U.S. DEPARTMENT OF AGRICULTURE

A report summary from the Economic Research Service April 2021

Economic Crises and U.S. Agricultural Exports

William M. Liefert, Lorraine Mitchell, and Ralph Seeley

What Is the Issue?

A large share of U.S. agricultural output is exported, and economic crises in the foreign markets for these exports have been a common event during the past few decades. Economic crises in foreign markets can reduce their agricultural imports, which in turn can lower U.S. agricultural exports, production, and farm income. These crises can hit both developing and developed market economies, and the world economy is vulnerable to crises that simultaneously affect multiple countries. Examples are the East Asian Crisis of 1997-98 (which coincided with a major economic crisis in Russia), the world financial/economic crisis of 2008-09, and the evolving world coronavirus (COVID-19) crisis of 2020-21. In developing countries and emerging markets, the triggers for economic crises include a fall in the world price of a major commodity export–such as oil–or debt problems, while in developed countries, macroeconomic and financial imbalances and weaknesses are often the root cause.

What Did the Study Find?

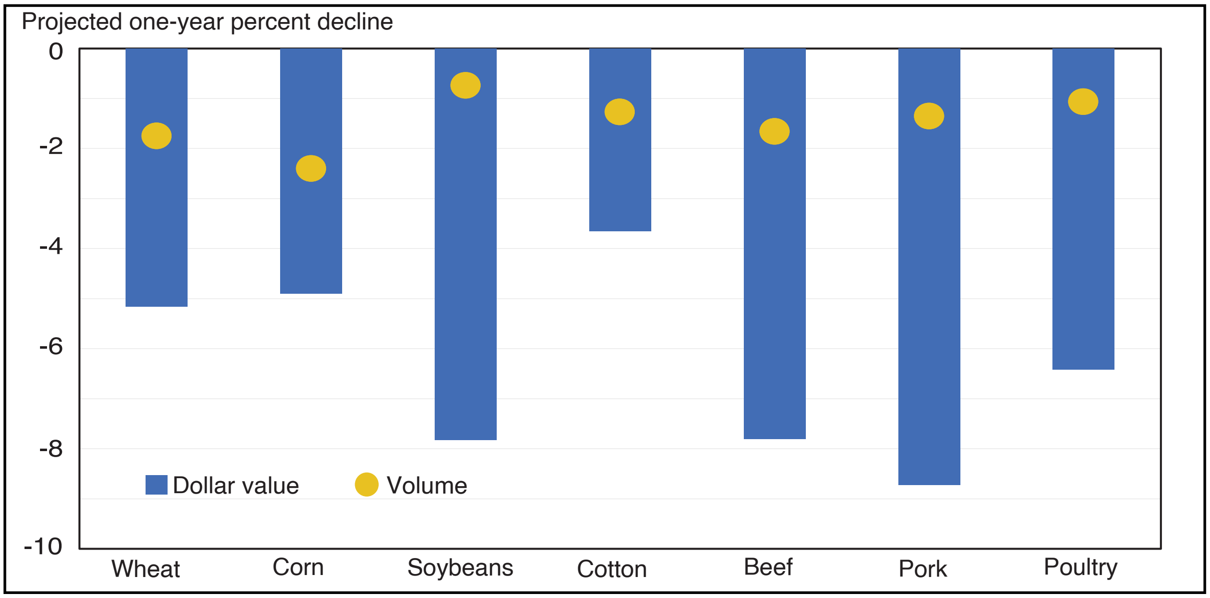
Economic theory predicts that an economic crisis will typically reduce a country's agricultural imports (as well as total imports) in two main ways: lowering gross domestic product (GDP) and national income, which decreases the demand for imports; and depreciating the country's currency, which reduces demand for imports by making them more expensive relative to domestically produced, substitute products. The empirical results of this study find that during past crises, countries' agricultural imports declined substantially, including those from the United States.

In the East Asian Crisis of 1998, major foreign markets hit by the crisis collectively reduced their agricultural imports from the United States by 16 percent (measured in current U.S. dollars). In the world economic crisis year of 2009, the drop in agricultural imports from the United States by the major foreign markets hit by the crisis was collectively 17 percent. The examination of past crises also supports the economic argument that because the demand for food is less responsive to changes in income and price than most other types of goods, the drop in countries' agricultural imports during an economic crisis is usually less than that of imports overall.

Projections using a USDA, Economic Research Service (ERS) model of world agricultural trade show that a future concurrent crisis in the 8 top U.S. foreign agricultural markets (as of 2016-17) would decrease U.S. exports considerably. Assuming that a crisis decreases countries' gross domestic product by 5 percent and depreciates their currency by 10 percent relative to the dollar, this study projects that a simultaneous crisis in these 8 countries would lower the total value of U.S. exports of grain and oilseed products by 6.8 percent, and that of meat by 7.3 percent, not just to these 8 countries, but worldwide. The crisis would reduce the value of pork exports by a projected 8.7 percent and that of beef and soybeans by 7.8 percent.

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.

Simultaneous future crises in major foreign markets would reduce U.S. agricultural exports



Note: The figure gives the projected percent decline in export values and volumes if a crisis were to hit simultaneouly the 8 largest foreign markets for U.S. agricultural exports (in 2016-17; Canada, Mexico, China, the European Union (which includes the United Kingdom), Japan, South Korea, Indonesia, and Taiwan). A crisis is characterized by a 5-percent fall in the importing countries' gross domestic product and a 10-percent real depreciation of their currency against the dollar, and the export effects are for one year of crisis.

Source: USDA, Economic Research Service projections using ERS Country-Commodity Linked (CCL) model.

As expected, the projections reveal that U.S. agricultural exports are more negatively affected when multiple foreign markets simultaneously experience an economic crisis, as opposed to when only a single country does so. One reason is that when multiple foreign markets are hit, the volume of U.S. exports falls by more than with a single-country crisis. In addition, the collective decrease in these countries' demand for imported agricultural products reduces the prices received by U.S. exporters. The projections (and figure above) show that with multi-country crises, U.S. export values fall mainly because of declines in trade prices. Given that an export value equals the volume exported times its trade price, the fact that the export values drop by a substantially greater percentage than export volumes reveals that the trade prices of the commodities decrease by a larger percentage than the trade volumes.

The cause of the COVID-19-generated world economic crisis is different than the origins of the previous economic crises examined in this report, and the economic challenges facing most countries in the world from the pandemic also differ in some ways from those crises. One dissimilarity is that COVID-19 has not only delivered shocks to the demand side, but also to the supply side, such as disrupting supply chains. However, the COVID-19-related economic effects most countries are experiencing include a major decline in GDP and consumer income, and for some countries, currency depreciation in relation to the U.S. dollar. Although the COVID-19 world economic crisis is still in sway and its full impact on U.S. agricultural exports is not yet known, the crisis-induced drop in countries' GDP has had the isolated effect of reducing U.S. agricultural exports. Because of developments unrelated to COVID-19 that pushed exports up, U.S. agricultural exports in 2020 did not fall but rather rose by 7 percent. However, based on the discussion in this report, it appears that without the COVID-19-generated world economic crisis, U.S. agricultural exports in 2020 would have been higher.

How Was the Study Conducted?

Economic theory is used to identify how an economic crisis is likely to affect a country's agricultural imports. The study then applies that theory to examine empirically the degree to which past economic crises in foreign markets for U.S. agricultural products have lowered their agricultural imports, in total and specifically from the United States. An ERS model of world agricultural trade is then employed to simulate how possible future crises in key U.S. foreign markets might reduce their agricultural imports, again in total and specifically from the United States.