

Factors Contributing to Changes in Agricultural Commodity Prices and Trade for the United States and the World

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What Is the Issue?

Expected agricultural commodity prices can influence production decisions of farmers and ranchers on planted/harvested acreage of crops or inventory of livestock and, thus, affect the supply of agricultural commodities. Commodity price changes also affect farms' financial well-being, for example sustained periods of low commodity prices reduce farm revenues and cause farmers to increasingly rely on credit, making them vulnerable to higher interest rates and other changes to economic conditions. Sustained periods of high commodity prices can contribute to increases in farm revenues and farm operator resilience to changes in economic conditions. Changes to commodity prices also have implications for food security: sustained low prices increase consumers' ability to purchase adequate quantities of food, while sustained high prices decrease their food security, particularly in developing countries. This study examines the changes in demand and supply factors that contribute to higher or lower agricultural commodity prices and estimates their effects on commodity markets in terms of trade. A better understanding of these factors and their impacts can inform and enhance public and private decision making on issues relating to agricultural markets.

What Did the Study Find?

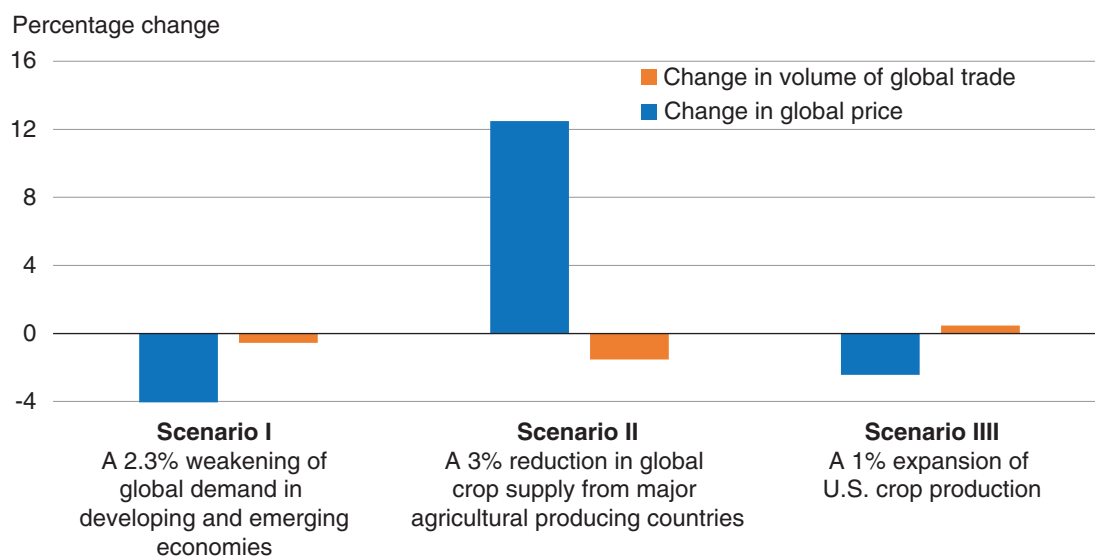
Global and U.S. macroeconomic and agricultural conditions contributed to commodity price instability. Key findings from three simulated scenarios based on historical trends follow:

- The first (demand-side) scenario simulates weaker economic growth. It assumes a 2.3-percentage-point slowdown in Gross Domestic Product (GDP) growth per year over 2018-19 to 2021-22 in developing and emerging economies only, based on the average annual rate of GDP slowdown experienced only in these countries during 2008-11. Results suggest that this GDP slowdown would lead to commodity prices falling by an average of 4 percent per year, with the largest decreases for soybeans, beef, and poultry. Despite falling prices, the volume of global trade would remain stable.
- The second (supply-side) scenario simulates a downturn in supply based on recent historical trends. It assumes a 3-percentage-point annual decline in crop area harvested for major agricultural commodity-producing countries. Results suggest that commodity prices would increase by an average of 12 percent per year from 2018-19 to 2021-22, with the largest increases for corn and wheat. The volume of global trade would decrease by an average of 2 percent per year.

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.

- The third (supply-side) scenario simulates an upturn in supply. It assumes an increase in U.S. crop area harvested by an average of 1 percent per year, based on average production for 2011-16. Results suggest commodity prices decline by an average of 2 percent per year over 2018-19 to 2021-22, with the largest drop for soybeans. Average global trade volume would increase by less than 1 percent per year over the simulation period.
- Prices for many agricultural commodities declined between 2014 and mid-2019. Weak global economic growth and slowing growth in biofuel mandates contributed to declining agricultural commodity demand. Additionally, the continued expansion of cropland and improved yields, coupled with declining energy and oil prices, led to higher global commodity supplies. In sum, contraction in demand-side factors and expansion in supply-side factors resulted in falling global commodity prices. However, some of these demand and supply factors moved in opposite directions during 2000-07 and 2011-12, leading to global agricultural commodity price hikes.

Global prices are more sensitive than global trade volume to changing global macroeconomic and agricultural production



Source: USDA, Economic Research Service simulation using Country-Commodity Linked System.

How Was the Study Conducted?

This study summarizes the factors that contribute to changes in commodity prices. Three scenarios are simulated using ERS's Country-Commodity Linked System of models, which provides estimates of supply, demand, trade, and market-clearing world prices for USDA's annual 10-year agricultural projections. These projections serve as the baseline scenario. Results are presented for commodity prices and global and U.S. commodity trade for the near term (2018-19) and medium terms (2019-20 to 2021-22).