaller packages. In terms of types of goods, smaller households have increased total expenditures on dairy products, poultry, and fresh and processed fruits; they have reduced purchases of fresh fluid milk, beef, and processed vegetables (Kinsey 1990:34). Of course, by itself the fragmentation of households also reduces household incomes, particularly for female-headed households. Male-headed households are especially inclined to purchase highly prepared foods; they tend to be very conservative about trying new food products but tend to be more impulsive in choosing foods in stores.

Dual-career households have many of the same characteristics of small households, but their education and incomes tend to be the highest of any household type. Dual-career households and female labor-force participation go hand-in-hand. The proportion of women working is quite a bit higher for all age groups in Northern America than most Western European Countries (Table A14). (For all age groups except 65 years or older, Sweden has higher female labor-force participation than do the USA or Canada). Moreover, female labor-force participation is increasing for all age groups in Northern America, whereas in Europe it is increasing only for those who are 25 to 54 years old. The increasing number of dual-career families may be inferred by the fact that in both Northern America and Western Europe male labor-force participation has remained steady for the peak earning years (25-54). In both areas, fewer school-age males are working in Europe and more males are retiring early (Table A15). Because on the whole the rate of female labor-force participation has risen faster than male participation, women account for higher and higher proportions of the civilian labor force (Table A16). The female-to-male-worker ratio has been consistently higher in Northern America than in Western Europe. Fewer households now have single income earners than formerly. However, more women work part-time than men, though this difference

is narrowing quite quickly. All these trends have led to a decline in the amount of leisure time per household, especially for female household members.

Dual-career households and female work demands have caused shopping and food preparation patterns to change (Kinsey 1990:83-85). Take-out, fast-food, and home-delivered foods have grown quickly. Fewer traditional meals are eaten together at home, and more men and children are preparing food at home, though the principal burden still falls on female heads of households. One 1977 survey of family meal habits found that 46% of all husbands do some food shopping, and 24% do some cooking at home (Shapiro and Bohmbach 1978). In families where the wife works outside the home, 15% of all family meals are prepared by another member of the family. Less time is being spent preparing those meals that are eaten at home, partly because more kitchen equipment is available. Convenience of preparation is a key feature of foods purchased by busy, affluent households.

Dual-career households are a major force underlying the trend toward eating away from home. Married U.S. couples with a single earner spent only 24 to 30% of their food expenditures on food away from home; however, dual-career households spend almost 40%. Dual-career, middle-income households probably see restaurants mainly as a time-saving activity. Unmarried persons, older persons, and upper-middle income educated persons tend to spend more time eating out than other groups; rather than seeking to live more efficiently by eating out (as do the busy, dual-career households), these groups tend to view it as a leisure activity.

A strong upward trend in spending on food away from home is apparent in all industrialized countries (Table A17). The trend appears to have begun earlier in North America, and it is strongly linked to increased spending on fast-food type restaurants. French, Italian, and Spanish consumers now spend a higher percentage of total expenditures on food away from home than do U.S. consumers, but these data are somewhat inflated by the inclusion of hotel

expenditures (not included for the USA data) and spending by tourists. Although the proportion spent in restaurants is somewhat higher in southern Europe than in northern Europe, it is rising in every European country (except Belgium), and it is becoming a higher proportion of total food expenditures as well.

The aging of the populations of both Northern America and Western Europe is well documented. Life expectancies are high and increasing in both areas (Table A2). Food expenditures tend to peak as the senior head of household reaches late middle age. Households headed by persons 55 to 64 years old spend 10% more than the average household; those over age 65 spend 12% less (Kinsey 1990:44). Older U.S. consumers tend to spend more on meat, fruits, and vegetables, but spend less on milk, eggs, soups, snack foods, and sweet desserts than the average. Older consumers tend to live in smaller households with lower incomes.

Preferences and Attitudes

Attitudes toward food are difficult to measure, but to ignore attitudinal changes would be to omit an important dimension of the future demand for food. On balance, the attitudinal changes observed in Northern America parallel those in Western Europe, though it is difficult to identify whether one geographic area may have led the other. There are many inherited social values and learned preferences that drive food choices, but I will focus on just four that I judge to be the most pertinent:

- conformity to tradition,
- desire for variety,
- nutritional beliefs, and
- concern about food-health relationships.

Traditional cooking patterns tended to evolve from centuries of experimentation with locally available ingredients, cooking and storage methods that fulfilled the demands of work and leisure. Traditional diets

used food materials that were low cost and limited in variety by today's standards, but generally met minimal standards of nutrition.[5] Customary cuisines are part of a socialization process for a culture; repetitive experience with the tastes and methods of preparation makes traditional foods a standard against which all foods are judged. Thus it is that Northern American cooking still most resembles British cooking.[6]

Food choices are affected by the functions played by meals in family life. The daily ritual of meals eaten together is known to relieve stress, provide a major forum for familial communication, and reinforce the group identity of the nuclear family (Morris 1988). In 1940, the average U.S. family shared an average of more than two traditional meals per day (Shapiro and Bohmbach 1978). Based on responses from a panel of 4,000 households in 1978, the National Household Menu Census found at-home eating was still the norm (Stowell 1979). Counting only the three main meal "occasions," the average person ate 72% of all possible meals at home and purchased 14% away from home (10% were skipped completely and 4% were prepared at home but eaten away from home). Thus, ignoring skipped meals, fully 80% of all meals are prepared and eaten at home, with breakfast above average (about 95%) and lunch below average (about 58%). The proportion of meal-occasions purchased away from home is highest for persons aged 6 to 17 years (17%) and declines with age (to 13% for 45-64 year-olds and to 9% for those over 64 years old).

Yet, the Menu Census shows a number of changes in eating habits occurred from 1963 to 1978. The number of foodservice meals eaten away from home increased by 50% per person, though even by 1978 less than 20% of the total tonnage of food and beverages was sold by foodservice establishments. Even more striking is the number of between-meal snack occasions, which is increasing by about 1% per year per person. Some individuals recorded as many as twenty meal and snack "food contacts"--a pattern of eating sometimes called

grazing. Grazing is particularly evident among the very young and very old, yet is increasing among mature adults as well. Grazing puts a premium on foods that can be prepared and eaten at the workplace (for example, while on the telephone or using a personal computer), while driving or walking on the street, or consumed at places of entertainment. Foods that can be eaten with one hand and provide instant gratification are most compatible with these new eating patterns.

Although ordinary meals are becoming simpler and less frequent in North America, there is also a contrary trend of rising interest in what might be called "ceremonial meals" (Shapiro and Bohmbach 1978). Cookbooks that explain elaborate, time-consuming recipes requiring diverse and unfamiliar ingredients continue to sell at high levels. Houses are being built or renovated with larger and better equipped kitchens. Catalogues and specialty shops selling sophisticated cooking equipment continue to proliferate. Wine tastings, classes, and TV shows have stimulated demand for higher priced wines.

Meals and snacks are becoming more similar in many ways. Fewer at-home meals are prepared using a conventional oven (only 15% in 1988) or stove top (47%)(Morris 1988). Microwave ovens are used for 14% of home meals. The number of items served per meal at home has declined steadily (Stowell 1979), while the size of snack servings has increased (for example, potato-chip bags are now 2.5 to 3.0 ounces, whereas originally the bags were 1.5 ounces). Breakfast food manufacturers encourage their products to be used as snacks, and cola drinks formulated with high caffeine especially as morning beverages are being marketed. Grazing and the blurring between meals and snacks is in a sense a return to atavistic patterns of eating associated with the hunter-gatherer stage of human civilization. As such, it is deplored as symptomatic of the decline of the nuclear family and blamed for departures from healthier nutrition (Stowell 1979, Morris 1988).

Regional and ethnic cuisines are habit-forming, resistant to change, but not unchangeable. The potato, tomato, sweet pepper, lima bean, vanilla, and cayenne pepper were all added to European cooking after their introduction from the New World in the 16th Century. This shows that even in traditional societies there are innovators willing to try new foods that offer greater variety and may be low-cost substitutes for traditional ingredients. In any traditional society there are some individuals willing to innovate. In the case of changes in food habits, it is likely to be higher income, more educated consumers who travel and eat away from home more frequently. New product acceptance by this group is likely to cause wider acceptance through demonstration effects. Changes in more basic eating patterns will come more slowly. The tendency for the main weekday meal to be lunch in many continental European countries is a pattern likely to persist for some time. However, the decline of the split work day may slowly force a change in this habit.

One universal tendency in both Northern America and Western Europe is heightened interest in nutrition and food safety issues (Wikstrom 1985; Stowall 1979; Gormley, et al. 1989). In the United States, these concerns have arisen because of bans of certain additives and preservatives (cyclamates, nitrites, red dye No. 2, etc.), adverse publicity on cholesterol and certain oils, and the listing of all additives in ingredient listings, many of which have forbidding scientific terms. There is little doubt that consumers are aware of food-health relationships and believe that they are acting on these beliefs. In a U.S. survey conducted in the mid 1970s, more than one-half of the respondents said that they are avoiding some foods considered "bad for health" (Shapiro and Bohmbach 1978). Most frequently mentioned were sweets, chips, and meat. Moreover, 20% of the respondents reported eating some foods that they do not like but believe are "good for health." A more recent study using the focus-groups approach found that 20%

of the population belonged to highly health-conscious households, a category that had more than doubled in size since 1971 (Morris 1988).

There appears to be greater convictions among consumers that careful eating habits are a form of preventative health care and may even extend life expectancies. Scientific opinion supports some of these views. Dietary changes can reduce obesity, but it appears that such changes can reduce certain cancers and heart diseases in only a small segment of the population that is in high-risk categories. Nutrition experts recommend only modest consumption of varied foods drawn in a balanced way from major food groups as the route to a healthy life and decry the tendency among some consumers to adopt extreme dietary measures (such as zero-fat, meat-only, or grain-only diets). Despite the new interest in nutritional issues, the effects on aggregate foods purchasing behaviors has been modest at best. It is quite likely that most consumers still give a higher priority to food as a source of calories and pleasure than to food as a source of either extended life or a danger to human life.

Nevertheless, there is a substantial group of consumers, typically higher educated and higher income, that is more easily persuaded by nutritional perceptions of new food products. Especially if there is no perceptible reduction in taste, organoleptic properties, and feelings of satiety, this target group of consumers would prefer foods that are lower in calories, salt, nonnutritive additives, colorants, sugar, and fats (especially animal fats); they are also seeking foods with more complex carbohydrates, vegetable fibers, and retention of "fresh" flavors. There is some evidence that foods sold in metal containers are regarded as inferior to frozen, refrigerated, or unprocessed versions. Some consumers regard honey, corn fructose, and fruit fructose concentrates as healthier alternatives to refined sucrose. Other consumers avoid products with cottonseed or palm oils, while others have strong preferences to polyunsaturated vegetable oils. Health concerns have

slowed demand for coffee and many high-alcohol beverages. There is some concern about inadequate dietary amounts of calcium, iron, folic acid, and other vitamins and minerals.

Food scientists tend to rank microbiological spoilage, food toxins, nutritional degradation and composition, natural toxicants, and environmental contamination as the major hazards facing the food supplies of developed industrialized countries (Gormley, et al. 1989). Except for environmental contaminants, the popular press and the average lay person do not place these concerns high on their list of worries. Rather, the average consumer is apparently most concerned about pesticide residues in plants, hormone and antibiotic residues in animal products, and the use of such food additives as preservatives, synthetic colorants, and synthetic flavorings. While most scientists believe such concerns are overrated, they admit that there are some genuine hazards from additives (allergic reactions, hyperactivity in children) and that there is a lack of knowledge about long-term ingestion and interactive effects among additives and agricultural chemicals. These concerns point to reduced demand for red meats and processed red meat products in the future. Depending on how high a price premium must be paid, a significant segment of consumers will want to purchase foods raised without pesticides, antibiotics, or growth hormones. Growth in the sales of such foods will require implementation of credible testing or certification programs.

Conclusions

We return now to the basic question being addressed in this paper: Is Northern America a reference model for food demand patterns in Western Europe? That is, do the food-purchasing patterns observed in the recent past in Northern America anticipate the patterns that will be observed in Western Europe?

On the whole, the evidence supports an affirmative answer to this question. With one exception, trends in the determinants of food expenditures (both the total amount and the mix of expenditures) either occurred earlier in Northern America (ten cases) or appear to be parallel in the two geographic areas (nine cases) (Table 3). The one exception is that slowing population growth has been a historical feature of Western European demographics for a longer time than in Northern America. Northern America experienced an unanticipated "baby boom" from about 1950 to 1970 that was absent in Western Europe; since 1970 natural fertility rates have been similar, but Northern America has had higher rates of net immigration.

Slowing population growth mainly affects total food demand rather than per capita food consumption. In the 1990s, real food expenditures in Western Europe will grow on average about 0.5% per year slower than Northern America. However, the relative growth in (per capita) food expenditures in Northern America in the 1970s and 1980s should be observed in Western Europe in the 1990s and perhaps beyond.

I offer two tables of data on changes in U.S. food demand that may well presage similar changes in Western Europe. Table 4 is drawn from an ambitious scientific study of predicted real food expenditures for the USA for the years 1980 to 2010 (Blaylock and Smallwood, 1986). This study incorporate information from detailed household food expenditures in 1980 and several predicted demographic changes in the U.S. population. Two income scenarios are offered: the "low-income-growth" scenario assumes that incomes will rise by 1% per year (which is a little lower than actual growth in the 1980s) while the "high-income-growth" scenario assumes 2% real income growth (which is the actual 1940-1985 U.S.-growth rate). If the projections in Table 4 are correct, per capita real expenditures on food will slow to 0.4% to 0.8% per year, depending on future household income increases.

Table 3. Correspondence between Northern America and Western Europe in the Determinants of Household Food Demand

Relationship	Determinants and Trends
Northern America **LEADS** Western Europe	Higher household disposable income Higher education levels Ownership of Kitchen Equipment Ownership of Televisions Ownership of Automobiles Ethnic pluralism Advertising intensity Dual-career families Women in the work force Eating away from home
Northern America **PARALLELS** Western Europe	Food prices falling relative to other prices Size of households falling Number of single-person households rising Age of consumers rising Strong food habit-persistence Desire for variety Rising nutritional concerns Rising health-food beliefs
Western Europe **LEADS** North America	Slowing population growth

Many of the themes expressed here are illustrated by these growth figures. Income growth does have a positive effect on per capita food expenditures; when income growth doubles, spending on alcoholic beverages, convenience foods (in miscellaneous), and especially food away from home more than doubles (Table 4). Some foods appear to be "inferior" goods (see eggs). Many foods served to children will experience relatively low per capita growth, such as milk and sweets. Finally, several foods that have been held to be nutritionally suspect seem to have low growth prospects (processed meats, eggs, sugar, and oils), while foods like fish, fruits, and vegetables seem to have bright growth prospects. Table 4 is limited by not incorporating changes in relative prices or in preferences.[7]

Table 5 shows recent growth rates in U.S. domestic processed food production from 1972 to 1987. These quantity increases are available at a finer level of detail than the expenditure data in Table 4. Also, unlike Table 4, Table 5 contains quantities shipped to foodservice operations and institutional feeding as well as grocery stores. Unfortunately these data are distorted by foods that are exported (e.g., rice) or imported (wine, whiskey). These data represent <u>total</u> growth in demand, about half of which (1.0% per year) was due to population increase and the rest (1.2%) due to per capita spending increases.

The more detailed data in Table 5 also illustrate many of the determinants of food demand we have discussed. Declining interest in preparation at home adversely affected demand for flour, flour mixes, sugar, shortening, cocoa, and other cooking ingredients. However, highly prepared and convenient items grew very fast (pasta, crackers, cheese, processed meats,

Table 4. Predicted Per Capita Real Household Food Expenditures, United States of America, 1980-2010.

Food Category	Low Income Growth	High Income Growth
	Percent Increase	
Food at Home:	10.8	18.1
Beef	11.2	19.9
Pork	12.3	17.0
Other red meat	6.9	12.5
Poultry	10.7	12.4
Fish	18.4	33.5
Eggs	5.3	4.4
Milk and cream	1.5	2.3
Cheese	11.0	22.0
Other dairy products	9.6	17.2
Fresh fruits	13.8	25.6
Processed fruits	11.7	19.8
Fresh vegetables	15.1	24.2
processed vegetables	12.0	19.1
Sugar and sweeteners	7.2	11.5
Grain products	7.5	12.4
Butter	11.6	25.2
Margarine	9.4	9.8
Other fats and oils	8.9	13.8
Nonalcoholic beverages	7.4	11.8
Alcoholic beverages	14.7	42.6
Miscellaneous foods	8.7	17.4
Food Away from Home	16.5	42.2
Total Food and Beverages	13.7	28.0

Note: Based on "middle series" population growth projections and projected changes in age, regional residence, and race.

Source: Blaylock and Smallwood (1985).

Table 5. Growth in Production of Processed Consumer Foods, United States of America, 1972-1987.

Food Categories	Growth in Value of of Production	
	1972-1982	1982-1987
	Percent per Year	
Red Meats:		
Beef, chilled	-1.2	-0.6
Pork, chilled	0.2	2.1
Processed beef and pork	6.0	4.4
Poultry and Eggs:		
Chickens	3.8	4.1
Turkeys	1.7	-0.5
Processed poultry products	12.1	13.7
Processed eggs	-1.3	7.4
Fish:		
Fresh packaged seafood	7.5	7.1
Frozen fish fillets and shellfish	3.3	7.5#
*Canned and cured seafood	-0.4	8.3
Dairy Products:		
Butter	1.4	-2.5
Natural cheese	7.6	5.4
Process cheese and substitutes	1.9	6.6
*Dried milk powder	2.1	4.4
Canned milk	1.9	-6.4
Ice cream and frozen desserts	1.8	4.1
Fluid milk and cream	0.4	1.1
Cottage cheese, buttermilk, and yogurt	2.8	3.8
Fruits and vegetables:		
Canned fruits	0.7	----
Canned (dry) beans	0.9	3.3
Canned vegetables	2.3	----
*Dried fruits and vegetables	2.2	3.8
Pickles	-0.8	11.3
Grains:		
*Flour	1.5	7.4
*Rice[1]	3.6	5.6
Pasta[1]	4.8	2.8
Flour mixes and doughs	2.5	-4.8
Sweeteners:		
Cane sugar	-1.9	2.6
Beet sugar	-2.0	-4.0
Fructose syrup	----	11.8

Table 5. (Continued).

Oils:		
Shortening and cooking soils	0.9	-2.0
Margarine	-0.8	-4.7
Bakery Products:		
Bread	0.4	2.8
Rolls	3.6	5.1
Crackers	3.1	4.5
Cookies	-0.3	11.7
Confectionery:		
Chocolate confectionery	2.5	6.1
Nonchocolate confectionery	3.6	4.8
Nuts, glace fruits, seeds	3.1	2.4
Chewing gum	-0.3	----
Sweetening syrups	-1.3	1.8
Frozen Foods:		
Frozen fruits and juices	1.9	3.8
Frozen vegetables	4.0	3.8
Frozen specialties (except seafood)	2.5	8.4#
Beverages:		
Canned fruit juices	5.1	----
Canned vegetable juices	-1.3	2.8#
Beer	3.8	-3.2
*Wine	4.7	1.5
*Spirits	0.1	-4.8
Soft drinks	4.7	----
Roasted coffee	-0.3	----
Soluble coffee	1.5	-8.0
Tea	1.2	2.2
Cocoa	1.6	-6.2
Drink powders	6.9	-10.8
Highly Prepared and Convenience:		
Breakfast cereals	4.1	2.2
Canned baby foods	-0.2	-9.0
Canned soups	1.5	4.0#
Other canned ethnic specialties	3.1	6.2#
Catsup and tomato sauces	6.2	6.8#
Other prepared sauces	----	5.6
Dried soup mixes	-1.8	6.7#
Dog and cat food	3.7	0.9
Ready-to-mix desserts	-3.5	16.4
Chips and snacks	4.5	4.2
Dry prepared entrees[1]	----	12.9#
Chilled tortillas, tamales, other Mexican foods	----	13.0#
Refrigerated prepared salads	----	13.1#
Frozen seafood entrees[2]	----	16.3#
Total Foods and Beverages	2.2	2.9E

Table 5. (Continued).

---- = Not available E = Estimated # = Growth in sales.

*Data affected by U.S. exports or imports.

[1]Prepared entrees based on rice or pasta placed in their own product class in 1987.

[2]Includes surimi, soups, cakes, dinners, and other frozen foods.

Sources: Connor (1988: Table 9-7) and 1987 Census of Manufactures: Industry Series, (Table 6a).

breakfast cereals, sauces frozen foods, and dry prepared entrees are examples). An older population with fewer children adversely affected the growth of milk, chewing gum, baby foods, and perhaps coffee. A desire for freshness and variety is seen in the rapid growth of categories where most new product development is taking place (processed poultry, process cheese, frozen specialties, and most highly prepared items); most canned items appeared to have suffered slow growth (compare canned fish with fresh fish, canned vegetables with frozen, and so on).

Table 5 also demonstrates the schizophrenic behavior of consumers with respect to the new attitudes toward nutrition, and especially concerns about sugars, animal fats, salt, and caffeine. While it is true that production of granulated cane and beet sugar have declined sharply since 1972, other nutritive sweeteners such as fructose have increased. Moreover, per capita consumption of all types of sugar continue to rise through their incorporation into other sweetened foods. Note the substantial increases in production of ice cream, cookies, soft drinks, ready desserts, and confectionery of all types. Production of fatty foods presents similar anomalies. It is true that poultry has rapidly substituted for higher-fat beef and pork, but that seems attributable mainly to the relatively lower prices of poultry products. It is also true that butter,milk, and cream production has stagnated, replaced in part by cottage cheese, yogurt, and other low-fat dairy products, Yet, relatively high fat cheeses continue to rise rapidly. Salty processed meats, snacks, pickles, and nuts also are being consumed in ever-larger amounts. Caffeine-containing coffee production has fallen rapidly in recent years, but only to be replaced in part by tea, itself a source of caffeine. The swing in public attitudes in the early 1980s against alcohol consumption show up quite well in the rapid declines in output of beer and spirits and a slowing down of growth in wine production. Consistent with nutrition concerns are the

increases in output of seafood, fruits and vegetables, rice, pasta, and baked goods.

Part of the contradictory trends observed (when gauged against stated nutrition concerns) can be ascribed to the other determinants of demand for food. High fat, sugar, or salt are sources of pleasure in food, particularly its organoleptic qualities; this is one aspect of habit-persistence in food consumption. Many of the nutritionally suspect food categories with high growth contain novel or highly convenient foods--breakfast cereals and snacks, for example. However, a major influence producing these nutritionally paradoxical trends is the rise in eating away from home, especially eating in fast-food restaurants. These restaurants typically serve beef or chicken sandwiches with prepared sauces, pizza, fried potatoes and many other fried foods, pickles, potato chips, sweet milk drinks and soft drinks, and desserts. Hence, the large increases in production of rolls and "other sauces" (for sandwiches); flour, cheese, and tomato sauces (for pizza); pickles; frozen vegetables (mostly potatoes); chips; dry milk powder (for milk drinks); and soft drinks. In 1977, foodservice items accounted for only about 15% of the value of all U.S. processed foods and beverages (Connor, et al. 1985); today the share has likely surpassed 20%.

Blandford (1984) verified that for the period 1956-1978, the per capita apparent food consumption trends were converging among the more advanced OECD countries. However, he did not address the sources or the mechanisms by which this convergence in food habits was talking place. In this paper, I have argued that one the major forces behind this convergence are the largely parallel trends in the universal determinants of food demand: the orthodox economic factors of household income, relative prices, and certain demographic changes, plus the newer concerns by consumers about the nutritional impacts and preventative health possibilities of dietary habits. Furthermore, I have documented the fact that in the 1970s and 1980s, the changes in about 20

determinants of food purchases in Northern America usually preceded or at least paralleled the changes in the same determinants in Western Europe. (Showing population growth is the one exception). Therefore, it is safe to say that, by and large, historical per capita real food expenditures trends in Northern America are good predictors of current or future trends in Western Europe. Although frankly speculative, I have argued that it is the operations of foreign direct investments and international trade between Northern America and Western Europe that accounts for these transfers, though similarities in cultural outlook and demonstration effects (via tourism, reading, shared mass media, etc.) cannot be dismissed.

STATISTICAL APPENDIX

Table A1. Population Growth Rates, 1970-1980 and 1990-2000 Projections.

	Average Annual Change	
Country	1970-1980	1990-2000
USA	1.0	0.8
Canada	1.2	0.8
Belgium	0.2	0.0
Denmark	0.4	-0.2
Finland	0.4	0.2
France	0.6	0.3
Italy	0.5	0.1
Netherlands	0.8	0.1
Norway	0.5	0.0
Spain	1.0	0.7
Sweden	0.3	-0.1
United Kingdom	0.1	0.1
West Germany	0.1	-0.2
European Average	0.45	0.09

Source: U.S. Census Bureau (1986:835-39).

Table A2. Vital Statistics, 1989 and 2000.

Country	Fertility Rate per 1,000 Women		Life Expectation at Birth	
	1989	2000	1989	2000
USA	1.87	1.86	75.4	76.7
Canada	1.69	1.70	77.2	79.3
Denmark	1.52	1.70	75.5	77.5
France	1.79	1.70	75.9	77.3
Italy	1.48	1.70	76.8	78.0
Netherlands	1.56	1.70	77.2	78.8
Spain	1.73	1.70	77.3	78.5
Sweden	1.73	1.70	77.4	78.6
UK	1.77	1.70	75.3	76.9
West Germany	1.40	1.70	75.9	77.2
European Average	1.62	1.70	76.4	77.9

Source: U.S. Bureau of the Census (1990:835-836).

Table A3. Gross Domestic Product per Person, Purchasing Power Parities, 1970-1987.

Country	1970	1980	1987
		Dollars	
USA	4,922	11,804	18,338
Canada	3,893	10,959	17,211
Denmark	3,468	8,460	13,329
Finland	2,861	7,948	12,838
France	3,278	8,690	12,803
Italy	3,028	7,967	12,254
Netherlands	3,454	8,620	12,252
Norway	3,063	9,390	15,405
Spain	2,203	5,702	8,681
Sweden	3,801	9,077	13,771
UK	3,219	7,852	12,340
West Germany	3,380	8,838	13,323
European Average[1]	3,176	8,254	12,700

[1]The average of all European members of the OECD was $2,849; $7,266; and $10,934, respectively.

Source: U.S. Census Bureau (1990:841).

Note: Purchasing Power Parities (PPPs) are meant to show how many units of currency are needed in one country to buy the same amount of goods and services which one unit of currency will buy in another country. Dividing GDP by PPPs instead of exchange rates allows the amounts of goods and services produced in different countries to be compared with a common set of international prices; the resulting GDP more accurately reflects consumer purchasing power (standards of living) across countries.

Table A4. Food and Beverage Expenditures as a Proportion of Total Private Expenditures, 1986.

Country	Food at Home	Beverages		Food and Beverages
		Nonalcoholic	Alcoholic	
	Percent			
USA	10.4	0.6	1.3	12.3
Canada	11.5	0.6	3.0	15.1
Denmark	16.4	0.6	3.5	20.5
France	16.8	0.5	2.1	19.4
Italy	21.5	0.3	1.3	23.1
Netherlands	14.4	0.5	1.9	16.8
Norway	18.9	1.0	2.9	22.8
Finland	18.8	0.5	4.0	23.3
Sweden	17.9	0.4	3.4	21.7
Switzerland	20.2	1.2	4.1	25.5
Spain	26.2	0.4	1.1	27.7
UK	13.7	0.6	1.9	16.2
West Germany	16.8	0.6	3.1	20.5
European Average	18.3	0.6	2.7	21.6

Source: U.S. Census Bureau (1990:842), developed by Economic Research Service, USDA from United Nation's annual National Accounts Statistics.

Table A5. Household Food and Beverage Expenditures per Capita, 1986.

Country	GNP per Capita	After-tax GNP per Capita	Food and Beverages				
			Food at Home	Beverages	Alcoholic Beverages	Food Away from Home	Total
			Dollars				
USA	18,185	12,911	1,343	77	168	826	2,414
Canada	15,165	10,161	1,168	61	305	---	-----
Belgium	15,185	8,291		1,926		240	2,166
Denmark	20,316	10,930	1,793	66	383	568	2,809
France	15,380	8,521	1,431	43	179	648	2,301
Finland	20,912	13,551	2,548	68	542	---	-----
Italy	12,685	7,535	1,620	23	98	806	2,547
Netherlands	14,395	7,586	1,092	38	144	387	1,661
Norway	21,511	11,487	2,171	115	333	505	3,124
Spain	7,030	5,118	1,341	20	56	757	2,174
Sweden	18,120	8,969	1,606	36	305	431	2,378
UK	11,360	7,066	968	42	134	438	1,582
West Germany	18,110	11,337	1,905	68	351	---	-----
European Average	15,909	9,126	1,647	52	253	531	2,305

-- = Not available.

Sources: U.S. Census Bureau (1986:846; 1990:840); Table A4; Table A17.

Table A6. Households Owning Selected Appliances, 1987.

Country	Dishwasher	Food Processor	Separate Freezer	Refrigerator	Microwave Oven
			Percent		
USA[1]	43	80E	40E	86	61
Belgium	18	86	56	94	8
Denmark	21	81	62	84	6
Finland	13	69	51	97	5
France	24	78	34	97	8
Italy	20	22	42	88	10
Netherlands	8	81	47	98	15
Norway	--	67	78	85	16
Spain	10	48	16	94	2
Sweden	28	70	68	96	16
UK	7	57	65	93	30
West Germany	74	87	78	91	16
European average	22	68	54	92	12

-- = Not available.

[1]Owned and generally used.

Source: Euromonitor (1988), U.S. Census Bureau (1990:843).

Table A7. Radio and Television Ownership, 1987.

Country	Television Receivers	Radio Receivers
	Number per 1,000 Population	
USA	811	2,119
Canada	577	953
Denmark	386	451
France	333	893
Italy	257	786
Netherlands	469	908
Sweden	395	875
UK	434	1,145
West Germany	385	954

Note: For some countries, number of licenses issued. In these cases, some undercounting may occur.

Source: U.S. Census Bureau (1990:844).

Table A8. Retail Price Changes for Food and All Consumer Goods, 1977-1986.

Country	Food	Total	Total Divided by Food
		Percent	
USA	66	81	123
Canada	---	---	---
Belgium	51	66	129
Denmark	91	106	116
France	112	121	108
Finland	98	102	104
Italy	181	219	121
Netherlands	26	42	162
Norway	113	107	95
Spain	183	210	115
Sweden	136	115	85
UK	82	112	137
West Germany	26	36	138
European average	100	112	112

Source: Euromonitor (1988:334-35); U.S. Census Bureau (1990:471).

Table A9. Annual Price Change for Selected Consumer Goods, 1980-1988.

Country	Food[1]	Clothing	Housing	Transportation	Total
			Percent		
USA	3.9	3.0	4.9	3.4	4.6
Canada	5.3	4.2	6.2	6.8	6.2
France	6.8	7.7	7.1	7.1	7.0
Italy	9.5	11.1	10.6	10.0	10.5
Netherlands	1.8	1.6	3.4	3.0	2.6
Sweden	9.1	4.5	6.8	---	7.3
UK	4.7	2.0	7.4	5.1	6.1
West Germany	2.0	2.7	2.6	2.5	2.6

[1]Includes restaurant meals, alcoholic beverages, and tobacco for some countries; excluded for others.

Source: U.S. Census Bureau (1990:846).

Table A10. Health Expenditures, 1980 and 1987.

Country	Percent of GDP		Per Person	Public Health Expenditures Relative to Total
	1980	1987	1987[1]	1987
	Percent		Dollars	Percent
USA[2]	9.2	11.2	2,051	41
Canada	7.4	8.6	1,483	75
Belgium	6.6	7.2	879	77
Denmark	6.8	6.0	792	86
Finland	6.5	7.4	949	79
France	7.6	8.6	1,105	78
Italy	6.8	6.9	841	78
Netherlands	8.2	8.5	1,041	78
Norway	6.6	7.5	1,149	98
Spain	5.9	6.0	521	72
Sweden	9.5	9.0	1,233	91
UK	5.8	6.1	758	87
West Germany	7.9	8.2	1,093	77
European Average	7.1	8.1	942	82

[1]Purchasing power parity basis.

[2]In 1988, Americans spent $443 billion on medical care, including payments for health insurance. This was 13.7% of personal consumption expenditures in 1988. By contrast, food and beverages expenditures totaled $550 billion, or 17.0% of personal consumption expenditures. In the 1980s medical expenditures increased at 11% per year (5% per year in real terms).

Source: U.S. Census Bureau (1990:839).

Table A11. Mass-Media Advertising, 1986.

Country	Total 1986		Change in Value 1982-86	Distribution		
	1986	Per Capita		TV	Print	Radio, Outdoor, Cinema
	$ Mil.	Dollars	----------	Percent	----------	
USA	90,493	375	+49	25	66	9
Belgium	558	56	+54	12	69	18
Denmark[1]	652	127	+60	0	96	4
France	4,426	80	+71	27	48	25
Finland	991	202	+70	12	86	3
Italy	3,029	53	+117	49	41	9
Netherlands	1,713	118	+26	11	80	9
Norway[1]	629	151	+64	0	97	3
Spain	2,249	58	+124	31	50	18
Sweden[1]	962	115	+69	0	96	4
UK	7,506	132	+64	33	61	6
West Germany	6,199	102	+19	11	79	9
European average	2,629	109	+67	17	73	10

[1]No radio or television advertising.

Source: Euromonitor (1988:297); U.S. Census Bureau (1990:557).

Table A12. Average Size of Private Households, 1970, 1980, and 1986-88.

Country	Number of Persons per Household		
	1970	1980	1986-88
USA:			
Total	3.23	2.81	2.71
(White, non-Hispanic)	(3.17)	(2.76)	(2.65)
Belgium	2.99	2.80	2.60
Denmark	2.70	2.36	2.23
Finland	3.07	2.55	2.28
France	2.95	2.67	2.51
Italy	3.30	3.06	3.03
Netherlands	3.05	2.68	2.45
Norway	2.94	2.75	2.44
Spain	3.14	2.73	2.56
Sweden	2.57	2.20	2.16
UK	2.90	2.68	2.57
West Germany	2.74	2.40	2.16
European average	2.94	2.63	2.45

Sources: Euromonitor (1982, 1988), U.S. Census Bureau (1990).

Table A13. Adult Households without Children, circa 1970s and 1980s.

Country (Years)	1970-76			1980-87		
	Single	Couples Without Children	Total	Single	Couples Without Children	Total
USA (1970, 1980)	10.9	44.1	55.0	18.3	47.9	66.2
Belgium (1970, 1981)	10.2	----	----	23.2	----	----
Denmark (1976, 1987)	18.4	53.2	71.6	32.7	----	----
Finland (1970,1980)	18.4	----	----	23.0	----	----
France (1975, 1984)	22.2	----	----	24.2	----	----
Italy (1981)	----	----	----	17.8	----	----
Netherlands (1981)	----	----	----	21.2	----	----
Spain (1975, 1986)	10.0	----	----	12.0	----	----
Sweden (1975, 1980)	30.0	----	----	11.5	----	----
UK (1970, 1980)	18.0	39.0	57.0	22.0	37.0	59.0
West Germany (1985)	----	----	----	33.6	----	----

Source: U.S. Census Bureau (1986: 40,44), Euromonitor (1982, 1988).

Table A14. Female Labor Force Participation, 1980 and 1988.

Country	15-19 Years		20-24 Years		25-54 Years		55-64 Years		65 + Years	
	1980	1988	1980	1988	1980	1988	1980	1988	1980	1988
	Percent									
USA	52	54	69	73	64	73	41	43	8	7
Canada	52	56	73	76	60	73	34	35	4	4
France	18	10	67	61	63	71	40	32	3	2
Italy[1]	29	24	58	63	40	48	11	10	4	2
Sweden	56	50	82	81	83	91	55	65	4	5
UK	75	77	68	70	63	70	39	37	4	3
W. Germany	41	40	68	76	54	61	27	25	3	2
European Average	44	40	69	70	61	68	48	34	4	3

[1]Fifth and sixth columns for persons 25-59 years old; next two columns for persons 60-64 years old.

Source: U.S. Census Bureau (1990:848).

Table A15. Male Labor Force Participation, 1980 and 1988.

Country	15-19 Years		20-24 Years		25-54 Years		55-64 Years		65 + Years	
	1980	1988	1980	1988	1980	1988	1980	1988	1980	1988
					Percent					
USA	61	57	86	85	93	93	71	66	18	16
Canada	58	59	86	85	95	94	76	67	15	11
France	26	16	80	71	96	96	69	47	8	5
Italy[1]	33	28	73	70	93	91	70	37	13	8
Sweden	55	45	85	84	95	95	79	75	14	19
UK	74	78	86	86	95	94	82	68	10	8
W. Germany	47	45	79	81	94	94	66	60	7	5
European Average	47	42	81	78	95	94	73	57	10	9

[1]Fifth and sixth columns for persons 25-59 years old; next two columns for persons 60-64 years old.

Source: U.S. Census Bureau (1990:848).

Table A16. Proportion Female Civilian Employment, 1970-1988.

Country	1970	1980	1985	1987	1988
			Percent		
USA	37.7	42.4	44.1	44.8	45.0
Canada	33.6	39.7	42.7	43.4	43.8
France	36.0	39.5	41.4	42.0	----
Italy[1]	27.7	31.7	32.8	33.8	33.9
Netherlands	----	30.3	34.0	36.0	----
Sweden	39.5	45.2	47.2	47.8	47.9
UK	36.7	40.4	41.7	42.5	42.5
W. Germany	36.5	38.0	38.9	39.4	39.6
European Average	35.3	37.5	39.3	40.3	41.0

--- = Not available.

Source: U.S. Bureau of the Census (1990:847).

Table A17. Food and Beverages Purchased for Away-From-Home Use by Consumers, 1975, 1980, and 1985-86.

Country	Proportion of Total Expenditures			Proportion of Total Food & Beverage Expenditures		
	1975	1980	1985-86	1975	1980	1985-86
			Percent			
USA	5.0	5.8	6.4	25.0	29.3	39.6
Belgium	2.8	2.8	1.9	9.6	10.2	7.5*
Denmark	1.5	---	4.3	6.1	----	16.8*
France*	3.4	3.5	4.0	11.5	12.5	15.0*
Italy	---	---	10.1	----	----	24.6*
Netherlands*	1.7	1.8	3.3	7.1	8.2	14.4*
Norway	1.7	1.7	2.4	5.8	6.0	14.8*
Spain	5.7	---	13.6	12.8	----	31.9*
Sweden	---	---	2.4	----	----	13.3*
UK	3.0	3.6	4.2	9.7	12.2	15.4*

*Includes hotel services expenditures by both local residents & tourists.

-- = Not available.

Sources: Euromonitor (1982, 1988); U.S. Census Bureau (1990:430).

Note: The above European percentages were reduced by the share of per capita total consumer expenditures on food away-from-home accounted for one-fourth of tourist per capita receipts in 1986. For the countries above, these shares were: Belgium 33.8%, Denmark 17.5%, France 46.8%, Italy 5.7%, Netherlands 36.2%, Norway 45.6%, Spain 8.3%, Sweden 50.0E%, and UK 32.8%. This approach assumes that no tourists and visitors spend money for food in grocery stores.

Table A18. Proportion of Population Aged 20 to 29 Attending University, mid 1980s.

Country (Year)	Population 20 to 29 Years Old	Number of University Students	Proportion Attending University
	Thousands		Percent
USA (1984)	42,620	12,247.0	28.7
Canada	------	-------	----
Belgium (1986)	1,568	103.6	6.6
Denmark (1986)	788	88.8	11.3
France (1986)	8,513	983.5	11.6
Finland (1986)	761	92.2	12.1
Italy (1986)	9,095	1,173.9	12.9
Netherlands (1986)	2,499	172.3	6.9
Norway (1986)	632	42.4	6.7
Spain (1986)	6,977	581.6	8.3
Sweden (1986)	1,153	153.9	13.4
UK (1986)	9,025	345.8	3.8
West Germany (1986)	10,068	1,311.5	13.0

Source: Euromonitor (1988:112, 132, 360); U.S. Census Bureau (1986).

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Notes

1. These relationships are studied by using cross-sectional data and fitting Engle equation. See, for example, Baylock and Smallwood (1986).

2. This list includes only factors that bear predictable relationships to food demand. Wars, weather, government policies, and unanticipated inflation have nonpredictable effects on food prices and household incomes, but in the long run income, prices, and demographic factors overwhelm such distrubances.

3. See Table A10, footnote 2. A simple linear extrapolation from 1988 using 1980s rates of growth in the USA will cause health expenditures to surpass food by the end of 1992.

4. Casual observation of the mix of ethnic restaurants found in the major cities of Europe suggests that there is more acceptance of foreign cuisines in Sweden, the Netherlands, and the United Kingdom than in Italy, for example.

5. Some "traditional" diets did lead to long-term health problems for some of the population: iodine deficiency caused goiter problems in the 19th century in Switzerland and the spread of pellegra when maize was introduced in Italy and Spain in the 18th Century are well-known cases. It is interesting to note that the truly traditional maize-based diets of Meso-America avoided pellegra by boiling their corn flour in a lime solution. The alkaline treatment restores the amino acid balance in corn and releases its niacin (McGee 1984).

6. The unfortunate persistance of cooking methods is illustrated by McGee (1984). British cooking has only slightly unjustly been accused of having but one sauce since at least the 16th century: "gravy," a quick sauce made from roast drippings, flour, and a liquid. French cooks at the time also made the same sauce (called "grane"), but soon dropped it and added many others instead (bechamel, veloute, hollandaise, tomato, espangole, etc.).

7. The results for beef, pork, and butter seem too high, where growth for poultry, grain products, and beverages is too low.

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