

Recent Developments in the Livestock Sector in China and Changes in Livestock/Feed Relationship

by

KE Bingsheng

Director, Research Center for Rural Economy
Chinese Ministry of Agriculture
Beijing, PRC

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This important longish paper was originally prepared in early 1997 as a briefing document for the Food and Agriculture (FAO). It was not published at that time. It is being included in the Discussion Papers Series since it contains a great deal of useful detailed information not generally available in English. To assist readers, both a detailed Table of Contents and a List of Tables follow. (Editors)
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1. Introduction

This study is prepared for the Food and Agriculture Organization in early 1997. The main objectives are to assess the changes in the livestock sector and to draw the implications they would have on food demand. Given the importance of China for the world agricultural economy, it was felt that these changes might have a large impact not only for China but also for the rest of the world. Much of the information contained in this study has been collected through field visits to farms, officials from ministries, especially the Ministry of Agriculture, and from the State Statistic Bureau, the government body officially responsible for statistics in China. The consistency of the information was checked through discussions with professors at the China Agricultural University. Major contributions were made to the study by FAO staff from the Animal Production and Health Division and from the Commodities and Trade Division who visited China in March 1997. The author also relied extensively on a model developed by the FAO Animal and Health Division (LPT2) and on the study China's Livestock and Related Agriculture (Simpson, *et al.*, 1994) in sections dealing with technical aspects of the livestock sector.

2. Significance of Livestock Sector

Livestock plays a very important role in China due to its multi-functions. For many part of China (other than the pastoral regions and suburbs of big cities), large animals are important primarily not for their meat and milk products, but for the draught force they provide for crop production and local transportation.

Swine raising has been highly valued, especially in the 1960s and 1970s as a major source of fertilizer. In the period of grain surplus such as in mid-1980s and early 1990s, pig and poultry raising was encouraged and regarded as a mean to solve the grain surplus problems. However, the livestock sector as a major source for food has never been attached the same importance as the crop sector. The share of animal production value in the overall agriculture has increased over the past two decades, from 15% in 1978 up to nearly 30% in 1995(SSB, 1996).

Livestock production in China has been characterized by its small-scaled structure. China has not only the largest swine inventory and pork production, but also by far the largest number of swine holders in the world. It is estimated that over 80% of the rural households, or around 180 million farmers, have swine inventory. Pig inventory averages only 2-3 heads per household. Even in Sichuan province, the biggest swine production and surplus region in China, holders with over 10 heads pigs inventory have a share of only about 5% in the total pork production in mid-1980s (Ke, 1992). Changes have taken place in the past decade, but not very significantly. According to officials from MoA, the intensive pig raising in such definition has increased its share up to 15-20% currently.

The small-scaled production system is cost-efficient. A considerable part of nutrients need for

the livestock of the small farmers are provided by residues and by-products of crop production, which are otherwise of no value. For example, pig raising in the South is heavily dependent on green feeder and roughage including leaves and vines of sweet potato and rice bran (Xu *et al.*, 1994). This has not lowered the production cost, but also significantly reduced the feed grain/meat ratio, or the amount of feed grain for each kg of meat gain, to a level much lower compared with the industrialized production system. According to a survey on 6000 pig farms, the average feed grain/meat ratio is estimated at 1.8: 1 for pork in Sichuan province, the most important pig producer in China (Lu, 1997).

For many small farmers, livestock raising is an important source for cash income. Surveys organized by the Ministry of Agriculture indicated that, on the average of all kinds of farmers, pig sales alone accounted 6-12% of farmers' cash income (MoA, 1992). The central part of the country and the group with medium-level income has the highest shares. The pig's share in cash income for almost all groups has risen by 1-2 % over the observed period of 1986-1990 (Table A-1). In the major producing areas of pigs such as in Sichuan Province, pig sales consist up to 20% of farmers cash income, as estimated by local agricultural administrators and farmers interviewed by the author and CAU students.

For the major pig producing regions, often the poor and less developed inland areas, tax from pig marketing and slaughtering accounts for the major share of the township or even the county revenues.

In the process of transformation, the co-existence of traditional and modern production system is a new feature. In contrast to the vastly scattered traditional small holders, there is a growing number of large-scale pig and milk farms in the suburbs of large cities, mostly state farms. The production method and productivity of these large operations are comparable with that in the developed countries. The large-scale pig and milk farms in the proximity of large cities are assumed an important role to secure the provision of livestock products to the urban population and hence the social stability.

3. Recent Policy Development

Under the previous planning system, before the economic reform initiated at the end of 1970s, the livestock sector in China was under strict direct government control. This control encompassed all the phases of the economic process, from the very beginning of production, through distribution to consumption. This system has been greatly, if not completely, changed through the various reform stages initiated since 1978. Now, on the whole, a market system has been established, though there are still some government interventions. This holds true for all livestock categories and products. These policy changes, coupled with enormous changes in macro economic sectors, have had significant impacts on and have resulted in substantial changes in production, marketing and consumption of livestock products in China.

3.1 Production Policy

Livestock especially large animals such as horse, donkey, cattle and buffalo were considered to be production means during the pre-reform period, and were owned either by state farm or collectives. Individual farmers were not allowed to raise large animals. Exception existed only in the northwest and southwest nomadic regions, where each herdsman household was permitted to hold one or two milk cattle, or a couple of sheep or goat, to meet the consumption needs of the family. The same applied for pig and poultry raising in farming areas, mostly located in the eastern half of China.

Since the end of 1970s, the old system has been progressively reformed. Though farming as

well as grazing land remains public goods, its use right has been contracted to the individual farmers and herdsmen. Livestock herds in both pastoral areas and crop farming areas have been divided to individual herdsmen and farmers. The prevailing production system has turned from collective to rural household-based ones. Presently, except for a limited number of large-scale state pig and milk cattle farming enterprises in suburbs of large cities like Beijing and Shanghai, almost all livestock are owned by individual farmers.

In summary, the reform process of the livestock sector basically can be regarded as one of privatization. The individual farmers and herdsmen have become the decision-makers for their livestock production and marketing. This has greatly improved production incentives, resulting in a rapid expansion of livestock inventory and output. However, at the same time, over-grazing and other environmental problems have also been aggravated.

Due to low economic efficiency resulting from high production costs and management problems, large-scale state pig raising and milk cattle farms operate mostly at a loss. The major purpose of establishing state livestock farms closely located to large cities has been to secure animal products for the urban population to ensure social and political stability.

There were times when also individual farmers got direct support for pig raising and milk production, through the provision of subsidized feed. This practice has been canceled in the recent decade. The only form of direct assistance from local or central governments still provided are the granting of subsidized credit for investment, provision of technical assistance and improved bred to individual farmers and the setting of pilot farms, for example, in the northeastern region. Some kind of subsidy still exists for state pig sector in the suburbs of large cities. For example, currently in Beijing, state pig farms obtain 50 Yuan for every head of pigs they sell to the state slaughtering houses. It looks like a subsidy to state pig raising farms, but in reality it is a subsidy to the state pig marketing agencies. This is because the state pig marketing agencies pay a lower price compared with the market price, thus offsetting the potential benefit from the premium for the state pig farms. The 50 Yuan subsidy has enhanced the market position of the state marketing agencies in competing with private pig traders.

In parallel with the reform of production policy, marketing and price policies for livestock products have also undergone dramatic changes since 1980. The market liberalization process for livestock products was initiated much earlier than that for grain. By mid-1980s, the obligatory delivery scheme had been completely abolished. Not only have livestock raisers obtained the freedom in their marketing decision making, but also private intermediate traders have been allowed to enter the livestock market. The state monopoly marketing in livestock products has been abolished and a very competitive market has been formed.

Price control in various forms has been gradually lifted. Government subsidy to state-owned marketing agencies and shops have been substantially reduced. In small cities and towns and vast rural areas, the state marketing agencies get no more subsidies. Only in large cities do they still get direct subsidy, but at a much reduced level. Reasons for the maintenance of the subsidies include cost compensation for stock holding, price stabilization and support to retired state enterprise employees. The level of the subsidy is usually the result of the negotiation between the state marketing agency and the municipal government.

The current market structure of livestock products in China is characterized by a dual marketing system. On the one side there is a very large number of small private traders with very simple or even primitive slaughtering and marketing methods, while on the other, some large scale state marketing enterprise are equipped with much better or modern marketing facilities. The market share of state marketing agencies is directly related with the size of the city. The larger the city, the higher the share, but it does not exceed 50% even in metropolises like Beijing. It is estimated that, taking the nation as a whole, the private traders have a

dominant market share of over 80%. The hygienic control of the meat handled by the small private traders is becoming an increasing headache for local governments.

Producer price data on livestock products are rather incomplete in China. For poultry, there is no systematic data available. For beef cattle, sheep and goat, there are producer price data up to 1992. However, the prices were measured on the per head bases, not on weight. Only for hog there is consistent price data up to 1992. However, even for hog, the price data for different years are not completely comparable, for they were the mixed prices for state procurement and free market trade and for all qualities.

Since 1993, SSB only publishes aggregated price index, but no more disaggregated price data on livestock products. Surveys organized the Ministry of Agriculture provide only hog prices since 1993.

Based on the available prices, gross market margin for pigs is calculated, which has been rather stable, within the ranges of 50-60% of the producer price under the normal conditions (Table A-2). Exemptions only occurred for 1994 and 1995, when it rose up to 100%, reflecting a much higher consumer price rise than producer during the overall price soar in that time.

3.2 *Consumption Policy*

In the pre-reform period, before the end of 1970s, livestock products were provided at subsidized prices and rationed to urban consumers. The rural population was not covered by the ration scheme, i.e. rural population had to meet the consumption need by themselves. The availability of the livestock products in each city determined the level of the rationing. Both the quantity and quality of the rationed products were far from satisfactory. Meat purchasing was often a source for quarrel between customers and meat shop clerk, for the customers usually could only get the pieces of meat the clerk assigned to them, but not the ones they mostly wanted and preferred. Following the abolition of the rationing system by the mid-1980s, all the population have been given access to meat at the market retail prices.

3.3 *International Trade Policy*

International trade in livestock products is subject to a licensing system. Traditionally, export of livestock products has always been encouraged by government for the purpose of earning foreign hard currencies. Subsidy was also often needed and provided. Since the beginning of 1990s, export subsidy has been canceled.

Imports of breeding animals are exempted from tariffs. Imports of other livestock products are subject to high import tariffs, varying from 12% to 65% under preferential trade terms and 30% to 90% under normal trade terms. In addition to that, value-added taxes are collected, which range from 13-17%, as indicated in Table 3-1.

Table 3-1 Import Tariff for Livestock in China, %, Jan. 1997

	Preferential	Normal	Value-added tax
Breed Animal	0	0	13
Other cattle	12	30	13
Other swine	12	50	13
Other goat and sheep	12	50	13
Other poultry	12	50	13
Beef	50	70	17
Pork	45	70	17
Mutton	45	70	17
Poultry meat	45	70	17
Eggs	55	80	13
Butter an cheese	65	90	17

Source: Beijing Custom, Custom Declaration Manual, 1997.

As practiced in many other countries, there are also non-tariff barriers such as sanitary requirements and quarantine inspection requirement. For example, the Chinese customs, as many other countries, banned beef import from United Kingdom when the mad cattle disease caused great health concerns in 1996.

4. Discussion Over Production and Consumption Statistics

4.1 Production Statistics

In most developed countries, livestock statistics are based on the veterinary quarantine before slaughtering and are very reliable. In China, the veterinary quarantine control system is rather weak. Over 80% of the pigs in China are slaughtered and marketed by a great number of small traders, usually villagers. There are hardly any communal slaughtering facilities available, and these small traders use to slaughter one or two pigs in their backyard each time. They do not have much incentives to go through the quarantine process, which involves fees and transportation costs. In almost every province, pig slaughtering is subject to a slaughtering tax and various fees, which often accounts for up to 5% of the pig value. As a result, a large portion of the slaughtering evades the quarantine process and thus makes the quarantine statistics incomplete.

As an alternative, China has long adopted a reporting-based system to get livestock production statistics. It is a pyramid reporting system: village leaders make an accounting of livestock numbers and production in the village and report them to the township administration. Township administrators in turn compile the data from the villages and report them to the county authority. The county heads compile the data from the townships and report them to the province government. During the collective time before 1980s, this system was technically rather reliable, for the collectives had booking records. However, with the dismantling of collectives and the introduction of individual household-based production system, the reporting system lost its basic ground. Although village leaders still make reports, these reports do not result from book keeping records or surveys, and are rather estimated. In addition, there is a tendency to exaggerate the production figures for officers at various levels as production growth is often regarded as an important indicator for the performance of local government officers. In recognition of these bias, the central government and sometimes also provincial governments make downward adjustments to the compiled reporting-based figures according to experts' views, market balance situation, etc.

It is generally assumed that the real situation falls somewhere between the above-mentioned reporting-based statistical data and the figures derived from slaughter tax, with the former as

the upper limit and the latter as the lower limit. Example figures from survey by CAU students in a county in Guizhou province indicated that taxed slaughtered hogs was only 35-40% of that of official statistics for the recent years. The gap can not be completely attributed to tax evasion. At least part of the disparity is due to over-reporting. The problem of the over-report of meat production become more serious in the 1990s.

According to the official statistics obtained from the above-mentioned approach, livestock production in China has kept a very rapid growth rate over the past 15 years. The total meat production has more doubled in the period of 1980/90, and nearly doubled in the five years of 1990/95, as indicated in Table 4-1. The problem of over-report is clearly shown by the case for beef: it has increased by more than two folds just within five years of the 1990s! This over-reporting of meat production will be discussed in more details in comparison with consumption statistics later.

Table 4-1 Livestock Production and Growth in China, in million t

Year	Meat Total	Pork	Beef	Mutton	Poultry	Rabbits	Eggs	Milk
1980	13.08	11.34	0.27	0.44	1.00	0.03	2.57	1.37
1985	19.27	16.55	.047	0.59	1.60	0.06	5.35	2.89
1990	28.57	22.81	1.26	1.07	3.23	0.10	7.95	4.75
1995	52.60	36.48	4.15	2.02	9.35	0.27	16.77	6.73
1990/80	2.18	2.01	4.68	2.41	3.23	3.33	3.09	3.47
1995/90	1.84	1.60	3.29	1.89	2.89	2.68	2.11	1.42

Sources: SSB; SYC; MoA: 1996 Report

4.2 Consumption Statistics

As for consumption, the State Statistical Bureau implement annual sample rural and urban household surveys on income, expenditure and consumption. These surveys cover about 35 000 urban households and 67 000 rural households. Survey data are aggregated by these two consumer groups, for there are substantial differences in income and consumption patterns between the urban households and rural ones.

Officials from SSB believe with high confidence that the results of the surveys, both for the rural and urban households, are reliable, for the surveys have conducted through a very representative sampling and in a consistent way.

Based on the per capita consumption data from the household surveys and population statistics, total meat consumption for the whole country can be derived, as shown in Table A-3 for the representative years. Table A-