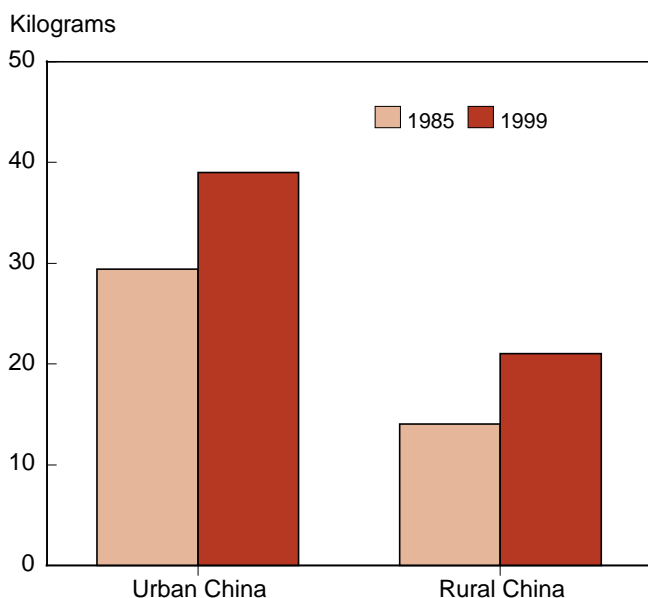


Rising Demand for Meat: Who Will Feed China's Hogs?

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As China has continued to develop and per capita incomes of its consumers have risen, dietary patterns have shifted away from staple grains and starches toward animal proteins and fish (see "How Will Rising Income Affect the Structure of Food Demand?" in this report). Based on survey data collected by China's National Bureau of Statistics, per capita meat and egg consumption (not including away-from-home meat consumption) by urban residents increased an average of 1.5 percent annually from 1985 to 1999. Rural meat consumption grew at nearly double the rate of urban meat consumption, averaging 2.7 percent annually (fig. E-1). Despite some closing of the gap between urban and rural meat consumption, on a per capita basis, urban residents still consumed 70 percent more meat and eggs in 1999 than rural residents, revealing the great potential for consumption growth in China in the coming years. Continued income growth and urbanization will further expand meat consumption.

Figure E-1
Per capita meat and egg consumption, rural and urban China, 1985 and 1999



Source: *China Statistical Yearbooks*.

Changing Structure of Livestock Production

China's dramatic increase in animal protein consumption would not have been possible without a rapid expansion of its domestic livestock industry. Since 1985, China's pork output has increased markedly, reaching over 40 mmt (4.7 times the level in the United States) in 2000. China's beef sector has grown from an inconsequential output level in the 1980s to the third largest in the world. Likewise, China has moved into second place behind the United States in total output of poultry meat. Overall per capita meat consumption in China, however, is still lower than in the United States.

Most of China's livestock are still raised by traditional rural households that devote the bulk of their labor to crop production. Households generally keep livestock to provide food for the family, draft power, and manure for fertilizer. Since market reforms took hold in the 1980s, an increasing number of traditional households in China have taken advantage of expanded marketing opportunities to raise additional animals for sale in local markets. Many households shifted their focus from crop production to livestock and increased their swine herds from 1 or 2 head per household to 10, 50, or 100 head. Large-scale commercial operations, typically located near urban population centers, have also increased since the 1980s, encouraged by growing applications of imported technologies and management practices. Since 1985, the share of China's pork produced by traditional households has declined from 95 percent to less than 80 percent. While livestock production was traditionally a sideline activity for farm households, more farms are now specializing in livestock production. Households that specialize in livestock production and large commercial operations have risen in share of overall livestock production in China to roughly 15 and 5 percent, respectively.

This transition in livestock production will continue in the next decade and will have important impacts on

feed use in China. Traditional household operations make full use of readily available, low-cost feedstuffs, often feeding their swine large quantities of water plants, vegetables, tubers, crop residue, table scraps, and wheat and rice bran. These low-quality feeds are supplemented with some grain, protein meals, and concentrates, but traditional swine diets are often deficient in protein and energy, causing low productivity. Specialized household producers often employ more advanced management and breeding practices and feed their livestock more grain and protein meal. Specialized household swine producers use roughly 36 percent more grain, compound feeds, oilseed meals, and premix additives than traditional households. As a result, specialized households reduce the time it takes for swine to reach slaughtered weight by 30-80 days. The shift from traditional households to specialized-household and commercial operations has increased the demand for quality grain-and-oilseed-based feeds, reinforcing the growth in the number of Chinese feed mills in the 1990s.

Meat Versus Feed Grain Imports

Land scarcity limits China's ability to continue increasing its livestock production to meet the growing domestic demand without increasing its imports of livestock feedstuffs. An expected relative shift in production from pork to more-efficient poultry will improve overall feed conversion, but other challenges will remain.

The development of specialized household and commercial livestock operations was facilitated by government policies that encouraged local and regional investment in improving livestock genetics, management practices, disease control, and slaughtering and processing facilities. In the last few years, however, the central government has increasingly placed the financial burden of these programs on local and provincial governments, which have had only limited success in replacing lost funding. Traditional and specialized household producers that depend on subsidized artificial insemination and vaccinations for livestock may be the hardest hit by the reduction in central government support, while commercial operations with ties to local government or international companies may feel less impact from the changes.

Large commercial operations face other challenges. These facilities are often located near major urban areas and, accordingly, must deal with issues related to

What We Need to Know

How will China's entry into the WTO affect the structure of livestock production and marketing in China?

How rapidly will China's livestock industry continue to shift from traditional household production?

What impacts will the rapid rise of supermarkets have on urban meat consumption and meat marketing?

How will China's biotechnology product policy affect future U.S. feed grain (particularly soybeans) exports?

Will China be a competitive exporter of meat products to Asia in the future?

waste and odor management. Commercial meat companies sell a growing share of their output to chain stores, supermarkets, and foodservice outlets to capture a quality premium. China lacks a well-developed, independent meat distribution industry; thus, commercial firms must develop and maintain their own transportation, storage, and distribution networks. Several commercial meat companies export relatively small quantities of meat products to Japan, Singapore, Russia, and other Asian and Middle Eastern countries, but exporters must overcome difficulties associated with meeting international inspection and quarantine standards to further expand their overseas markets. With greater exposure to international competition in the foodservice industry, supermarkets, and export markets, large commercial operations will feel most acutely the impacts of increased competition in the livestock sector brought about by China's entry to the World Trade Organization (WTO).

As domestic demand for livestock products grows in the coming years, China will continue to increase both its own meat production and its imports of meat products. Low per capita incomes and consumer preferences for freshly slaughtered meat currently limit the potential market for meat imports to low-value cuts and variety meats. However, rapidly increasing incomes in large cities and the growing popularity of supermarkets are likely to generate future opportunities for imports of high-value cuts.

Finally, most of China's growing demand for livestock products will be supplied by domestic producers, predominantly specialized households, and commercial livestock operations. These farms, however, will have to increasingly rely on imported corn and soybeans or soy meal to feed their growing livestock numbers because arable land is scarce in China and the country's capacity to expand land-intensive feed grain crops is limited. China's uncertain direction in biotechnology policy could limit feed grain imports, since the United States and other suppliers make wide use of genetically modified varieties of feed grains and oilseeds. If China imposes stringent labeling or traceability requirements that apply to feed grains and feed products, it will raise feed costs to China's livestock producers and slow the sector's growth.

Further Reading

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