

Policy Pennings by Dr. Daryll E. Ray

## Data show that China's more meat-based diet is NOT the cause of ballooned international corn prices?

In the previous column we looked at the assertion that with a growing middle class the Chinese are eating more meat. We found that total consumption of pork, broilers, and beef has increased by 142 percent since 1990, well ahead of the 16 percent increase in population over the same period of time. We also found that this increase was achieved through domestic production and in spite of a small level of broiler imports, China has been a net exporter of meats for the last 7 years.

So far, the data confirm the conventional wisdom that the per capita consumption of meat in China is on the increase. The other part of the conventional wisdom holds that to achieve this level of production the Chinese will need to import large quantities of grain to feed the animals in the growing poultry and livestock sector.

In 1996, the USDA World Agricultural Outlook Board, projected that by 2005, China would be a net importer of 10.7 million tonnes of corn-421 million bushels-most of which would come from the United States. In 2005, China was a net exporter of 3.7 million tonnes-145 million bushels.

The gap between the 1996 USDA projections and reality were even greater in 2002 when instead of importing 7.8 million tonnes of corn-307 million bushels-China exported 15.2 million tonnes-598 million bushels. The gap between USDA's projections and Chinese net corn exports was over 900 million bushels.

So what happened?

To start with, for the 1990 crop year, China had a carryover of 83 million tonnes (3.3 billion bushels) for a stocks-to-use ratio of 95 percent. By the 1999 crop year, Chinese corn stocks had grown to 124 million tonnes (4.9 billion bushels) for a stocks-to-domestic use ratio of 97 percent.

During the 1990-2007 crop years, the corn area in China increased from 21.4 million hectares (53 million acres) to 28 million hectares (69 million acres). The crop yield also increased-from 4.5 tonnes per hectare (72 bushels per acre) to 5.2 tonnes per hectare (82 bushels per acre).

These increases alone would not have allowed the Chinese to increase their feed utilization of corn from 53 million tonnes (2.1 billion bushels) in 1990 to 103 million tonnes (4 billion bushels) in 2007 and export some corn at the same time. Starting with the 2000 crop years, the Chinese began to systematically reduce their stocks of corn as the stocks-to-use-ratio declined from 97 percent in 1999 to 21 percent in 2007.

China could increase its meat production and feed use faster than it increased its production by drawing down its considerable stocks. As a result, to date, the increased production of meats by China has had little direct impact on world corn trade besides a slight reduction in Chinese net export levels. Contrary to the hopes and projections of US farmers and policy makers, China has yet to become a major demander of corn in the international marketplace.

How then did we get it so wrong?

To start with, the USDA's knowledge of Chinese production, utilization, and stock levels is far less accurate than their knowledge of these levels for US crops. This lack of knowledge means that analysts need to view numbers concerning Chinese agriculture as tentative estimates. The USDA has had to revise Chinese numbers several times over the last decade.

Second, we expect them to behave similarly to the way we behave, forgetting that in the US a famine is something that happens elsewhere. For China, famines have occurred within the lifetime of many of its citizens. When one has experienced a famine, large stock levels provide an important sense of comfort.

Third, we looked at China's net imports of corn in the 1994 and 1995 crop years and extrapolated them into the future. In 1994 China's net imports of corn amounted to 3 million tonnes (116 million bushels) and the next year the net imports were 1.3 million tonnes (52 million bushels). In those two years,

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## China's more meat-based diet

### Cont. from p.1

China's corn stocks-to-use ratios were 89 and 99 percent, respectively.

While we would not import corn with stock levels like that, it might just make sense to import in a short crop year, if one had experienced famine and wanted an extra margin of security that the imports would provide.

So what does all this mean?

Well, the change-in-diet portion of the current "China story" is correct. Average meat consumption per capita has increased over the last decade and one-half.

It is the grain part of the story that differs from conventional wisdom.

The data do not support the often-stated implication that the sharp increase in grain prices is attributable to the Chinese diet change. If not specifically stated in such accounts, readers are expected to deduct that the Chinese diet change is major cause of the rise in corn prices.

The grain fed to the increased numbers of livestock in China has come from production and internal stocks and has had little to no impact on world

grain markets. China has not been importing corn to grow her livestock industry. China continues to export more corn than she imports. With regard to grains, China has been taking care of China as if it were a planet on its own, completely independent of what is happening elsewhere.

That is not to say that China will never need to become a net importer of some if not significant quantities of grain.

But to attribute today's international grain prices to China essentially assumes that beginning two years ago the market decided there may be a need for China to become a net importer of some corn in the future, say 2012, and so bid-up the price of corn by double.

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