

Cornhusker Economics

Thinking about the Corn Market

Market Report	Year Ago	4 Wks Ago	6-15-18
Livestock and Products,			
Weekly Average			
Nebraska Slaughter Steers, 35-65 percent Choice, Live Weight.	128.54	*	*
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb.	164.05	176.73	168.80
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb.	153.77	145.75	*
Choice Boxed Beef, 600-750 lb. Carcass.	250.86	230.61	223.52
Western Corn Belt Base Hog Price Carcass, Negotiated	86.81	63.64	82.22
Pork Carcass Cutout, 185 lb. Carcass 51-52 percent Lean.	94.79	71.74	81.73
Slaughter Lambs, woolled and shorn, 135-165 lb. National.	NA	152.57	156.95
National Carcass Lamb Cutout FOB.	425.29	378.93	379.36
Crops,			
Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu.	3.69	4.31	4.43
Corn, No. 2, Yellow Columbus, bu.	3.44	3.70	3.39
Soybeans, No. 1, Yellow Columbus, bu.	8.59	9.23	8.35
Grain Sorghum, No.2, Yellow Dorchester, cwt.	5.81	5.83	5.20
Oats, No. 2, Heavy Minneapolis, Mn, bu.	2.98	2.87	2.81
Feed			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.	135.00	*	170.00
Alfalfa, Large Rounds, Good Platte Valley, ton.	72.50	*	100.00
Grass Hay, Large Rounds, Good Nebraska, ton.	70.00	*	102.50
Dried Distillers Grains, 10 percent Moisture Nebraska Average.	100.75	165.00	39.00
Wet Distillers Grains, 65-70 percent Moisture Nebraska Average.			
* No Market			

It was twenty years ago today, in the late 1990s, that the United States was the dominant corn producer and exporter in the world, producing about 240 million metric tons (40 percent of the world total) and exporting close to 50 million metric tons (65 percent of the world total). Brazil, on the other hand, was a minor player in the corn market, producing approximately 25 million metric tons (4 percent of the world total) and exporting barely anything. Many changes have happened and we have a different corn market today. For the 2018/19 crop year, USDA projections show the United States producing 356 million metric tons (35 percent of the world total) and exporting 53 million metric tons (33 percent of the world total), and Brazil producing 96 million metric tons (9 percent of the world total) and exporting 31 million metric tons (20 percent of the world total). The United States is still the largest producer and exporter in the world, but its position is not as dominant as it used to be two decades ago. Brazil has quickly emerged as the second largest exporter and third largest producer in the world (Ukraine has also become an important player in the corn market, but this is a story for another time).

The extraordinary expansion of Brazilian exports has been driven primarily by its ability to harvest two crops per year and by the strong growth of its winter crop. Brazil has traditionally planted corn in September-December and harvested in January-April, which is the “summer crop.” It is concentrated in the south and southeast, and predominantly used to meet domestic demand for feed. In the 1980’s, Brazil started to plant corn also in January-March and harvest in May-August, which is the “winter crop.” The winter crop started small and accounted for about 10 percent of total production

in Brazil in the 1990s. Back then, it was commonly called *safrinha* (small harvest) by Brazilian farmers. In the 2000's, producers in the fast-growing Brazilian center-west started to invest in the winter crop and before long there was nothing small about *safrinha* anymore. Nowadays, the winter crop accounts for approximately 70 percent of the Brazilian corn production, is predominantly grown in the center-west and mostly shipped to the international market.

The rapid growth of Brazil's winter crop has been reshaping the corn market within Brazil and in the international market. I have been working with a colleague from Brazil on these issues, and we have found significant changes in the seasonality of corn prices and basis in Brazil in the last few years¹. We have also found a closer relationship between corn prices in Brazil and in the United States in recent years². A study from the ERS-USDA discusses that not only has Brazil rapidly increased its corn exports but also its main export season now coincides with the period when the majority of the U.S. corn enters the international market³. This study discusses data suggesting changes in the export seasonality of U.S. corn due to this competition with Brazilian corn, with the primary exporting period shifting from October-January to February-April (which could put downward pressure on U.S. corn prices at harvest).

However, corn exported by Brazil comes mainly from the country's center-west, and then its competitiveness in the international market is grossly impacted by the transportation infrastructure in Brazil. A study from the ERS-USDA illustrates how the notoriously poor infrastructure in Brazil hurts its competitiveness in the world market⁴. They calculated transportation costs of corn exported from the United States, Argentina and Brazil (large exporters in the world market) to Egypt and Japan (large importers in the world market). Table 1 shows these numbers for corn exported to Japan (numbers for corn exported to Egypt are basically the same). For each country, they started with farm price (which essentially reflects production costs) and added

transportation, handling, and other costs involved in taking the grain from the farm to the export port. Specifically for Argentina, they also accounted for export taxes levied by the Argentine government and other export restrictions occasionally imposed, which represent extra costs for farmers (policy-related costs). Farm price plus the cost to move grain from the farm to the port gives us the FOB port price, which is the corn price at the port after it has been loaded onto the vessel. Finally, they added ocean transport cost to find the landed cost of corn in Japan, i.e. the price of corn from the United States, Argentina and Brazil when it arrives at the port in Japan.

As can be seen in Table 1, farm price is generally lower in Argentina and Brazil, reflecting lower production costs compared to the United States. Hence, they found that Argentina and Brazil are more competitive than the United States on the production side. When it comes to inland transport/handling costs, the numbers are roughly similar between United States and Argentina, but strikingly higher for Brazil. Brazilian costs are based on the center-west, where most of Brazilian corn is grown. The distance to the export ports on the east coast is about 1,000 miles, and the grain is hauled mostly by trucks through poorly-maintained highways. The mode of transportation and the poor infrastructure explain the high transportation cost for Brazil. They explain why, despite its competitiveness on the production side, Brazilian corn fails to be competitive in the world market. On the other hand, competitiveness of Argentine corn is affected by the country's policy-related costs. Finally, ocean transport costs are basically the same across the table and have no significant impact on the relative competitiveness of the three countries.

The numbers in Table 1 essentially tell us that U.S. corn manages to be more competitive in the world market

Table 1: Estimated cost of transporting corn to Japan, 2008-2012 average (US \$/metric ton)

	From U.S. (Midwest)	From Argentina (Heartland)	From Brazil (Center-west)
Farm Price	204	138	182
+ <i>Inland transport/handling cost</i>	39	43	102
+ Policy-related costs	-	104	-
= FOB port price*	243	285	284
+ Ocean transport cost	53	61	57
= Landed cost**	296	346	341

Source: USDA⁴.

* Corn price at the port in the country of origin after it has been loaded onto the vessel.

** Corn price at the port in the destination country.

because of the relatively low-cost and efficient transportation system in the United States (as opposed to the high-cost and inefficient transportation system in Brazil) and the absence of policy-related costs as in Argentina. However, this picture may not last forever. There have been efforts to improve the transportation system in Brazil. With more investments in infrastructure, improvement of highway conditions in the center-west and development of inland waterways, Brazilian grain exports can become more competitive. With respect to Argentina, the government has recently eliminated export taxes on corn. Hence, there should now be a very large reduction of the policy-related costs in Table 1, helping make Argentine corn more competitive.

In conclusion, the world corn market has been changing and more research is needed to fully understand how these changes are reshaping the market and what the implications are for grain producers, merchandisers, traders and other market participants. Further, there may be even more changes in the future and we need to follow closely the next developments around the world. Brazil, for instance, could become a major force in the corn market. A study from the Brazilian Agricultural Research Corporation (Conab) estimates that under proper weather conditions and with appropriate financial and technological support, Brazilian producers would be able to more than double their winter corn production in the next decade⁵. If this really happens and is accompanied by improvements in infrastructure, there could be large implications to the world market. Once I heard that “When Brazil decides to do something, it does it well, it does it big, and it does it quickly.” Things in Brazil are definitely not as easy as they may sound in this statement, but there is still some truth to it (take the soybean market as an example).

Although it is challenging to identify the new major developments in the corn market, it is at least important to know where we should be focusing our attention. In this article, we talked about the South American side of the corn market. However, we should also keep an eye on Europe, as I mentioned in the beginning that we could discuss the growth of corn production and exports in Ukraine another time. Just as importantly, we might probably want to add another point to our list: should we also discuss how to enhance the competitiveness of U.S. corn in the world market before our competitors get even closer to us?

References

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- ³ Ed Allen and Constanza Valdes, “**Brazil's Corn Industry and the Effect on the Seasonal Pattern of U.S. Corn Exports**”, AES-93, U.S. Department of Agriculture, Economic Research Service, June 2016.
- ⁴ Birgit Meade, Estefanía Puricelli, William McBride, Constanza Valdes, Linwood Hoffman, Linda Foreman, and Erik Dohlman, “**Corn and Soybean Production Costs and Export Competitiveness in Argentina, Brazil, and the United States**”, EIB -154, U.S. Department of Agriculture, Economic Research Service, June 2016.
- ⁵ Elena C. Landau, Jose Carlos Cruz, Andre Hirsch, and Daniel P. Guimaraes, “**Expansão Potencial Da Produção De Milho 2ª Safra No Brasil No Sistema De Sucessão Soja-Milho Considerando O Zoneamento De Risco Climático 2014/15**”. Boletim de Pesquisa e Desenvolvimento 124, Embrapa (Brazilian Agricultural Research Corporation), December 2015.

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