

Consumer Demand and Preferences

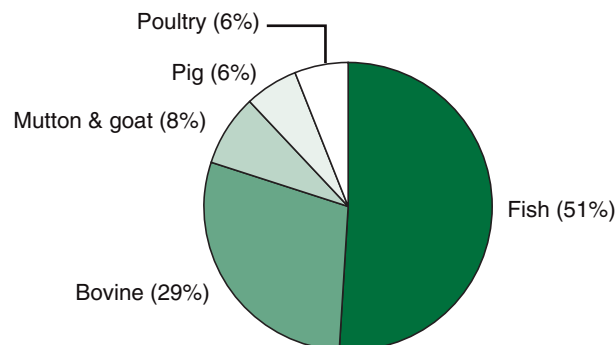
The major meats consumed in India are fish, bovine (cow and buffalo), mutton and goat, pig, and poultry (fig. 3).⁵ Although consumption of poultry meat appears to be underestimated in the FAO data, the data indicate that poultry consumption grew faster than consumption of other meats and animal products, including milk and eggs, during the 1990s (table 3). Using the higher USDA estimates of poultry consumption, poultry's share of Indian meat consumption is about 8 percent, higher than both mutton and goat and pig meat. According to all major sources—FAO, USDA, and industry estimates—consumption of poultry meat is growing faster than consumption of any other major animal products since 1990.

Industry sources in India tend to minimize the significance of religious practices as constraints on growth in poultry consumption, although there is disagreement on this issue. Some industry sources claim that the share of the population that does not eat meat due to religious practices, as opposed to economic necessity, is fairly small, perhaps as low as 10-20 percent. A 1994 study entitled "People of India," conducted by the Anthropological Survey of India and based on a survey of 2,469 communities, indicated that only 20 percent of the "communities" surveyed were vegetarian. According to the survey, men were more likely to be nonvegetarian, and older people were more likely to be vegetarian.⁶ The age structure of the Indian population indicates a large potential market for poultry in the years to come, as 30 percent of the 2000 population were between age 10 and 24. A national food survey, also conducted in 1994 in 32 cities, indicated that 74 percent of urban households were nonvegetarian.⁷

Disagreements have also arisen among government and industry sources in India regarding the relative popularity and consumption of various meats, particularly beef and fish, as indicated by the FAO data. Fish, with the highest level of consumption according to FAO, is widely consumed and strongly preferred in some regions, particularly in coastal areas and in eastern India. Fish availability, however, is highly

Figure 3

Meat consumption shares in India, 1997-99 average



Source: FAOSTAT database.

seasonal in much of northern and central India and, for this reason, some analysts question the high level of consumption at the national level.

The apparent popularity of beef consumption in a predominantly Hindu country is both surprising and controversial. The beef consumed is primarily buffalo meat, which has less religious significance than cow meat, but some observers still question the high level of consumption indicated by the FAO data. Beef, along with pork, is generally the cheapest meat available in India, and its consumption is reported to be concentrated among Muslims and lower income consumers, and in the southern region. Consumption of both beef and pork appears to be growing relatively slowly compared with other meats, although there is now significant growth in Indian exports of beef, primarily to Middle Eastern markets. Mutton is generally the most expensive meat to buy, and available data suggest that both production and consumption are growing relatively slowly.

Poultry meat, which is showing the fastest growth in consumption according to available information, seems to have broad regional acceptance. Poultry meat is also generally low cost relative to mutton and fish. Low poultry prices in South India, due largely to the prevalence of poultry integrators in the region, are reported to have stimulated rapid growth in consumption. Several sources indicate that per capita poultry consumption in South India is about 4 kgs, about four times the national

⁵ According to FAO data, which provide the most complete coverage of Indian livestock product consumption.

⁶ Published in *Indian Express*, Bombay, April 13, 1994.

⁷ Conducted by the Indian Market Research Bureau.

Table 3—Trends in animal product consumption in India

Period	All meat	Fish and seafood	Bovine meat	Mutton and goat meat	Pig meat	Poultry meat	Milk	Eggs
<i>1,000 tons</i>								
FAO estimates:								
1979-81	2,550	2,132	1,628	450	263	111	27,170	496
1989-91	3,776	3,262	2,299	603	417	330	45,878	1,009
1997-99	4,526	4,546	2,626	682	545	542	62,058	1,424
<i>Growth rate (percent)</i>								
1980-90	4.0	4.3	3.5	3.0	4.7	11.5	5.4	7.4
1990-98	2.3	4.2	1.7	1.5	3.4	6.4	3.8	4.4
<i>1,000 tons</i>								
USDA estimates:								
1979-81	1,330	--	601	408	72	214	--	1,202
1989-91	3,079	--	1,802	827	--	393	--	1,272
1999-01	2,722	--	1,399	918	--	1,050	--	1,991
<i>Growth rate (percent)</i>								
1980-90	8.8	--	11.6	7.3	--	6.3	--	0.7
1990-00	--	--	-2.5	1.0	--	10.3	--	4.6

-- = Not available.

Sources: FAOSTAT database, USDA PS&D database.

average based on industry consumption estimates, but no firm data support this claim.

Income and Price Sensitivity of Demand

Growth in the Indian poultry industry is driven primarily by gains in real per capita incomes and changes in poultry prices. All sources note the importance of incomes in driving poultry demand, and most recognize the important role of poultry prices. The degree to which consumption responds to changes in income (or price) can be expressed as an “elasticity,” which indicates the percentage change in consumption resulting from a 1-percent change in income (price). Formal estimates of income or price elasticities of demand for poultry in India are not available. One recent study provides income elasticity estimates for “meats” of .85 (rural) and .63 (urban) and an own-price elasticity for meats of -.88 (both rural and urban).⁸ Given the relatively fast growth in poultry demand relative to other meats, it seems likely that the elasticities for poultry are higher than these group averages. For example, USDA estimates of poultry consumption

growth since the mid-1990s (app. table 1.2), together with growth rates in per capita income and real poultry prices (table 2) during the same period, are consistent with elasticities of demand on the order of 1.7 for income and -1.5 for price.

Current patterns of poultry consumption provide additional evidence of the important roles of income and price. First, poultry consumption is higher in urban areas, where both average incomes and the number of high-income consumers are highest. Second, per capita poultry consumption is higher, perhaps as much as four times higher, in South India where retail poultry prices are significantly lower than in other regions. Given the evidence of sensitivity to both income and price, the recent trends toward faster growth in per capita incomes, as well as declining real prices for poultry, are likely to contribute to more rapid growth in poultry consumption.

Regional Demand Patterns

India’s States and regions are diverse in terms of economic factors affecting food demand, including population, income, and urbanization. The northern and eastern regions account for the largest shares of India’s population, but their populations tend to be less

⁸ P. Kumar, *Food Demand and Supply Projections for India*, Agricultural Economics Policy Paper 98-01, IARI, New Delhi, 1998.

Income Growth and Poultry Meat Demand: A Cross-Country Comparison

The rapid apparent growth in poultry demand in India is consistent with patterns reflected in cross-country data for countries in the Asia and Near East region. Norton and Alwang provide estimates of income elasticities of demand for poultry and eggs for a number of developing countries in Asia and other regions (table B-1). The estimates indicate that poultry demand is relatively responsive to income in India, compared with other developing countries.

The relationship between per capita income and consumption of total meat and poultry for a number of Asia and Near East countries is shown in figures B-1 and B-2. This analysis is based on 1999 FAO consumption data and 1999 World Bank national per capita income data that are adjusted for differences in the purchasing power of national currencies. The figures, graphed in logarithms to provide a clearer picture, indicate that total meat consumption is strongly related to per capita income, particularly when countries reach the equivalent of about \$3,000 of per capita income on a purchasing power parity (PPP) basis. India's 1999 PPP income is estimated at \$2,230.

Among the meats analyzed in the region, poultry meat consumption is shown to be the most responsive to income and to have the strongest statistical relationship with income (table B-2). Fish is the next most responsive to income.¹ Mutton and goat meat consumption has a very weak and insignificant relationship with income among the countries analyzed.

¹ Muslim majority countries are excluded from the analysis of pork consumption.

Table B-1—Income elasticities of demand for poultry and eggs for selected countries

Country	Poultry	Eggs
India	1.50	1.00
Indonesia	1.50	1.20
Egypt	1.30	0.70
Kenya	1.20	1.30
Turkey	1.20	0.80
South Korea	1.00	0.80
Nigeria	1.00	1.20
Philippines	1.00	1.00
Mexico	0.93	0.59
Malaysia	0.87	0.73
Brazil	0.64	0.55
Thailand	0.50	0.50

Source: Norton and Alwang, p. 43.

Figure B-1

Total meat consumption and income for selected Asian countries

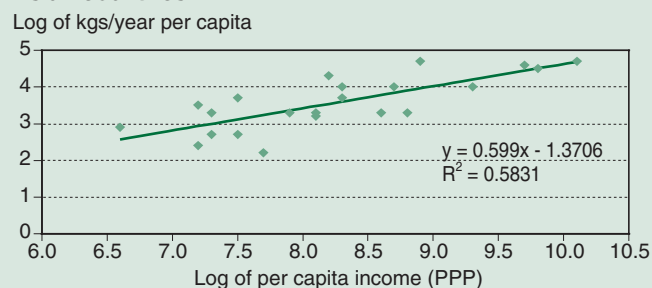
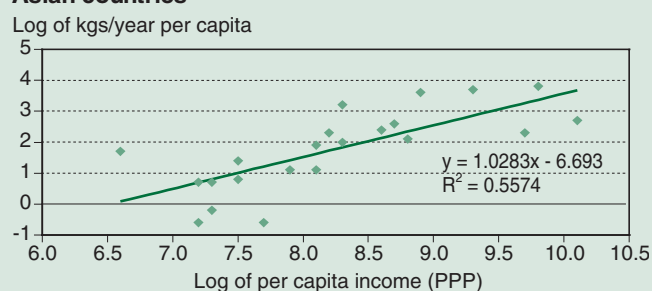


Figure B-2

Poultry meat consumption and income for selected Asian countries



Sources: ERS calculations using FAOSTAT per capita consumption and World Bank per capita income data.

Patterns of meat consumption in India may differ from other countries in the Asia and Near East region due to differences in availability, price, consumer preference, and other factors. Indian consumption of pork and beef appears not to be showing the signs of income responsiveness revealed in a number of the other countries in the region. On the other hand, traditional preferences and relatively high local prices may lead Indian demand for mutton and goat meat to be more responsive to income than in many other countries in the region. However, in the case of poultry, international comparisons provide support for the prospects for relatively rapid growth in poultry consumption.

Table B-2—Implied income elasticities of demand for meats for Asia and the Near East

Meat	Income elasticity	R-square	n
Total meat	0.60	0.58	22
Poultry	1.03	0.56	22
Pork	0.48	0.08	14
Beef	0.37	0.29	22
Mutton & goat	-0.10	0.00	21
Fish	0.59	0.25	22

n = number of Asia and Near East countries. Near East countries are excluded for analysis of pork.

Sources: Computed from FAO per capita consumption and World Bank per capita purchasing power parity (PPP) income data.

urbanized than in the southern and western areas (fig. 4 and app. table 1.3). In contrast, the southern and western regions are the most urbanized and have the highest average per capita incomes. The northern region also has areas with relatively high incomes and urbanization, but its averages are weighed down by low incomes and urbanization in Uttar Pradesh, by far India's largest State. The eastern region, including India's poorest State, Bihar, has substantially lower average per capita incomes and urbanization than India's other regions.

High incomes and urbanization in the South are supportive of the region's rapid gains in poultry demand, supply, and commercialization. These factors also support the rapid growth now extant in the western region, particularly around the large Mumbai market. The northern region, where the poultry industry is not growing as rapidly as in the South or West, does, however, have areas of high income and urbanization, particularly in Delhi, Haryana, and Punjab, that can support growth in poultry demand. Demand fundamentals in the eastern region, however, suggest that poultry demand growth may remain slow relative to the other regions.

Substitutes and Complements

The degree to which consumers switch between, or substitute, different foods because of changes in price can be expressed as cross-price elasticities of demand.

Formal estimates of cross-price relationships between poultry and other foods in India are not available. Based on information supplied by industry and academic sources, fish is an important substitute for poultry, and there is a strong correlation between the prices of these commodities. Goat meat is also a significant substitute for poultry meat based on relative prices. Given their different uses in food preparation and the diet, eggs and, particularly, milk were not considered strong substitutes for poultry meat.

Most likely some substitution between cereals and pulses and poultry meat occurs among middle- and lower income consumers, if not among higher income consumers. Cereals and pulses account for a large, and relatively price-inelastic, share of the diet, so relative prices are likely to affect allocations to poultry. Pulses and cereals, as well as milk and eggs, are important sources of dietary protein, but there is little evidence that consumers substitute among foods on the basis of protein content. Most consumers, reportedly, are unaware of the protein content of their daily menu. Instead, they maximize variety on the plate subject to a budget constraint.

Poultry meat is still somewhat of a luxury good in India, but its status is changing. In the past, chicken was considered to be a delicacy and was more expensive than mutton. But, with the strong gains in poultry production over the years, poultry prices are now lower than mutton prices and consumption among middle-class consumers is expanding rapidly.

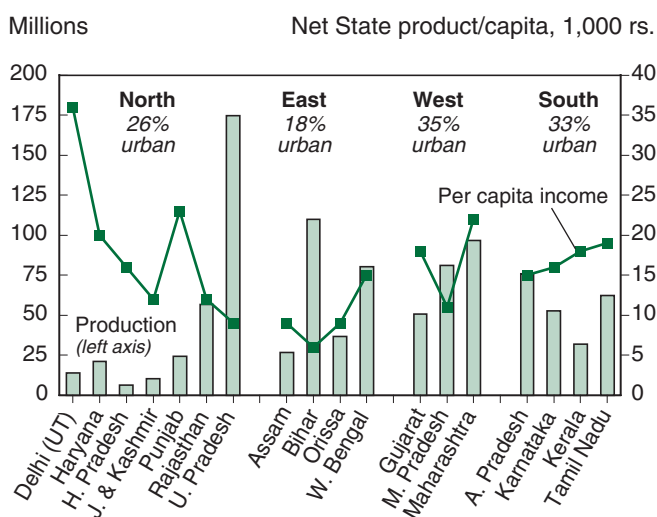
Although the price of beef is lower than poultry, and the quantity consumed is significantly higher according to available data, it is not clear whether beef will be a major source of competition for poultry. At present, in contrast to the relatively universal appeal of poultry, beef consumption is mostly in Kerala and Tamil Nadu and, to a lesser extent, in West Bengal and the north-eastern States where beef slaughter is permitted. From a socioeconomic standpoint, beef is consumed primarily by Muslims and the relatively poor.

Preferences for Dark and White Meat

Indian consumers prepare poultry in a variety of ways, the most popular being curries, kabobs, and tandoori (barbecue) dishes. Although these dishes are generally made with a mix of white and dark meat, industry sources claim that Indian consumers have a preference for the dark meat portions. This preference for dark

Figure 4

Regionwise population and income in India



Source: *Economic Survey*, 2001/02, Ministry of Finance, Government of India, 2002.

meat is not, however, reflected in noticeable price premiums for dark meat.⁹ Sales of chicken parts are limited to high-end urban shops, but per kilogram prices for dark and white meat parts were the same, or very nearly the same, in all the markets visited. It is possible, however, that these prices are skewed by the nature of the clientele in such shops, and that many consumers would pay some premium for dark meat pieces if they were widely available.

Seasonality in Demand

Perhaps the most significant impacts of religious practices on consumption of poultry and other meats in India are the strong seasonal patterns in demand in

⁹ This is in contrast to East Asian markets, in which dark meat prices are higher than white meat prices, and to North American markets, where prices for white meat are higher than for dark meat. These international differences in price for poultry cuts drove much of the growth in global poultry meat trade in the 1990s.

some regions. Seasonal religious observances can lead to significant fluctuations in demand. In some cases, religious practices prohibit meat for specified periods, and in others, celebrations and festivals lead to increases in meat demand. In the Mumbai region, religious observances significantly reduce poultry consumption for about 3 months of the year, although some festivals can lead to offsetting increases in demand. In Calcutta, on the other hand, an increase in poultry consumption is associated with the Durga Puja festival, and no significant seasonal downswings in consumption are reported.

With limited frozen storage facilities or interregional movement of live birds, the seasonal swings in demand contribute to volatility in market prices of poultry meat in some regions. For example, during August 2001, a seasonal drop in demand helped push prices in the Mumbai market down sharply, and below production costs for most producers in the region.