World Meat Consumption and Trade Patterns

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Since the late 1970's, global production of meat products has increased by approximately 26 percent. However, population growth and uneven consumption patterns have pushed per capita meat consumption up 12 percent.

Over the past 10 years, both the mix of meat products and actual levels of per capita consumption within many nations changed dramatically. Improved technologies and infrastructure development expanded production and trade in meat products. At the same time, changing lifestyles, incomes, and a growing awareness of health issues related to meat consumption altered the patterns of demand worldwide.

Poultry Led Meat Production Gains

Meat output in the major producing countries increased 32 percent from 1975 to 1987. The predominant meat-producing animals are cattle, hogs, poultry (predominantly chickens, turkeys, and ducks), and sheep. In some areas, rabbit, wild game, and other small animals are significant contributors to dietary protein, as is fish.

Poultry was the biggest gainer, up 106 percent since 1975. However, at 29 million metric tons, it only accounted for 21 percent of all meat produced in 1987, compared with 16 percent in 1975. The largest quantity of meat produced worldwide is still pork, followed by beef.

The United States, with about 30 percent of total world output, is the major poultry producing nation. The countries of the European Community (EC)—Belgium, Denmark, France, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, United Kingdom, and West Germany—produce about 20 percent, followed by the USSR, Brazil, and Japan. One reason for poultry's rapid gain is that it takes less time and feed to produce a pound of poultry than other grain-fed meats. Therefore, producers can respond quickly to changes in demand. It also means that in some countries poultry is relatively cheaper than other meats.

Pork output rose 50 percent from 1975, increasing its share of meat produced at the expense of beef. Pork production in 1987 reached 58 million metric tons, while beef hit 45 million. In 1975, pork accounted for 39 percent of meat output, compared with 43 percent in 1987. China, with about one-third of the world's output, is by far the largest pork producer. The United States is second, with about 12 percent of the output. The USSR follows with 11 percent. Together, the 12 countries of the EC produce slightly less than the United States and the Soviet Union combined. Other major producing nations are in Eastern Europe and the Pacific Rim.

In some developed countries, intensive farming operations—producing hogs under confinement, for example—dominate pork production. Hogs are fed mixed feed rations made predominately of grain and oilseed meals. However, many producers in those regions still raise hogs in more traditional ways. In other countries, such as Poland and China, producers depend on alternative feeds, like potatoes or crop residue, in addition to grain.

Beef production grew 9 percent during 1975-87, much more slowly than

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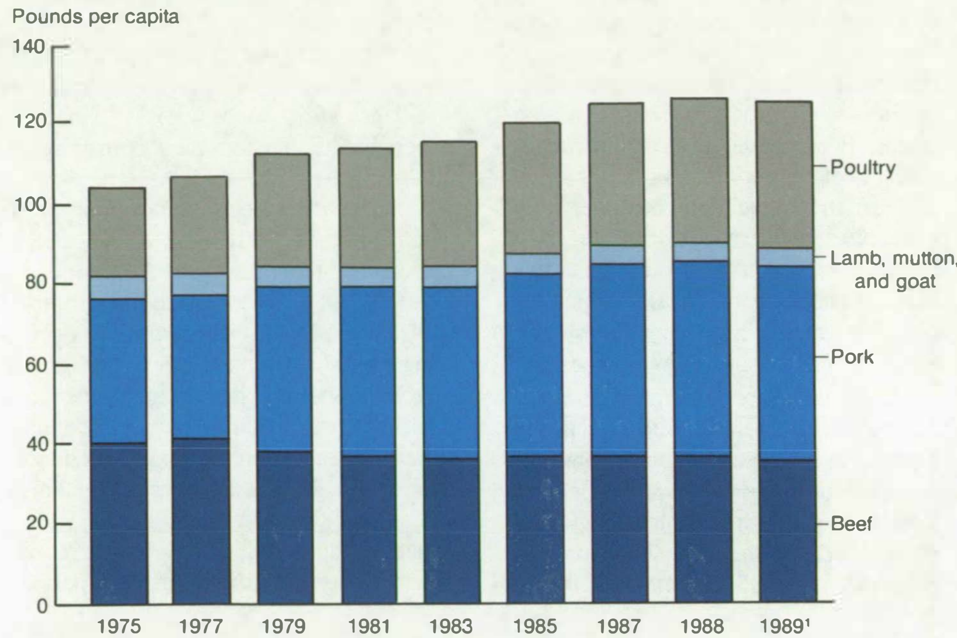
pork or poultry. As a result, beef's share of total output fell from 41 to 33 percent. Like sheep, cattle are ruminants and can eat feeds other animals are unable to digest. In the United States, about 75 percent of a cattle's weight is from forage, with the rest added by feeding a grain-based finishing ration for 4 to 5 months to bring the animal to marketable weight. While this type of system is common in the United States, Canada, Japan, and to a limited extent, other countries, most of the world's beef output comes exclusively from forage and improved pasture systems.

The United States is the predominant beef producer, with about 24 percent of the world's output. Next is the USSR, with about 18 percent. Argentina and Brazil account for approximately 6 and 5 percent, respectively. The EC countries account for about the same amount as the USSR.

Figure 1. Global Meat Consumption Has Risen in Recent Years



[1]Forecast.

Source: Foreign Agricultural Service.

Meat Consumption Trends

On a per capita basis, world meat consumption grew 21 percent between 1975 and 1988 *(figure 1)*. At 246 pounds per capita (carcass weight), people in the United States and Hungary are the largest consumers of meat, followed by those in Australia (234 pounds), and Canada and Belgium-Luxembourg (201 pounds). Regionally, people in the EC consume 170 pounds of meat per capita, while those in Eastern Europe eat 165 pounds. People in the Soviet Union average 139 pounds of meat annually.

Per capita pork consumption worldwide has increased 34 percent since 1975. This growth was led by a rise of 45 pounds per capita in Denmark and large increases in consumption in China and Taiwan. However, these large gains were offset by declines in Eastern Europe and stagnant demand in most other regions.

During the 1975-88 period, global beef consumption declined by just under 9 percent per capita. Much of this drop is due to lower consumption in major livestock producing regions, except the European Community, and stagnant demand in the rest of the world.

Poultry consumption has grown tremendously. Since 1975, per capita consumption worldwide has risen more than 61 percent. In Brazil and the Middle East, consumption climbed over 150 percent, while in the United States and the Soviet Union it increased over 60 percent.

Factors Affecting Demand for Meat and Meat Products

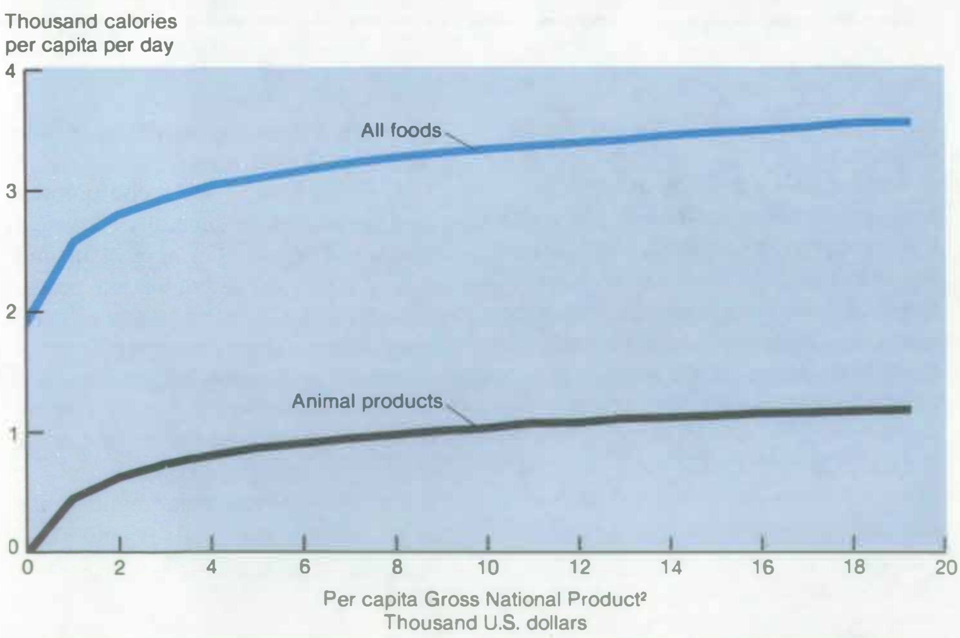
Over the past 13 years, consumption patterns shifted substantially because of a number of factors. Changes in income and lifestyles and in production, processing, and distribution all had an effect. In some instances, government policy affected the availability of a product or the ability of consumers to buy it. Together, these factors influence how consumers choose the meat products they eat.

Changes in income can significantly impact meat demand. As people's incomes rise, they tend to eat more meat *(figure 2)*. But demand increases only up to a certain income level, after that meat consumption tends to level off or even decline slightly. This phenomenon also applies to specific meats, either by type or cut. For instance, if a consumer considers beef "better" than pork, for a given increase in income, that consumer would probably switch from pork to beef. This occurs even if there is no change in the price of either good. Similar switching occurs between cuts—from hamburger to steak, for example—when incomes rise.

Thus, as the economy grows meat consumption shifts. In the Middle East and East Asia, increased incomes from rapid industrialization or oil revenues led to greater consumption of meat. In East Asia, per capita meat consumption has risen more than 95 percent since the mid-1970's. Among Middle Eastern countries per capita consumption climbed more than 37 percent during 1975-88. It is interesting to note that almost all this growth occurred prior to the collapse of oil prices in 1983. Since then, Middle Eastern meat consumption has stagnated.

But as increased incomes raise meat consumption, the reverse is also true; decreased incomes lower consumption. Such was the case in Mexico over the past several years. As a result of declining real incomes and austerity programs brought about by heavy foreign debt and the collapse of oil revenues, per capita meat consumption in Mexico declined more than 14 percent from its 1982 high. A similar situation exists in Brazil where meat consumption per capita fell more than 10 percent during the same period.

Figure 2. People Tend to Increase Caloric Intakes as Their Incomes Rise[1]



[1]1985 data. Average trend of caloric intake for 102 countries. [2]Per capita Gross National Product for 102 countries.

Sources: *Production Yearbook*, Food and Agriculture Organization, United Nations, 1986; *World Development Report*, World Bank, Washington, DC, 1987.

In both cases, high population growth exacerbated the decline in per capita consumption.

It is possible that reduced incomes will not cut total meat consumption, but rather cause a switch to other types or cuts. For example, since the economies of Mexico and Brazil began to falter, both beef and pork consumption declined while consumption of poultry rose.

Income is not the only factor affecting consumption patterns. In countries with high or rising incomes, there is often a change in lifestyles. These changes usually result in an increase in the demand for foods which are quickly and easily prepared or are premade. In countries such as the United States, this has led to a decrease in cuts like roasts and an increase in steaks, chops, and deboned chicken breasts. In addition, the growth in away-from-home consumption of prepared foods has fostered the demand for items like hamburgers and chicken breast sandwiches.

This phenomenon is not restricted to industrialized western countries. In response to growing consumer demand for prepared products in Asian, Middle Eastern, and Latin American countries, these nations have been forced to develop domestic processing industries and marketing channels.

Finally, consumers change their food choices in response to concerns over the quality and quantity of foods available. In many countries, this led to a move away from meat products containing high levels of fat and cholesterol. For example, some people may switch from pork and beef to chicken and turkey—products perceived as lower in fat and cholesterol. Even within the same meat class, demand is greater for leaner cuts.

Changes in technology affected the availability of meat products. The integration of the poultry industry in countries, such as the United States, Brazil, Thailand, Japan, and those of the EC, permitted rapid development of relatively low-cost poultry products. Coupled with technologies like blast freezing to insure longer shelf life and deboning to ease preparation, the poultry industry can present viable alternatives to more expensive meats.

Other technological changes include product packaging and presentation. Packing houses are now shipping beef and more pork as boxed cuts instead of whole carcasses. This reduces shipping costs and permits packers to direct individual cuts to markets where demand is greatest. Additionally, fat is now being trimmed from cuts prior to retail sale. This increases "case appeal" by making the product appear less fatty and more healthful.

In addition to changes in incomes, lifestyles, and technology, cultural factors can affect consumption patterns. Nations where the population is predominately Moslem or Jewish will not use pork products. Therefore, increases in meat demand in these countries will be for beef, lamb, and chicken. India, which is predominately Hindu and therefore vegetarian, has a very low demand for meat.

Other cultural practices, such as cooking style or service, can influence demand for specific cuts of meat. For example, a society which is used to stir-frying foods, such as the Japanese, will be less likely to purchase roasts or lean cuts of beef.

Finally, governments can indirectly influence consumption patterns through trade or production policies. In the Soviet Union and Eastern Europe, governments are caught between a desire to upgrade national diets and an inability to purchase imported feed components. Since poultry species are more efficient than cattle or hogs at converting feed to meat, Soviet Bloc governments are redirecting resources into poultry production. In the European Community, agricultural policies have led to considerable overproduction in the dairy sector, and a policy decision to cut the dairy herd resulted in more beef.

Increasing Incomes and Technology Spur Trade

To meet changes in meat demand, countries can either increase domestic production or tap into world markets through trade. For example, countries which want to rapidly increase meat consumption but have limited resources, can import poultry meat which is relatively less expensive in relation to other meats and also import the technology needed to produce chicken.

However, in some cases, increasing domestic output is impossible. For example, land constraints and pollution are forcing the governments of Hong Kong and Singapore to implement policies aimed at halting domestic pork production. Singapore now imports live hogs for slaughter from the Philippines and Hong Kong imports hogs from China.

In the past, fresh meat could not be transported over long distances because of its perishability. Frozen meat could not be shipped to destinations lacking refrigeration and a good distribution system. However, new technologies are changing that. For example, chilled meat, which can stay fresh for long periods of time, is shipped to many such locations. In parts of the world where it is customary to pick out the live animal immediately before slaughter, advertising and other promotional activities encourage consumers to try fresh, chilled, or frozen cuts. Such marketing efforts are improving acceptance of frozen and packaged meat.

Many countries are buying more meat. Between 1975 and 1987, total meat exports grew 71 percent. Most of this gain came from poultry, up 137 percent. However, all major categories of meat exports increased during this period. Pork climbed 96 percent, beef grew 52 percent, and lamb, mutton, and goat rose 33 percent. However, exports constitute a very small share of world output. About 11 percent of the beef produced is exported. Only 7 percent of the pork and 6 percent of the poultry make their way into trade channels. When total exports are compared to total production, trade gained only 2 percentage points over the period, and now accounts for 9 percent of total output.

Not all the largest producers are major exporters. The United States, while the biggest beef and poultry producer and the second largest pork producer, is also the largest beef importer and one of the major pork importers. Major beef exporting countries are Australia, Argentina, Brazil, New Zealand, and the United States. EC members Denmark, Ireland, the Netherlands, Belgium, Luxembourg, France, and West Germany together export a significant amount of beef. Along with the United States, the USSR, Japan, and the EC countries of Spain, Portugal, Italy, Greece, and the United Kingdom are major importers.

Major pork exporters include Denmark and the other EC countries of Ireland, the Netherlands, Belgium, and Luxembourg, along with China, Taiwan, Eastern Europe, and Canada. Major importers besides the United States are the Soviet Union, Japan, Hong Kong, and the rest of the EC members. The major poultry exporters are France, the United States, Brazil, Hungary, and Thailand. Most poultry meat is sent to the Middle East, the USSR, Japan, and Hong Kong.

Many barriers beyond those related to transportation and perishability exist to the international meat trade. To protect domestic producers from competition, many governments impose import quotas, high tariffs, and other trade barriers that make trade difficult or impossible. The concept of self-sufficient food production keeps some nations producing certain commodities which could be imported more cheaply. Stringent veterinary regulations aimed at protecting the wholesomeness of a country's meat supply also hinder trade. Legitimate concerns about preventing disease do exist. For example, the occurrence of hoof and mouth disease in some countries precludes shipping fresh meat from these countries to those where the disease is not evident.

Efforts are now underway to harmonize the regulations of many major trading countries. These efforts should make trade easier, and international shipments of meat will likely rise. For the meat trade to grow, a greater awareness of the needs and desires of the various trading partners is needed. The exporting country may have to customize its shipments to match the cuts popular in the target country. Reluctance of some producers to cater to foreign interests has held back export expansion. Exporting to foreign countries also requires sensitivity to the conditions and customs in the recipient country. For example, products should be labeled in the language of the receiving nation and with its domestic measuring system, whether it is U.S. Customary, British Imperial, or International Metric.

Future Trends

The potential for expanding meat consumption is very high in Japan, the rapidly industrializing countries of East Asia, and in Latin American countries like Mexico and Brazil. There are, however, two important factors crucial to continued expansion.

Economic growth in developing countries is essential in boosting personal incomes and meat consumption. Low rates of growth and staggering debt burdens remain a significant problem for many developing nations. These problems are especially notable in Brazil and Mexico, where well-developed livestock industries exist but meat consumption is declining. Resolution of their debt problems, along with economic expansion, could significantly impact their consumption patterns. However, the prospects for the near future are somewhat limited.

South Korea, Taiwan, Singapore, and Hong Kong are bright exceptions to this forecast. Continued economic growth is expected to increase their consumption of meat for the foreseeable future. This should encourage more meat production and trade.

But the obstruction of free trade in livestock products is a very important factor distorting global meat consumption. Although many barriers affect trade in meat, such as health regulations concerning hoof and mouth disease, it is doubtful that they will be removed. On the other hand, elimination of quotas or tariffs maintained by countries protecting their domestic livestock industries would permit greater consumption. Nations such as Japan and South Korea, which impose trade restrictions that limit imports, have sufficient incomes to consume larger quantities of meat, but their livestock sectors are unable to meet demand. Conditions are beginning to change, however. Japan recently agreed to alter its beef importation practices after extensive negotiations with the United States. Their import quota will rise by 60,000 metric tons per year until fiscal 1990. There will be an initial increase in the tariff, but after all service charges are eliminated, it will decline by 10 percent per year.

Nevertheless, increased demand will have to be met by products fitting the needs of importers. The saying, "The art of salesmanship is not selling the customer what he wants, but what you have," does not hold in all societies and cultures. If producers want to participate in the growing international market for meat products, they will have to offer products which are tailored to fit the changing patterns of global consumption. ■