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Is China About to Drop Out of the Corn Export Market?

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(third in a series)

The answer to this question is of great importance to the U.S. livestock and poultry industries, feed manufacturers and dealers, the renewable fuels industry, grain elevators and exporters, as well as grain producers and the farm supply sector (as indicated in the first two articles in this series). For more than two decades, China has usually been the world's

second or third largest corn exporter. In 2002-03, it accounted for 19 percent of world corn exports. For more than 20 years, traders and analysts have speculated that China would soon become a significant corn importer.

Many analysts in the grain trade as well as USDA economists now believe such a shift is about to occur. Unfortunately, it is doubtful that even the Chinese government knows for certain whether the anticipated shift soon will occur. A shift likely would cause extreme tightness in U.S. corn supplies, necessitating a reduction in domestic corn feeding, processing, and/or exports to other countries.

This article reviews trends in Chinese corn production, utilization, and other developments that will affect its future corn exports and/or imports. Past failures of projected shifts

in Chinese corn trade are reasons for caution in assessing its future corn trade patterns.

Exports have been the most volatile component of U.S. demand for corn since the late 19 century. While long-term agricultural economic models have consistently indicated that U.S. corn exports will trend upward in the years ahead, U.S. corn exports have been in a downtrend for more than two decades. If this trend continues, the U.S. likely will have enough corn to supply the

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* This information first appeared in *Feedstuffs*, Vol. 76, No. 30, July 26, 2004.

Handbook Update

For those of you subscribing to the *Ag Decision Maker Handbook*, the following update is included.

Farmland Value Survey (Realtors Land Institute)
— C2-75 (2 pages)

Please add this file to your handbook and remove the out-of-date material.

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growing ethanol demand for the next few years. However, China is a key variable in long-term U.S. corn export prospects.

Available data indicate Chinese corn stocks have fallen sharply in the last four years and may continue to decline. With its 2002 entry into WTO, many government and industry analysts expect China to cut its corn exports to zero and become a net corn importer within the next one to two years.

If these changes take China out of the corn export market, foreign grain users will turn to the U.S. to fill corn needs historically supplied by the Chinese. This scenario could trigger a potential increase in U.S. corn export demand from 2003-04 levels of 300 to 600 million bushels. That, with currently planned expansions in processing for ethanol, would create by 2008 the need for 5.5 to 8.0 million more corn acres than farmers intended to plant in 2004. These projections assume the U.S. has favorable growing seasons each year. The additional acres, if taken from soybeans, would reduce U.S. soybean plantings by 7 percent to 11 percent from current levels.

Longer term Chinese corn production trends

The reader should be cautioned that our analysis is based on the best available Chinese agricultural data developed by USDA's Foreign Agricultural Service. Our analysis draws conclusions with the assumption that current data are accurate and reliable, an assumption that history says may not be true.

Production practices

By western standards, China's corn production methods are seriously out of step with modern technology. Its corn yields were in a strong uptrend for more than three and one-half decades until the last four years. Since then, the nation's corn yield has reached a plateau of about 76 bushels per acre, just over half a normal U.S. average yield. Factors limiting yields include genetics, weed and pest control, soil fertility management, and rainfall/irrigation water supplies. Note that China has re-

cently asked a major U.S. seed company to assist in improving its corn genetics.

USDA July projections for China's 2004 crop imply that yields are likely to remain near last year's sharply below-trend level again this year. A major premise of this article is that the future of Chinese corn exports or imports rests heavily on the supply side, as opposed to a widespread view that its corn trade will be primarily demand driven.

Weather factors

Factors behind the abrupt departure of China's corn yields from the long-run trend are not entirely clear. Weather has been unfavorable in northern China in recent years. Much of the corn and soybeans in the region normally are irrigated from rivers and reservoirs. Irrigation water supplies appear to have been low—partly because of limited rainfall—and have contributed to low yields. Weekly FAS rainfall and soil moisture charts for China are available from my Web site <http://www.econ.iastate.edu/faculty/wisner/>. Click on "Weekly Foreign Precipitation Maps" in the left-hand column.

China's corn production for the year ahead and in future years as well as exports/imports will be influenced strongly by rainfall patterns and irrigation water management. Another major influence on its corn yields will be the rate at which China is able to accelerate adoption of currently available production technology. With a population of 1.3 billion persons, the Chinese government is well aware of the importance of food security. It recognizes the need to keep the population well fed to maintain internal peace, as well as the risk of losing some political independence if it depends too heavily on imported food from a small number of nations.

Acreage swings

Harvested acreage has shown large swings from year to year, probably in response to weather problems. The data show a slight decline in corn harvested acreage in the past four years, reflecting competition for land from other crops and urban uses. An abnormally dry northern

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China growing season also may have led to higher than normal abandonment of corn acres. Analysts who project that China is on the verge of becoming a corn importer implicitly assume that static or slowly increasing corn yields will continue in the years ahead. China has had other multi-year periods of relatively flat yields before resuming the long-term uptrend. If China's average corn yield were to rise to two-thirds that of the U.S., with current harvested acreage, its production would be about 2.85 billion bushels above the August USDA projection for 2004.

Potential impacts on U.S. corn exports

Whether or not China's corn yields resume their uptrend will have a major impact on its trade position and on the U.S. corn supply-demand balance. A return to a trend yield in 2004 with harvested acreage at last year's level would produce about 820 million bushels more corn than USDA's World Agricultural Outlook Board projected in August. That, in turn, would be large enough to reverse the downward trend in Chinese corn carryover stocks and maintain Chinese corn exports.

Historical Chinese corn exports

In recent years, China has been a net exporter of 300 to 600 million bushels of corn annually. In the mid-1990s, it temporarily shifted to a net corn import position, contributing strongly to the \$5 per bushel corn and \$7 per bushel wheat prices of 1995-96. If China drops out of the corn export market, much of the demand normally supplied by its corn would shift to the U.S.

When considering the possibility of China shifting from corn exporter to importer, consider the extreme difficulty of forecasting Chinese grain trade.

USDA's annually released 10-year projections model has indicated for a number of years that China would become a major corn importer, but so far that forecast has not materialized. Chinese corn imports since the late 1980s have consistently been at or near zero, except for 1994-95 and 1995-96.

Ten year projections of net Chinese corn exports were made from large-scale agricultural models of the USDA and FAPRI. Results from both models were issued in early 2004. USDA's model sees Chinese corn exports steadily declining over the next several years, with the country reaching a net corn import position in 2009-10.

A May 2004 USDA publication sees the shift occurring sooner than indicated by the 10-year projections. FAPRI's model shows the shift to a net corn importer occurring in 2005-06, with a net reduction in Chinese corn trade from 2004-05 to 2007-08 of 492 million bushels. If the projections materialize, changes in Chinese demand will remove 492 million bushels of corn from the world market, most of which would need to be offset by the U.S. USDA's model places the net change at 319 million bushels.

Chinese pork and poultry trends

China's largest users of corn are swine and poultry. In these sectors, available data indicate feed conversion efficiencies have increased substantially in the last decade as western production technology has been adopted and protein levels in rations have increased rapidly. There is a gradually slowing rate of increase in production in these two industries, in contrast to a widely held view that Chinese livestock and poultry production have been expanding rapidly.



Trends in Iowa Farmland Ownership

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Iowa's elevated farmland values appear to be persisting at record levels. Last year's ISU land values survey showed record high values, and surveys since then confirm that the upward trend is continuing. At the same time, another ISU Extension survey found some significant changes have occurred in Iowa farmland ownership over the past 20 years.

The driving force behind almost all of the changes is the aging of farmland owners. In 2002, 24 percent of Iowa farmland was owned by people over the age of 74. This is double the amount that was reported in 1982 when 12 percent of the farmland was owned by people in this age category.

Nearly half, 48 percent, of the farmland in Iowa is owned by people over the age of 65. In 1982, 29 percent of the land was owned by people over 65.

So how does the aging population affect farmland ownership patterns in Iowa? One of the biggest changes is in how the land is owned. There were significant declines in sole ownership and significant increases in farmland owned as joint tenants and held in trusts. The amount of land held by a husband and wife remained essentially unchanged.

As the aging farmland owners die, they pass the land on to their heirs. In 1982, the owners indicated they would transfer 85 percent of the farmland within the family. Often this means there are multiple heirs and they appear to be holding on to the land rather than selling it.

Multiple heirs are spurring other trends in Iowa farmland ownership. For one thing, the amount of farmland owned by people who do not live in Iowa has increased steadily, rising from 6 percent in 1982 to 19 percent in 2002.

The change in ownership patterns also has led to a change in residency for farmland owners. The amount of farmland owned by those who actually live on the farmland decreased significantly from 57 to 47 percent from 1982 to 2002. There was a corresponding increase in the percent of farmland owned by someone who does not live on a farm at all. In 1982, 37 percent of the land was owned by someone who did not live on a farm and by 2002 this had risen significantly to 45 percent.

With aging farmland owners and multiple heirs, Iowa is seeing an increase in rented farmland. Excluding land in government programs, the amount of land that is rented increased from 43 to 59 percent from 1982 to 2002. A major shift also occurred in how the land is rented. In 1982, rented land was equally divided between crop share and cash rent. By 2002 more than two-thirds (69 percent) of the leased farmland was under a cash rent arrangement.

Another notable trend occurred in the financing of the farmland. Currently almost three-fourths, 74 percent, of Iowa's farmland is owned without debt. This compares to the 62 percent of the farmland that was debt free in 1982. From 1982 to 2002, the amount of farmland held under a contract also decreased significantly from 18 percent to 4 percent.

A final trend that likely is associated with the aging of farmland owners is the increase in the size of tracts of farmland owned. In 1982, 40 percent of Iowa's farmland was owned by people who had 80 acres or less. In 2002, land holdings in the 80 acre-or-less category had dropped significantly to just 13 percent. At the other end of the spectrum, land held by those with over 600 acres increased significantly from 5 to 16 percent from 1982 to 2002.

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The amount of land held by males or females remained unchanged between 1982 and 2002. Females currently own 47 percent of the farmland. This percentage is almost identical when considering only leased farmland. In that case, women own 46 percent of the land.

Given the increases in out-of-state ownership and the age of the owners, one would have anticipated an increase in the amount of land under the care of a professional farm manager. There was an increase in farmland acres using a professional farm manager but this increase was not statistically significant.

Implications

So where does this leave us? Is this just a set of interesting statistics or does it provide us with a glimpse of the future? Do we want to try and make any corrections, if possible?

Whether or not we want to make changes is a value judgment and the subject of another article. The changes coming, however, are significant and do have implications for how Iowa's land will be used in the future.

The average U.S. life expectancy is 77. That means with average life expectancy, we could expect almost one-fourth of Iowa's farmland to change hands in the next few years. The total may not be that high but, when those aging owners die, the land will be transferred somehow.

The answers to the survey questions lead me to believe that the trends we have seen for the last 20 years will continue. The amount of land anticipated to be transferred within the family remained approximately the same from 1982 to 2002. Of the farmland going to the family, there was a significant shift between willing and giving as a means of dispersal. But, in total, land going to the family remained at roughly three quarters of the total for the two time periods. Land that was anticipated to be placed in a trust increased significantly from 6 to 13 percent between 1982 and 2002.

If these trends continue, we will see more land rented using a cash rent arrangement over the next several years. We also will see more land owned by people who live out-of-state and they will own a larger share of the land.

Two immediate issues face the state's policy makers. One is the impact of the current government programs that are attached to the land due to payments based on production. The payments have increased rents and land values in Iowa. As more land is owned by people outside the state, the benefits of the higher rents and values will leave the state. Rent, in general, will leave the state as the ownership shifts to non-resident owners.

Second, the shift to cash-rented land could make it harder for young people to enter farming. Crop share renting has been a traditional way for the owner and operator to share the production risks, and loss of that option may make entry more difficult for beginning farmers.

The current situation and the potential trends make it even more imperative that farmland owners have an estate plan. This is especially true if one of the siblings has stayed behind to farm the land, while others moved away. Too often there are disputes and hard feelings when land is transferred without a well-conceived estate plan. In some cases, the farming heirs have to quit because they don't have the financial resources to buy out the other heirs who want their share of the estate.

There are always some events that might change these trends. For example, the record land values may continue and the subsequent desire to receive the money outweighs the reasons for holding the land. If this happens, we could expect to see more land changing hands via the real estate market.

Another possibility is that the succeeding generation will not have the same affinity or feeling for the land as the second generation. In other words, the land today is being passed on to those

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who either grew up on it or still have some non-monetary attachment to the land. Their children may not have the same affection for the land and as it is passed to them, the land will again be transferred via the market rather than within the family.

No one knows what direction farmland values with take; however, odds are that the current trends will continue, and even accelerate, for the next several years. These trends have definite implications for the future of farmland ownership in Iowa.

... and justice for all

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