

US soybean production growth hasn't matched, nor can it match, that of Brazil

In last week's column (<https://tinyurl.com/4j3carc4>), we began this series of articles designed to provide insight into the question of whether or not a US agricultural policy focused on exports has been able to sustain agricultural prices at a profitable level for a sustained period of time. In making this analysis, we acknowledge that in a single year, or a short burst of years, exports can have a positive impact on US crop prices.

The question is whether policies designed with the goal of expanding crop exports can sustain profitable crop prices over the long haul. If crop exports cannot sustain a long period of profitable prices, then we must identify other means to support profitable crop prices over the long term.

In last week's column, we examined corn exports and showed that while they resulted in higher crop prices for a short period of time in the 1970s, in the longer run exports did not increase at levels needed to sustain crop prices at or above the full cost of production for all but a few years similar to what we see in the current 2020 corn crop marketing year.

In the current column we turn our attention to a crop that a century ago was just one of many minor crops. This has all changed over the last 50 years. In 1964, the largest area harvested went to corn with 55.3 million acres, closely followed by wheat with 49.8 million acres. Soybeans came in third at 30.8 million acres. USDA Production, Supply, & Distribution estimates 2020 corn harvested acres at 82.4 million acres, closely followed by soybean at 82.3 million acres, with wheat holding a distant third at 37.4 million acres.

In our analysis of soybean exports, we use soybean complex (the sum of soybeans, soybean meal, and soybean oil) measured in million metric tons. That gives a more complete picture of soybean exports because each of the three major exporters of soybean complex exports a different mix of beans, meal, and oil. Looking at soybeans alone would give us a skewed view of soybean export markets.

In 1980, raw soybeans accounted for 74.1 percent of US soybean complex (SC) exports, 85.1 percent of Argentina's SC exports and 16.8 percent of Brazil's SC exports.

In 2020, raw beans account for 81.3 percent of US SC exports while they account for 17.3 percent of Argentina SC exports and 82.6 percent of Brazil's SC exports. Through further processing of soybeans, Argentina gets relatively more value from its SC exports than the US or Brazil.

Over the last four decades, US soybean production has increased by 130.1 percent while soybean production in the rest of the world (primarily Argentina and Brazil) has increased by 678.9 percent. US soybean production resulted in fewer acres being planted to other crops while for the most part Brazilian production resulted from the opening up of new acres in the center-west of the country.

The US simply does not have the land base to expand crop production like Brazil. Also, in many areas, Brazilian farmers can annually grow 2 or even 3 crops per acre.

On the other hand, US farmers enjoy the benefits of a transportation infrastructure that allows them to get their beans to market at a lower cost than Brazilian farmers.

Currently the US maintains an export-oriented agricultural policy that has its roots in the 1996 Farm Bill. If things worked out the way the authors of that legislation expected, US farmers

should have experienced positive net income per acre for corn and soybeans despite competition from other exporting countries.

To check that out we turned to USDA's Historical Commodity Costs and Returns (<https://tinyurl.com/3f5xkfbd>) for corn and soybeans covering the 1996-2019 crop marketing years.

For soybeans, the unweighted average value of production less total costs was \$21.57 per acre for the 1996-2019 crop marketing years.

For corn, the unweighted average value of production averaged -16.16 per acre over the same period.

To us the results are very clear, the export-oriented policies of the last 24 years have not delivered on their promises, just as we expected back in 1996.

From our perspective, any agricultural commodity policy that does not take into account 1) that the US is residual supplier to the world major-crop export market and 2) the low price elasticities of supply and demand of the US crops is bound to fail. All of the new policies and agricultural export promotion trips by farmers and government officials are not enough to overcome the fundamental economic characteristics of US crop agriculture.

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