

Comparing Grain Transportation in the United States and Argentina

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Whether an individual or nation can compete in the global marketplace hinges on the ability not only to produce materials and goods demanded by customers but also to deliver those materials and goods in an efficient, timely, and safe manner. The transportation and logistics systems that serve a market are critical given that transportation costs typically represent more than one-half of a commodity's total landed cost. The agricultural sector of the United States enjoys considerable advantages in grain movement and storage, helping to explain the overall trade advantage of the United States over Argentina in common export markets. It is estimated that higher freight rates and inadequate transportation capacity result in a 10 to 20 percent increase in the cost of South American exports relative to the United States. It appears, however, that cost and performance differences are narrowing between the United States and Argentina. Argentina's rapid progress promises to diminish the advantage the United States has.

MOTOR TRANSPORTATION

Motor transport almost exclusively serves as the mode for transferring harvested grains from the farm to the next-destination customer, usually either an elevator location or a processor. Although, the relative coverage of paved highways (as

shown in Table 1) is fairly comparable across the two countries, the quality of U.S. roadways generally surpasses that of Argentine roadways. While roadway conditions do not impede grain transfer directly, they can lead to more frequent truck and equipment failure, transit time uncertainty, and overall higher costs. Continued privatization of the roadways in Argentina will increase the number of paved roads and improve existing ones, but this will result in high tolls paid by the users of the roadways. These tolls can easily exceed costs for fuel and other operating expenses along selected routes.

Overall, the general health of motor operations in both countries is relatively sound. However, growing congestion within major metropolitan areas and near port locations is a problem in both countries. Continued privatization of roadways in Argentina and intensified competitive pressures among motor carriers will result in continued efficiency gains in agricultural trucking in that country.

RAIL TRANSPORTATION

The unavailability of rail service in Argentina and its relatively poor service performance have limited its use as a primary means of grain movement. Five freight rail companies operate over Argentina's 34,572 kilometers of track. A major problem with the rail system is the variety of gauges (1,000 meters, 1,435 meters, and 1,676 meters) found among the respective rail lines. The burden of having to unload, transship, and reload shipments across rail lines creates prohibitive costs. In addition, the Argentine rail lines originally constructed by the British, French, and Germans during the late-1800s through the mid-1900s have not been well maintained over the past several decades, with many key segments inoperable today. At an estimated expense of \$200,000 per kilometer to

build a new line and \$100,000 to repair one kilometer of existing line, the challenge of revitalizing the several thousand kilometers of rail in need of replacement or repair becomes apparent.

Despite these challenges, Argentina's rail freight traffic has increased by more than 10 percent in each of the past five years. Recent estimates indicate that 20 percent of Argentina's grain production moves by rail at some point. As a result of improved utilization and efficiencies, the cost of rail transportation has dropped by 25 percent in Argentina. Argentine rail operators expect business to increase dramatically over the next five years.

Unlike Argentina, the United States has traditionally relied heavily on its rail network to move grains from consolidation points to processors or export ports. Table 2 shows an emerging shift in modal usage for U.S. grain shippers in recent years, however. The early 1990s marked a general preference for truck transportation for movements outbound from the country elevator. This is true for all major grains except wheat, which continues to rely greatly on rail transport.

In sum, Argentina is making great efforts to rejuvenate its rail systems. Modernization efforts seem to be resulting in significant performance improvements and a substantial shift in traffic from motor to rail service. The United States, on the other hand, is relying somewhat less on its extensive rail network. Recent figures indicate that motor transportation has replaced rail as the preferred mode for movements from the elevator to processor or export port locations.

WATER TRANSPORTATION

The significance of motor and rail operations in all three settings has been clearly demonstrated but water transportation cannot be overlooked.

**TABLE 1. COMPARATIVE GEOGRAPHY
AND INFRASTRUCTURE**

	Argentina	United States
Landmass (sq. km)	2.8 million	9.3 million
Paved highways (km)	57,000	255,650
Total rail trackage (km)	34,572	236,035
Navigable waterways (km)	11,000	41,935
Total grain storage (mt)	53.9	264

Sources: Bureau of Transportation Statistics website (www.bts.gov/programs/itt/latin/south/), U.S. Department of Transportation for Argentina); *The Pocket Guide to Transportation 1998*, Bureau of Transportation Statistics, U.S. Department of Transportation (for U.S.).

Table 2 shows that approximately 20 percent of all U.S. grain movements from the point of consolidation to the processor or export port location are made by barge. In addition, more than 90 percent of U.S. grains moved by barge are ultimately destined for export markets. Barges serve as the primary mode of export movement for U.S. corn and soybeans (rail maintains a 60 percent share of wheat export movements). The use of waterways for export delivery is even more pervasive in South America.

Argentina and Brazil are currently looking to expand their already extensive network of navigable inland waterways. Significant investment in recent years extends the reach of barge and vessel traffic inland from the deep rivers of the region's major port cities along the Atlantic coast. Perhaps the most

ambitious, and certainly the most controversial, of all South American transportation developments is the creation of the Rio Paraguay-Rio Paraná Hidrovia. The Hidrovia, or "water highway," is a multinational effort to extend the reach of inland

navigation from Uruguay's Nueva Palmira to Cáceres in the Mato Grosso region of western Brazil, spanning 3,442 kilometers through all four Mercosur nations (Argentina, Brazil, Paraguay, and Uruguay) as well as Bolivia. The extensive dredging and realignment in South American rivers is anticipated to have a significant economic impact on producers and carriers alike. It is estimated that transportation costs for upstream shippers will be cut in half by using the river system rather than rail or truck.

Progressive barge carriers in Argentina are already achieving considerable efficiencies within the nation's current network of navigable waterways. Foreign investment has dramatically expanded barge and towing capacity while also improving the navigability of large tows. Satel-

lite tracking and guidance systems are helping South American barges to operate with efficiencies on a par with those of the United States. U.S. shippers and barge operators, on the other hand, are concerned with an aging waterway infrastructure. After several decades of extensive use and reliance on the river system for efficient bulk materials movement, the rivers are in need of renewed attention. Special concern is directed toward the aging lock system of the Mississippi River. The Mississippi serves as the backbone of efficient grain movement in the United States. The proximity of growing areas for corn and soybeans to the Mississippi and its tributaries make the system imperative for low cost exporting. The ability to quickly and efficiently access port facilities located at the mouth of the Mississippi River in Louisiana has proven critical to the export success of these U.S. crops.

If the United States wants to maintain the comparative advantage that it has long enjoyed with inland navigation, it will need to make a significant investment in its aging lock and dam system. This holds particularly true given the aggressive advances South American shippers are making to their own river system.

Continued on page 8

A Farm Policy Objective Continued from page 3

would guide the actions of legislators. Those policy tools that achieved the desired objective at least cost to society would be selected. In theory, if policy were made in this manner, the greatest good for the greatest number of people would result, and taxes would be used efficiently.

But to suggest that policy is made with an eye towards only the efficient use of taxpayer's money is an oversimplification. Every policy involves winners and losers. Rather than passively accepting their fate in

the name of policy efficiency, prospective losers often join together and lobby legislators for a policy that cuts or eliminates their losses. Their success in changing policy depends on the political pressure that they can generate relative to 1) the pressure that prospective winners from a policy can generate, and 2) the public pressure on legislators to adopt policies that meet broad public policy objectives.

As the search for farm policy objectives continues, agriculture needs to address head-on the question of what broad public policy objectives are being met through the

federal support of agriculture. These objectives can be stated in either regional terms (such as enhanced water quality in a watershed) or in national terms (such as income support for food producers). But if agriculture is to compete successfully for expanded federal dollars in the next farm bill, urban legislators will need to be convinced why more federal support is needed and what is the ultimate objective of such support. An annual declaration of agricultural emergencies can go on only for so long before the emergency situation is recognized for what it is: the normal course of events. ♦

TABLE 2. AVERAGE ANNUAL GRAIN TONNAGE BY MODE, U.S.

Grains/Years	Motor	Rail	Barge	Total
(thousand tons)				
Corn	41,634.0	48,677.2	31,980.0	122,291.2
Wheat	8,760.2	48,186.6	14,574.8	71,521.6
Soybeans	28,054.0	11,295.4	16,973.8	56,323.2
Other grains	10,724.4	13,700.0	2,681.6	27,106.0
Total, 1981-85	89,172.6	121,859.2	66,210.2	277,242.0
Corn	66,132.4	62,601.4	31,997.4	160,731.2
Wheat	11,034.4	44,048.2	12,231.6	67,314.2
Soybeans	25,326.4	14,995.4	15,722.4	56,044.2
Other grains	15,543.2	15,314.6	3,318.4	34,176.2
Total, 1986-90	118,036.4	136,959.6	63,269.8	318,265.8
Corn	84,779.4	63,351.6	36,673.6	184,804.6
Wheat	13,965.8	42,872.2	13,188.2	70,026.2
Soybeans	29,789.0	15,356.2	17,632.2	62,777.4
Other grains	13,516.2	13,053.0	3,223.2	29,792.4
Total, 1991-95	142,050.4	134,633.0	70,717.2	347,400.6

STORAGE

The United States enjoys far greater grain storage capacity than Argentina. In fact, storage capacity on South American farms is virtually nonexistent. Rather than building storage facilities on the farm, most Argentine farmers prefer to invest in improved production. The current thinking among South American farmers seems to be to produce at maximum levels and rely on quicker access to market rather than storage. As a result, farmers continue to invest in technologies that improve

yield, accelerate harvesting, and facilitate delivery to the elevator.

Given this rush to deliver grains upon harvest, the worst bottleneck in commodity movement and storage throughout Argentina is that which occurs at the country elevators during peak harvest. Literally hundreds of trucks can linger for several days awaiting an opportunity to unload at the elevator. The transportation vehicles themselves serve as an important form of temporary storage. Commodities that cannot be immediately transported must often

sit exposed to the elements until a truck is available.

SUMMARY

A review of the comparative transportation and logistics systems demonstrates that U.S. agricultural shippers maintain a significant advantage over their peers in Argentina. This advantage in movement and storage capacity is substantial enough to create an overall comparative advantage in the serving of common export markets. There is evidence, however, that the gap is closing. While the U.S. has benefited from several decades of substantial public and private investment, yielding perhaps the world's most advanced logistical infrastructure, Argentina has languished from minimal development of its own infrastructure. An influx of investment from domestic and foreign sources is largely responsible for Argentina's diminishing disadvantage in movement and storage. The privatization movement has achieved great progress in a very short time. The rate of change in the Argentine logistics environment is anticipated to remain high, well into the foreseeable future. As Argentina's infrastructure develops, time-to-market and costs will be reduced simultaneously, enhancing the country's already considerable competitive position in common export markets. ♦

Iowa's Ag Situation Continued from page 4

we have been in the reduction phase of the cattle cycle for the past four years, with a smaller cow herd, where are all of the feeder cattle coming from?" The front-end supplies (cattle on feed more than 120 days) continue to grow along with the average carcass weights of slaughter steer, which reached 851 pounds for the first week of September. It will take

well into the fourth quarter to work through the current backlog; after that feeder calf supplies, and ultimately fed-cattle supplies, are expected to tighten as producers start to retain heifers to rebuild the cow herd. Fed-cattle prices should recover as we move toward 2001 and remain strong as rebuilding takes hold.

The pork sector is facing some of the same problems as the beef sector: slipping demand and heavy slaughter weights (brought on partially by low

feed costs), as well as the seasonal increase in slaughter that is expected to top 2 million head a week later in November and December. Although slaughter numbers are expected to stay below last year's levels, heavy weights will offset decreased volume, resulting in a production level similar to that in 1999. Live prices are expected to continue to slip through the fourth quarter before seasonally climbing toward the upper \$40/cwt. late next spring. ♦