

## THE INTERNATIONAL COMPETITIVENESS OF CHINA'S RABBIT MEAT INDUSTRY

Laping WU, Rui GU, Xuanfu LI

College of Economics & Management, China Agricultural University.  
No.17, Qinghua East Road, Haidian District Beijing, 100083, P.R. China  
E-mail: [wulp@cau.edu.cn](mailto:wulp@cau.edu.cn)

### ABSTRACT

Based on the introduction and development of the Chinese rabbit meat sector, which is based on both production and trade perspectives, this study developed a *Revealed Comparative Advantage* (RCA) index to analyze the competitiveness of Chinese rabbit sector in the world market. Cost and price comparisons among major rabbit producing countries were made to further explore the reasons for specific advantages and level of competitiveness. The results show that China has enjoyed a higher comparative advantage in rabbit production every year since 2003, though it did face a rapid decline before 2003. The Chinese rabbit meat sector has bright future in both production and trade, especially in the present view of the tight grain supply in China. Raising rabbits will continue to be an important choice for both saving feed grain while providing enough meat.

**Key words:** Rabbit, meat, international competitiveness, RCA, China

### INTRODUCTION

Rabbit raising in China has a long history. However, only since 1990 has the Chinese rabbit industry entered a rapid development stage. In recent years, because of the small space and no grain feeding requirements, small investment costs, and ease of management has rabbit raising received more attention by farmers. Furthermore, rabbit production can meet consumer's increasingly diversified demand for meat, fur and skin products. However, the trade of rabbit products is not so encouraging. Although China exported 10.3 thousand tons of rabbit meat in 2009, this is only 1% of total production (FAOSTAT, 2012). This raises the question of whether China really has unique advantages in terms of rabbit raising as an export commodity? What is the international competitiveness of the Chinese rabbit sector? This paper will address these questions. The first and second parts of the paper will cover the recent development of the Chinese rabbit meat sector from both production and trade perspectives. The third part will calculate a *Revealed Comparative Advantage* (RCA) index of Chinese rabbit meat production to examine the real competitiveness status of its rabbit meat sector.

First a brief history of the Chinese rabbit industry. Since the national reform and initiation of the commercial rabbit meat industry in the beginning of the 1980s, the rabbit sector has been greatly expanded. According to agricultural statistics report, in 1985, the year when the breeding rabbit population was an estimated 82.736 million, soon reached 177.817 million by 2000, more than doubled. The population in 2010 further increased to 215.007 million. For slaughtered rabbits an even faster growth was realized. In 1985 the figure was 59.073 million, but this reached 464.525 million by 2010, for an annual growth of 9.4%, which is more than twice of the growth rate of rabbit breeding stock. Still, the growth of rabbit meat production was even faster. Rabbit meat production in 1985 was only 56 thousand tons, but this reached 690 thousand tons by 2010, with an average annual growth of 11.5%.

Today in China, almost every province raises rabbits. More than 60% of the rabbit population is from meat rabbits, 25% is from Rex rabbits, and 15% is from wool rabbits (Yinghe Qing, 2010). In the southern region, farmers mainly raise Angora rabbits for their wool; but in the northern region the *Beaver* rabbit is raised widely for their skins. In the southwest region (Sichuan and Chongqing), meat rabbits are commonly raised due to their comparative advantages in meeting market rabbit production quotas. In 2010, the top five provinces produced 365.279 million slaughter rabbits, accounting for 78.6% of total domestic production with their meat accounting for 76.1% of total domestic production.

China is well known as a net exporter of rabbit meat and wool, but a net importer of rabbit skins. Although meat rabbit production accounts for more than 60% of total production, rabbit meat exports have been lower for several years compared to rabbit wool and skins. Chinese rabbit meat exports accounted for more than 30% of world exports in 1996 and 1997, being mainly exported to the EU and US. However, since the EU banned in 2002 the importation of animal products from China, the meat exports declined sharply, but began to rebound after 2004, and by 2006 reached more than 20% of world exports. In 2010, China exported 10.3 thousand tons of rabbit meat, mainly to Belgium, Germany and the United States (FAOSTATS, 2012).

From 2000 to 2006, rabbit skin exports steadily rose. In 2006 it reached 5385 tons, but then declined. Imports of rabbit skins had been increasing before 2007, but then gradually declined after the peak of 45,705 tons in 2007. Presently, the figure is at 39,000 tons. Rabbit wool accounted for the largest share in Chinese rabbit product exports, but it was affected by the global financial crisis. In recent years, wool exports fell rapidly to only 174 million USD, but increased by 2010 (FAOSTATS, 2012).

## MATERIALS AND METHODS

A definition of international competitiveness is the capability that one country can export more products to world market, which is determined by its resource endowment and comparative advantages. There are two kinds of indexes that can be used to analyze international competitiveness, one is the *revealed comparative advantage* (RCA) index, which mainly reflects the comparative advantages; the other is analytical indicators from price or cost perspectives (Jensen *et al.*, 1995).

The RCA index was developed by Balassa (1965), which is now widely used (Ferto and Hubbard, 2003; Lloyd and Toguchi, 1996). Simply speaking, the RCA index refers to the proportion of two shares, one is the share of one country's export value of a certain commodity in its total national export, and the other is share of the same commodity export of the world in the world total exports. The equation is as following:

$$RCA_{ij} = (X_{ij}/X_{it}) / (X_{wj}/X_{wt})$$

where  $RCA_{ij}$  refers to RCA index of commodity  $j$  in country  $i$ ;  $X_{ij}$  is the export value of commodity  $j$  in country  $i$ ;  $X_{it}$  refers to the total value of export commodities in country  $i$ ;  $X_{wj}$  shows the total export value of commodity  $j$  in the world; and  $X_{wt}$  is the total export value of all the world's goods. If  $RCA_{ij} > 1$ , that means the commodity  $j$  in country  $i$  has a comparative advantage; If  $RCA_{ij} < 1$ , this shows the commodity  $j$  in country  $i$  does not have a comparative advantage (Leishman *et al.*, 2000).

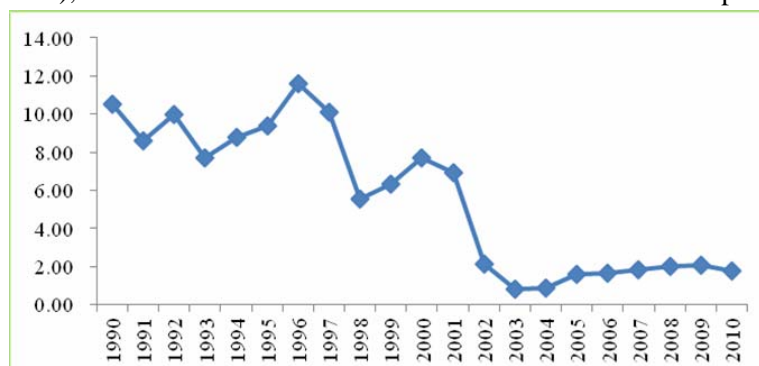
Cost and price are two analytical indicators, which can explain directly the competitiveness differences between countries (Klasra and Fidan, 2004). Due to the limited available data, this paper will use only rabbit meat as an example to compare the cost and price of rabbit meat in China to other major rabbit producing countries.

### Data Description

Data were based on figures of exports of rabbit products from China and other countries, being relative to total agricultural product exports in China and other countries and including prices of rabbit products and production costs. Trade data were from UNCOMTRADE (2012) and price and cost data were obtained from FAOSTATS (2012).

## RESULTS AND DISCUSSION

The RCA index results are illustrated in Figure 1. It shows that from 1990 to 2010 the RCA index declined sharply. This reflects that the Chinese meat rabbit industry has been gradually losing its economic advantages during this period. However since 2003, RCA index values tended to increase (all being higher than 1), which means that Chinese rabbit meat still has its competitive edge.



**Figure 1:** Revealed comparative advantage index of Chinese rabbit meat production

The declining trend in RCAs before 2003 may be attributed to the faster expansion in hog and poultry sectors, involving the transfer of many resources into these sectors. However, since 2003, the meat rabbit industry faces a better economic environment. First, because raising rabbit saves grain and needs only small investments, in many areas rabbit raising has become a major income source for low income people. Also, the government has encouraged farmers (especially in traditional producing areas and poor areas) to increase rabbit production. Second, in 2001, China joined the WTO. Now, rabbit meat can be more easily exported in the open world market. In order to analyze this further, we compared meat prices in China to that of other major countries (Table 1).

**Table 1 :** Rabbit meat prices in major countries (Unit: USD/Ton).

	2006	2007	2008	2009
China	1061.9	1225.8	1496.1	951.7
France	3945.6	4128.2	4543.3	4307.8
Germany	3802.9	4367.8	4740.9	4509.2
Hungary	-	-	-	3046.1
Italy	2496.0	-	-	-
Netherlands	2662.5	2796.2	-	-
Portugal	3280.6	3200.2	3481.5	3228.9

Data source : FAOSTATS (2012).

As shown in Table 1, from 2006 to 2009, rabbit meat prices in China were much lower than in other countries. Hence, Chinese rabbit meat prices are highly competitive. However, maize is one of major feed grains used by medium- or large-scale rabbit farms. The current cost of maize price is much higher in China than in previous years. This factor is expected to greatly limit Chinese rabbit meat competitiveness for larger rabbit farms. In contrast, on small farms, local feed resources or agricultural by-products are used instead of maize. Presently in China, rabbits are still mainly raised in smaller units, typically involving only two or three persons (mainly husband and wife) raising between 3,000 to 5,000 rabbits per annum. Raising rabbit is still labor intensive (Karikari and Asare, 2009), but the cost of labor is relatively low.

## CONCLUSIONS

The output of rabbit meat in China has been increasing for several years now. China continues to maintain the number 1 rank position in world rabbit meat production. China is a net exporter of rabbit meat, as well as of a net exporter of rabbit skins and wool. Generally, China has gradually become more highly competitive in rabbit meat exports every year since 2003. Therefore, the Chinese rabbit meat sector has a bright future, especially in view of present tight grain supplies in China. The Chinese government is trying to explore new ways to increase domestic meat supplies while sparing feed grain supplies that are used for livestock. Raising rabbit will continue to be an important choice for the agricultural sector.

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