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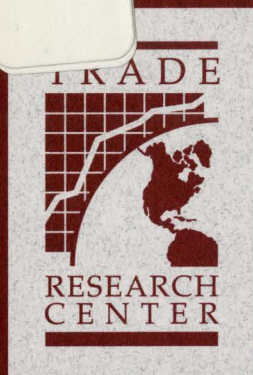
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# The Economics of World Wheat Markets: Implications for North America

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## North America and the World Grain Market

*D. Gale Johnson*

The increase in world grain production in the past half-century was unparalleled in the history of the world. In that same period, the absolute increase in the world's population exceeded that of all previous history—it more than doubled. The supply of grain more than kept up with the rapid growth of demand—the per capita supply of calories in developing countries increased by 27 percent between the early 1960s and the early 1990s while the real price of grain in international markets declined by at least a third ( Fig. 1). In developing countries, grain supplies a very large fraction of all calories consumed, often as much as 80 percent.

**The real price of grain declined by one-third between the early 1960s and the 1990s.**

Research on the role of North American grain production in world markets should emphasize the following:

- the (limited) role of land and diminishing returns to land in influencing the world supply of grain;
- improving our understanding of the role of policies in influencing grain production, especially in developing countries;
- developments in supply and demand for grain in Central and Eastern Europe;
- prospective growth in demand for grain, with emphasis on the use of grain by livestock;
- understanding the probable increase in grain price variability due to policy changes in the United States and the European Union;
- improving our models of short-run price variability; and
- factors affecting the comparative advantage of grain production in North America.

The expansion of grain production since 1960 has been largely achieved through higher yields—the substitution of other inputs for land. Consequently the roles of land and the diminishing returns to land have been significantly attenuated by the results of research and the availability of nonfarm sources of inputs, such as chemical fertilizer. In developing countries, improving the productivity of labor may be more critical in determining the welfare of rural people than any limitation imposed by land. Over the next quarter century, improving the productivity of the world's land by 75 percent will probably meet the increase in demand

for grain, but farm labor productivity will need to treble if there is to be rapid economic growth in developing countries.

The large differences among developing countries in the rate of growth of grain production over the past several decades has not been due primarily to differences in natural resources, but has resulted from differences in the structure of policies affecting agriculture and grain production. Where governmental policies have been supportive, grain production has not only kept up with demand growth but has exceeded it; where governmental policies have exploited agriculture through low prices for farm products and limited commitment to research, per capita grain production has grown slowly, if at all. Policies count—and count a great deal. The evidence supports the conclusion that national policies, including research support, have had a much greater influence on grain production than has the amount of available land.

The world grain market will be significantly influenced by developments in Central and Eastern Europe. In the 1980s, the region was a major importer of grain; it is currently at most a small net importer. The change in net trade in grain has resulted primarily from the decline, by approximately a third, in the production of meat and milk. Under the socialist system, these products were heavily subsidized and most of these subsidies have been eliminated. Livestock production has become very unprofitable and output has fallen. The decline in real per capita income also had an important effect, but the major source of the decline in meat and milk production resulted from eliminating the consumer price subsidies.

The growth in world demand for grain will be significantly slower in the next two or three decades than it was in the past three. This is due primarily to a slowdown in population growth. To some extent the slower growth of population will be offset by increased demand for grain as feed. How much the demand will grow will depend on the increase in demand for livestock products and the rate of improvement in the productivity of feed. Data from China indicate that there has been a major improvement in feeding efficiency in pork production, which has held in check the increase in feed required for a large increase in meat production.

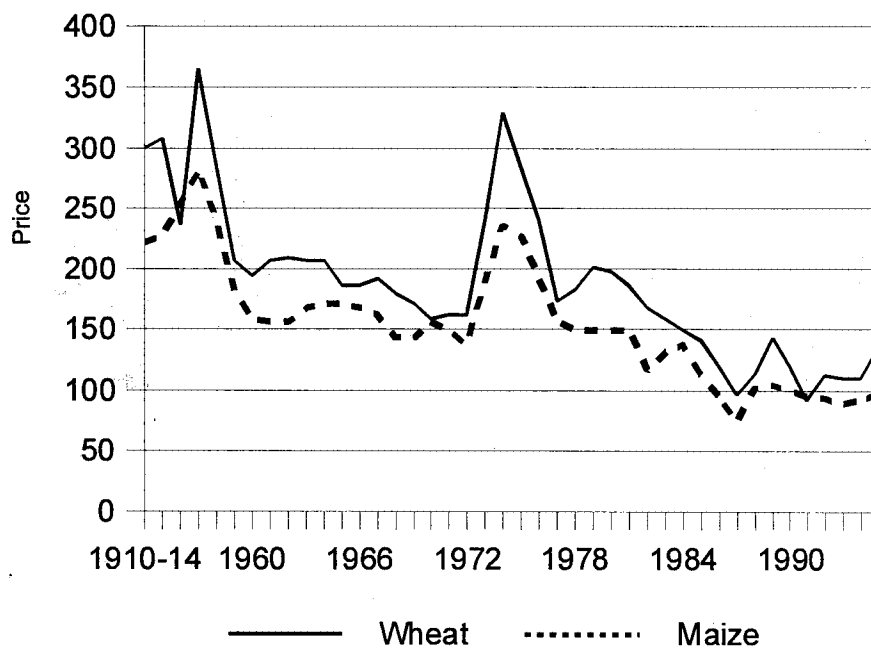
In the past, the price policies in North America and the European community have contributed to the achievement of a relatively high degree of price stability, with some notable exceptions, such as 1972 and 1973. The stability was due to the large stocks that were acquired as a result of price support operations. Policy changes that have occurred since 1985 have resulted in a substantial reduction in the level of publicly held stocks. Private stocks cannot function to provide the same degree of price stability that existed when governmental stocks were large. Private stocks are held in anticipation of making money; this was never the objective of the public stocks. Since holding stocks is expensive, it can be anticipated that price variability will be greater in the future than it has been in the past.

We need to better understand the reasons for the comparative advantage of grain production in North America. Part is clearly due to the efficient organization of

**The growth in world demand for grain will be significantly slower in the next two or three decades than it was in the past three.**

farm production units, to intelligent and well-educated farmers, and to bountiful supplies of land suitable for grain production. These elements are important, but it needs to be recognized that North America is endowed with the world's best infrastructure supporting grain production. The infrastructure consists of research, transportation, marketing institutions, repair services, and competitive input suppliers that have a tradition of adapting to change, whether it be in fertilizers, seeds, pesticides, or farm machinery.

**Figure 1. Real Export Prices for Wheat and Maize, United States, Selected Years, 1910-1996 (1982 \$ per ton)**



**About the Author**

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