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The Potential Effects of Increased Demand for U.S. Agricultural Exports on Metro and Nonmetro Employment

Steven Zahniser, Tom Hertz, Peter Dixon, and Maureen Rimmer

What Is the Issue?

ERS estimates that U.S. agricultural exports supported about 1.1 million full-time, civilian jobs in 2015. Yet, the economic linkages between U.S. agricultural exports and rural employment are not fully understood, particularly in the metro and nonmetro regions of each State and among production agriculture, food and beverage manufacturing, and other sectors of the economy. In this report, ERS researchers use a model of the U.S. economy to explore the possible economic effects of a 10-percent increase in foreign demand for U.S. agricultural exports, including in those various regions and economic sectors.

What Did the Study Find?

A hypothetical 10-percent increase in foreign demand for U.S. agricultural exports results in a 6.7-percent increase in the volume of U.S. agricultural exports, worth \$9.7 billion at 2013 prices. (This increase in export volume (6.7 percent) is smaller than the increase in export demand (10 percent) because the demand stimulus is partially offset by an increase in the prices of agricultural exports.)

In addition, total employment in all sectors of the U.S. economy (agricultural and nonagricultural) increases by about 41,500 jobs, above and beyond the approximately 1.1 million jobs currently supported by U.S. agricultural exports.

At the regional level, our analysis shows employment increases in 32 of the 50 States and in the District of Columbia. The proportionate increase in nonmetro employment is about four times larger than the corresponding increase in metro employment (0.09 percent versus 0.02 percent).

Regions whose share of total employment is greater in the agri-food sector exhibit a stronger positive change in total employment due to the hypothetical 10-percent increase in foreign demand for U.S. agricultural exports. However, regions with a greater share of both mining and non-food-and-beverage manufacturing exhibit a strong negative change in total employment. A region's commodity mix in agri-food production and the presence of an international port also influence the regional employment results, but to a far lesser extent.

ERS is a primary source of economic research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.

In our simulation, the expansion of export demand also leads to an increase in the exchange rate, which makes U.S. goods more expensive and reduces the competitiveness of products in trade-exposed industries. While employment would increase in some sectors, especially in export-oriented agricultural production and food and beverage industries, it would decrease in other trade-exposed industries, such as mining and manufacturing. On the other hand, an increase in the price of exports relative to the price of imports stimulates U.S. employment overall due to the increase in gross national expenditures. But, even within the agri-food sector, not all industries would expand. For example, land-intensive, non-export-oriented industries such as sugarcane and sugar-beet production would contract slightly.

How Was the Study Conducted?

This report relies upon the U.S. Applied General Equilibrium (USAGE) model, a computable general equilibrium (CGE) model of the U.S. economy. The study focuses on employment effects at the economic sector and metro and nonmetro regional levels—a type of analysis for which the USAGE model is well suited. The model provides detail on over 500 economic sectors, both agricultural and nonagricultural. However, we concentrate on the agricultural and food and beverage sectors that produce agricultural exports, as defined by USDA.

The model includes a regional extension that allows the national results to be disaggregated into State- and county-level results. We then reaggregate the county-level results into groups of nonmetro and metro counties within each State in order to form a model with 98 regions—94 regions for the 47 States that have both metro and nonmetro counties, 3 regions for the States with only metro counties, and 1 region for the District of Columbia.