

## **OPPORTUNITIES FOR IOWA PORK EXPORTS**

### ***Dollars and Scents, Chapter 2***

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Iowa produces a disproportionate amount of U.S. pork exports because the state is home to so many packing plants and relatively few people. Unlike packing plants that are located in more populous pork-deficit states, Iowa-based plants do not have a convenient U.S. customer base and are consequently more open to international opportunities.

A 1993 phone survey of Iowa-based plants showed that as much as 35 percent of U.S. pork exports originate in Iowa. In addition, low Iowa feed costs coupled with some of the highest live hog prices make Iowa a particularly attractive base for new export-oriented production.

### ***Transportation Cost Impacts***

Some countries import Iowa grain and feed it to domestic swine herds. Others import the pork directly. Some, such as Japan, do both. A key variable in this equation is the cost of transporting the bulk commodity. In other words, it depends on the cost of the feed grains versus the cost of the meat. To address this, let's calculate how many pounds of grain it takes to produce one pound of exported pork.

If we assume a whole herd's feed conversion of 3.5 to 1, and a liveweight to carcass conversion of 75 percent, then it takes about 4.66 pounds of grain to produce a pound of carcass. One must then take out the bones, trimmings, feet, head, and any other items typically found on a carcass, but which are not typically exported. Assuming that only 60 percent of the carcass makes it into the boxes of boneless pork that constitutes almost all U.S. exports, then the ration of feed to product increases to 7.77.

It currently costs about 14 cents per pound to transport frozen pork from Iowa to Asian markets and about 16 cents per pound for chilled product. These rates have fallen from 30 cents per pound in 1986.

Japanese farmers pay about six cents more per pound of feed than Iowa farmers. This price differential includes land, river, and ocean transportation costs, as well as the profits retained by the middlemen who get the grain from Iowa to the Japanese producer.

Comparing the two transportation routes, it takes about 46 cents to transport the feed-grain equivalent of one pound of boneless pork, and 14 to 16 cents to transport the pork directly. All else being equal, pork exports should displace feed grain exports over time. The projections reported later in this chapter assume that transportation costs continue to favor pork exports.

### ***Exchange Rate Impacts***

Again, consider the decision faced by a Japanese food importer who must choose between U.S. and other food suppliers, and between importing grain or pork. If the U.S. dollar becomes weaker relative to other currencies, it will make all U.S. feed products more competitive.

Here's an example. Suppose it takes 20 cents worth of feed and 20 cents worth of other inputs to produce one pound of live hog. Suppose also that there are 100 Yen per dollar. For simplicity, ignore the transportation costs and assume Japanese labor and capital costs are equal to that in the U.S.

The Japanese importer must choose between buying 20 cents (or 20 Yen) worth of corn or 40 cents (or 40 Yen) worth of pork. If they buy the corn their total costs per pound of live hog will also equal 40 cents.

Now assume that the dollar increases in value so that there are 200 Yen per dollar. Now the Japanese importer must choose between buying 40 Yen worth of corn or 80 Yen of pork. But because the cost of labor and capital in Japan remains at 20 Yen per pound, the total cost of using imported corn to produce pork in Japan rises to only 60 Yen. This would swing the import decision away from imported meats and back towards whole grains. From the Japanese perspective, U.S. labor and capital costs suddenly seem very high.

So total U.S. food exports are sensitive to fluctuations in the value of the U.S. dollar. Exchange rate movements also change the decision about whether to buy U.S. pork or U.S. grain. When the dollar depreciates, the value of the U.S. capital and labor that is added to grain to produce pork becomes less expensive.

Thus, the industry that adds value to the grains becomes more competitive with a devaluation. This makes it much more likely that meat exports will increase. Unfortunately, it also implies that U.S. meat exports will slow down, or decrease, if the dollar becomes stronger. The projections that follow assume that the dollar will hold the 1996 average value.

### ***Trade Agreement Impacts***

Much of the recent increase in U.S. pork exports is due to trade agreements such as the bilateral U.S.-Japan beef/citrus agreement and the NAFTA and GATT. As trade is liberalized, countries that are well endowed with arable land can expect to export more. Countries that are well endowed with arable land and capital - as is the United States - can expect to export more pork.

The United States and Canada combined have only 5.1 percent of the world's population, but 17.2 percent of the arable land. Contrast that with China which has 21.5 percent of the world's people, but only 6.9

percent of its arable land. Any significant further liberalization of the world's trading rules could, therefore, dramatically expand U.S. pork exports, particularly into China.

These past agreements, particularly NAFTA and GATT, are very important because they open markets in Mexico, eastern Canada, Japan, and South Korea which have been closed. The combined population of these countries is about the same as the United States. Given the U.S. cost advantage in supplying these markets, it is possible to imagine a future where the U.S. would export as much pork as it produces domestically. The projections later in this chapter build in the effect of existing agreements, but do not incorporate possible new agreements.

### ***Food Preferences and Food Safety***

One of the big successes of the U.S. poultry industry was to recognize that consumers in China prefer feet and wing tips while those in Russia prefer dark meat. This has allowed the U.S. poultry industry to export about 30 percent of its production while at the same time reduce the cost of white meat sold in the U.S.

The same patterns are beginning to occur with U.S. pork exports. Variety meats are finding their way into China, sausage meat into Russia, shoulder meat into Mexico, and loins and tenderloins into Japan. There may even be a day when the U.S. produces so many hogs that we no longer need to import ribs and hams.

As the U.S. becomes more dependent on trade in meat products, the pork market will become very sensitive to the international use of sanitary barriers. Some of these will be justified, and some will be used in place of tariff barriers. U.S. pork producers will need access to scientific expertise and will need to take every precaution to avoid exposing themselves to valid sanitary barriers.

The following projections assume these efforts are successful. If this is not a valid assumption, export levels will be much lower than shown here. Recent examples of scientifically valid sanitary barriers are those imposed against the Netherlands (Swine Fever) and Taiwan (Foot and Mouth Disease) in spring of 1997.

The U.S. was a beneficiary of these problems and probably captured a \$10/cwt. advantage. Had the problems arisen here, U.S. pork producers would have experienced a \$10/cwt. fall.

### ***Competing with the World***

Economists have yet to agree on how to measure international competitiveness. This is due in part to a general assumption that markets are in equilibrium. In other words, if a country can produce pork at a lower price than its competitors, then it should see increases in exports until its price rises to world levels.

This equilibrium assumption hides one of the most interesting aspects of competitiveness. That's the process of expanding exports and production to meet the new opportunities, a phase that may take years or decades.

A common sense measure of competitiveness is the ability to produce and deliver a quality product at a cost that is less than that in the target market or those in other countries attempting to compete for that market. Production, processing, and transportation costs must all be factored in.

The U.S. food transportation sector is competitive and well capitalized. As mentioned, the cost of supplying meat from the U.S. Midwest into Asia is now less than 20 cents per pound. Although there are no formal international comparisons, it seems likely that the U.S. food transportation sector is highly competitive.

An Iowa State University study on international pork processing costs suggests that the U.S. pork processing sector has significantly lower costs than those in competing countries. Specific comparison suggests that U.S. per head slaughter costs are less than half of those in Denmark and the Netherlands. (Table 1)

**Table 1. Processing Costs**

<b>Location</b>	<b>\$1/hog</b>
Best in the United States	16
Average United States	20/25
Denmark	50
Holland	40
Taiwan	30

Table 2 shows estimates of pork production costs in Iowa and in several competing areas. Production costs range from the mid-\$30s in Iowa and western Canada to \$70/cwt. in Taiwan. Brazil has low production costs but the presence of foot and mouth disease will always restrict exports. Argentina actually imports pork, in part because it has had financial conditions that have worked against the development of a livestock industry and the necessary infrastructure.

China, which is the world's largest pork producer, has both backyard hog production and modern confinement units. The output of the backyard production is of very poor quality and is not expected to expand. The modern sector is hampered by poor feed conversion, disease problems, and expensive feed costs.

**Table 2. Cost of Production Comparisons**

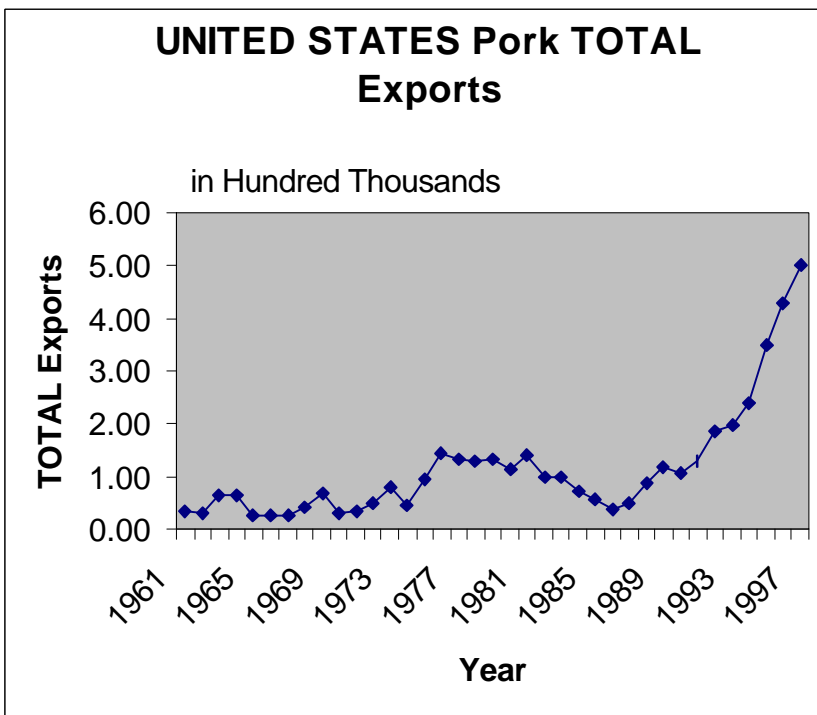
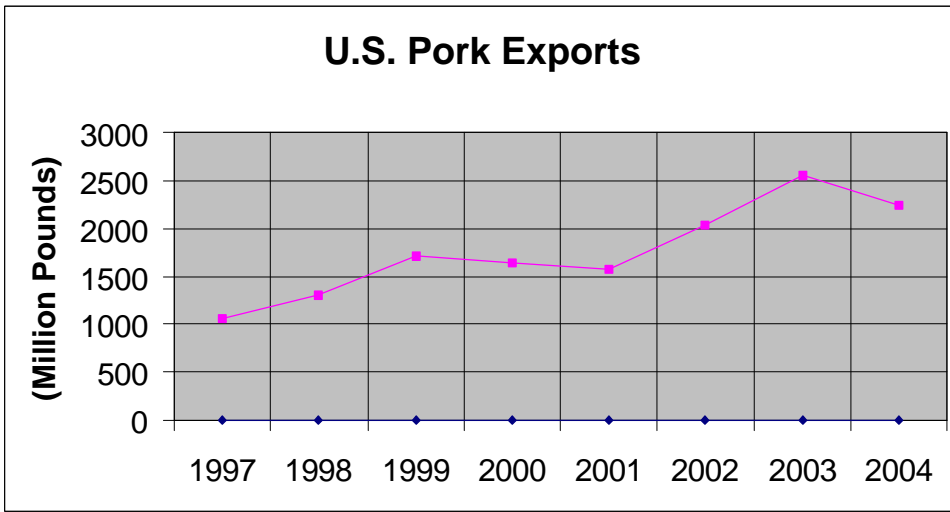
<b>Production location</b>	<b>\$/CWT</b>
Iowa Mega-or Mega like	35
Traditional Iowa	39
North Carolina Mega	37-39
Non-Iowa Traditional	42-44
Argentina	44
Australia	47
Brazil	38
China-feed only	40
China total-estimate	55-60
Colombia	52
Denmark	54
Hungary	55
Mexico	58
Philippines	70
Poland	55
Russia-feed only	55
Taiwan	70

These results suggest that the principal international competition will come from Canada and from subsidized East European consumers.

### ***U.S. Pork Export Projections***

Iowa is well set to capture a large share of the expected growth in world imports. Figure 1 shows U.S. pork exports in an upward trend since 1986. 1997 exports are expected to equal almost 559,000 or about 8% of 1997 production. Most forecasters expect this trend to continue. The USDA projects that U.S. pork exports in 2005 will be about double those seen in the recent past.

Each year the Food and Agricultural Policy Research Institute publishes a net export projection. The latest report projects an increase from 129,000 metric tons of pork in 1996 to 1,025,000 metric tons in 2003. (Figure 2)



A country-by-country analysis takes into account the cuts that will be traded as well as the way the U.S. competes in supplying these cuts (Table 3). This analysis suggests that by 2007, total U.S. exports will reach 1.8 million tons or about 24 percent of current production. These figures exclude China which could easily double this level.

**Table 3. Country Specific U.S. Projective Levels**

<b>Country</b>	<b>Projected 2007 U.S. Export Level</b>
Japan	850,000
Mexico	300,000
South Korea	300,000
Vietnam	120,000
Taiwan	100,000
Russia	90,000
Canada	70,000
Chile	20,000
Singapore	17,000
Philippines	15,000

The facts point to an increase in U.S. pork exports of 25 to 50 percent of current production during the next 10 years.

The United States, in general, and Iowa in particular, are well placed to capture a large share of the expanding world food market if Iowa is willing to allow production to expand. Iowa's production costs are low and the cost of processing and transporting Iowa produced pork is very competitive.

Based in part on this level of competitiveness, U.S. pork exports have begun to surge. Exports will probably equal 10 percent of U.S. production by 1998.

To date, a disproportionately large share of U.S. exports has originated in Iowa. This means that export-oriented hog production could allow the Iowa hog industry to expand by as much as 30 to 60 percent in the next 10 years.

But as with any forecast, a few words of caution are in order. To reach these numbers, Iowa must solve the social and environmental concerns that currently hamper growth; the U.S. dollar must remain steady; the relative costs of transporting meat and feed grains must remain at current levels; and no new sanitary barriers can be imposed against Iowa pork exports.

If these things happen, Iowa can take advantage of new export opportunities, and large parts of the state will be able to add value to locally-produced grain by feeding it to hogs.