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# Grains and Oilseeds: Part 3 – Rest-of-the-World

**Carl Zulauf**

**Department of Agricultural, Environmental and Development Economics**
**Ohio State University**

**Nick Paulson and Gary Schnitkey**

**Department of Agricultural and Consumer Economics**
**University of Illinois**

**Joana Colussi**

**Center for Commercial Agriculture**
**Purdue University**

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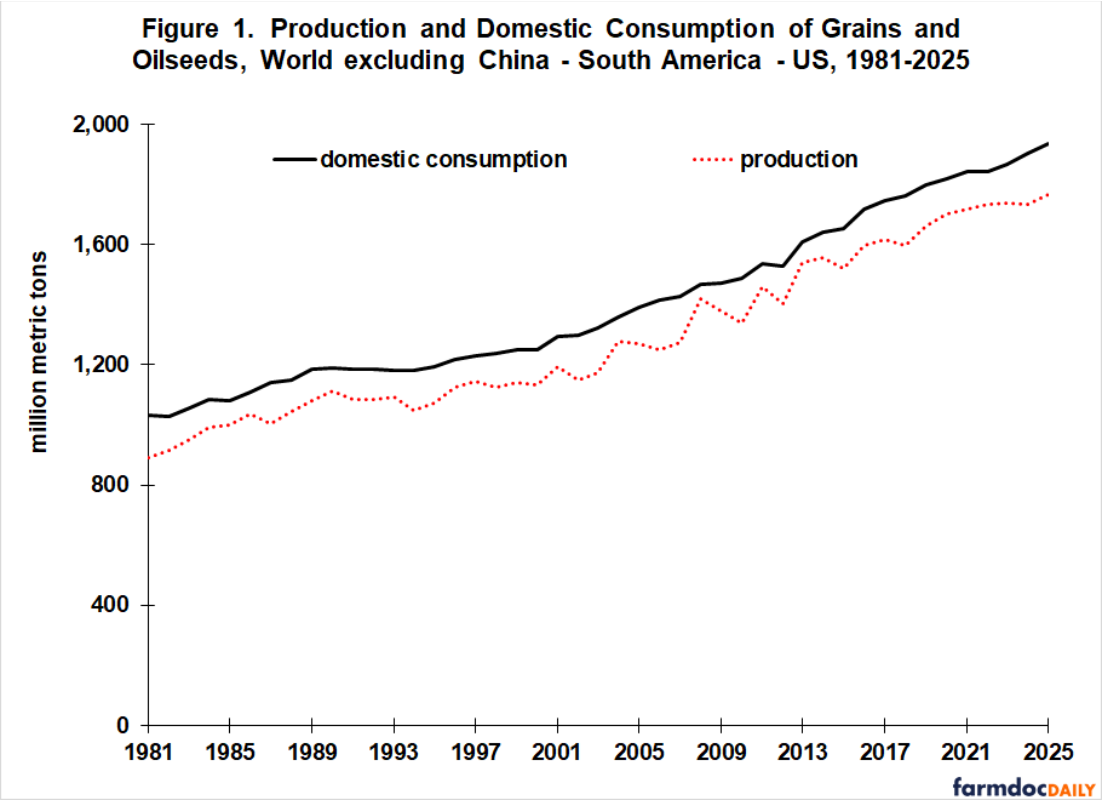
Since 1980, the world excluding China, South America, and US (hereafter, ROW) has produced fewer grains and oilseeds than it has consumed. Its production deficit has grown when measured in metric tons but declined as a share of domestic consumption. As a single explanatory variable, ROW's production deficit relative to domestic consumption explains more of the year-to-year variation in the US composite grain and oilseed price than does the combined China - South America production surplus/deficit relative to domestic consumption. This comparison suggests that, for US grain and oilseed prices, the combined production surplus/deficit of China plus South America has less impact than does the production deficit in the rest of the world excluding China, South America, and US.

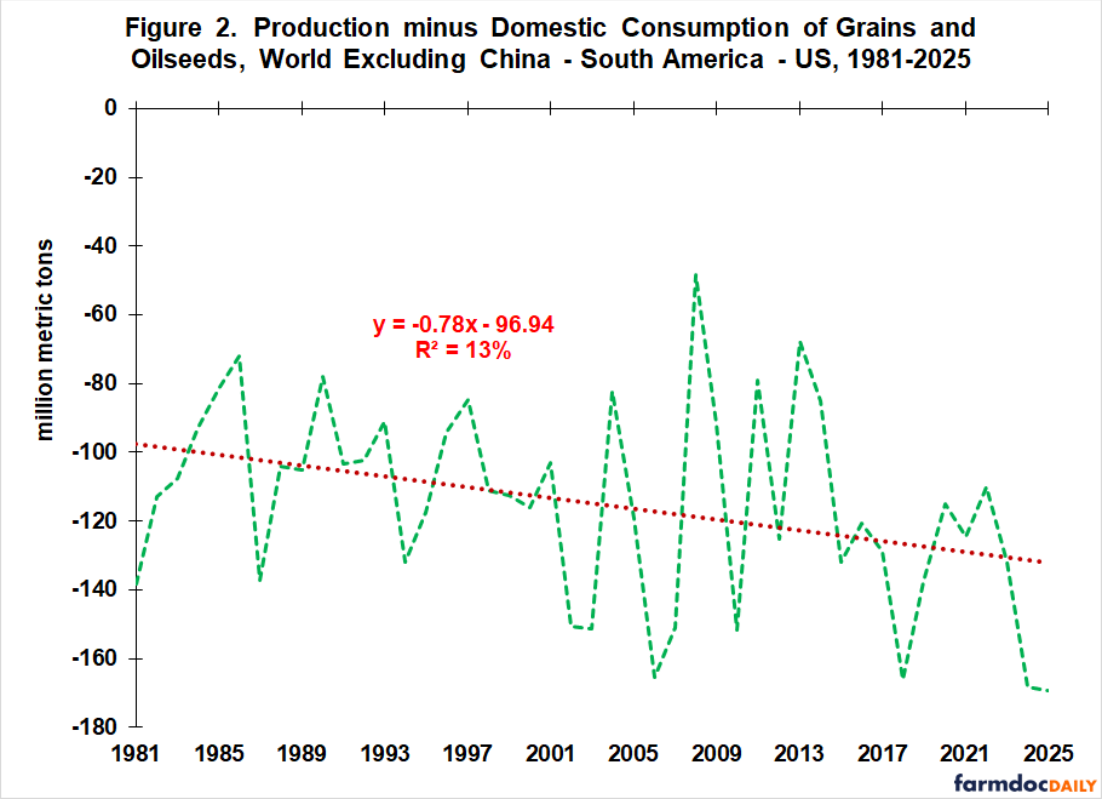
## Data and Procedures

This study examines ROW production and domestic consumption of grains and oilseeds using data from the *Production, Supply, and Distribution Online* (PSD) database (U.S. Department of Agriculture, Foreign Agriculture Service). Domestic consumption is the quantity consumed by a country from domestic production and imports. The study starts with the 1981/1982 crop year (hereafter, only first year is used). Several countries and crops were added to PSD during the 1970s. Moreover, a 1981 starting point follows the end of the 1970 crop prosperity period. Field crops in this study include feed grains (barley, corn, millet, oats, sorghum), food grains (rice, rye, wheat), and oilseeds (cottonseed, peanuts, rapeseed, soybeans, sunflowers). These 13 crops should be considered collectively since they compete for acres and are demand substitutes and complements. Since the weight per unit differs by crop, the unit of measurement is metric ton.

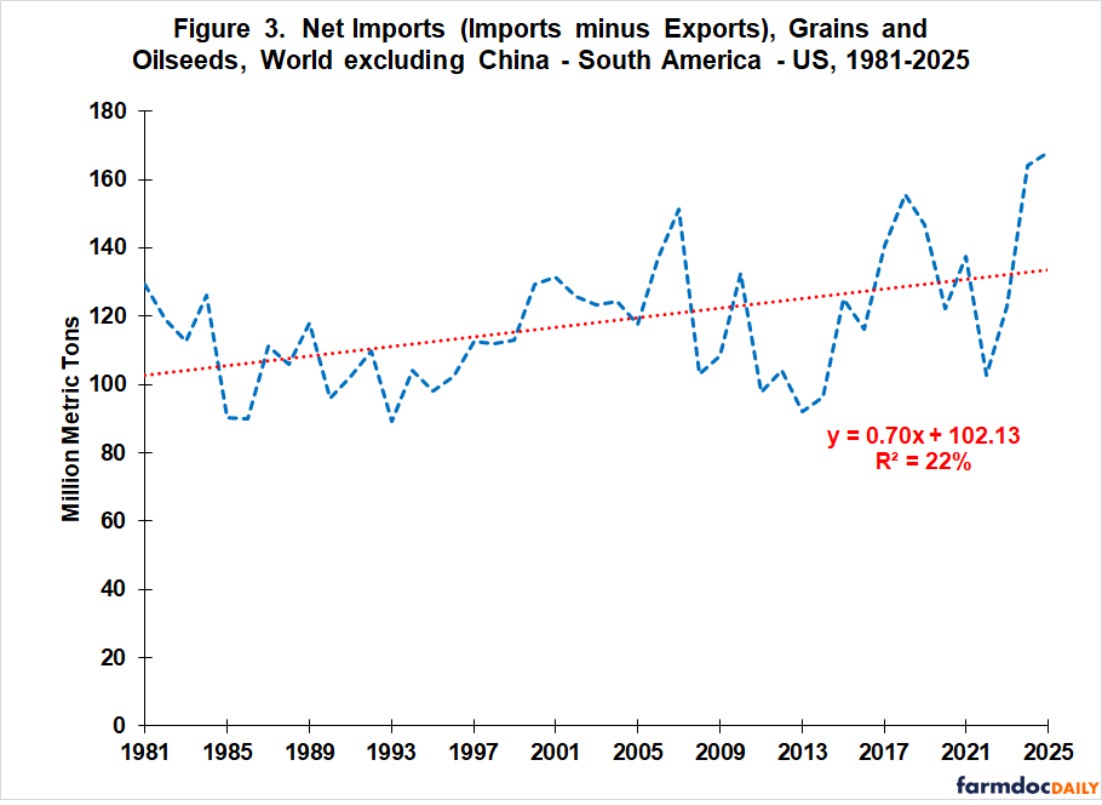
**ROW – Production Deficit**

ROW (world excluding China, South America, US) domestic consumption has exceeded its production of grains and oilseeds in every year since 1980 (see Figure 1). Its production deficit has grown by 0.78 million metric ton (MMT) per year (see Figure 2). Explanatory power of this linear growth trend is 13%. Statistical confidence is 98%. ROW's annual shortfall of production vs. domestic consumption averaged 141 MMT in 2021-2025 compared to 107 MMT in 1981-1985.





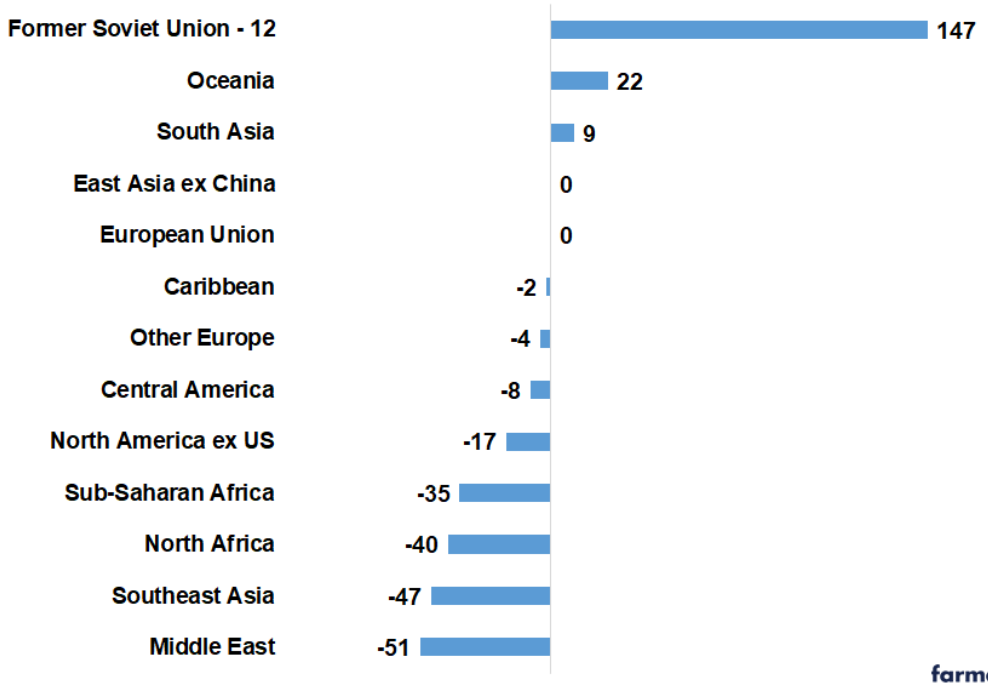

An implication of Figure 2 is that net ROW imports (ROW imports minus ROW exports) should be increasing. Figure 3 confirms this implication. Net ROW imports have increased by 0.70 MMT per year since 1980. Explanatory power of this linear time trend is 22%. Statistical confidence is 99%.



### Individual Regions – Big Differences

The Former Soviet Union countries went from a collective average annual production deficit of -37 MMT in 1981-1985 to a collective average annual production surplus of +110 MMT in 2021-2025, a 147 MMT increase in annual production relative to domestic consumption (see Figure 4). Over this same period, South America's annual production surplus increased by a similar but somewhat larger, 167 MMT. Also of note, Oceania's annual production surplus of the grains and oilseeds in this study increased by 22 MMT, or by more than its 18 MMT average annual production surplus in 1981-1985.

**Figure 4. Change in Average Annual Production Minus Domestic Consumption (million metric tons), 2021-2025 vs. 1981-1985**

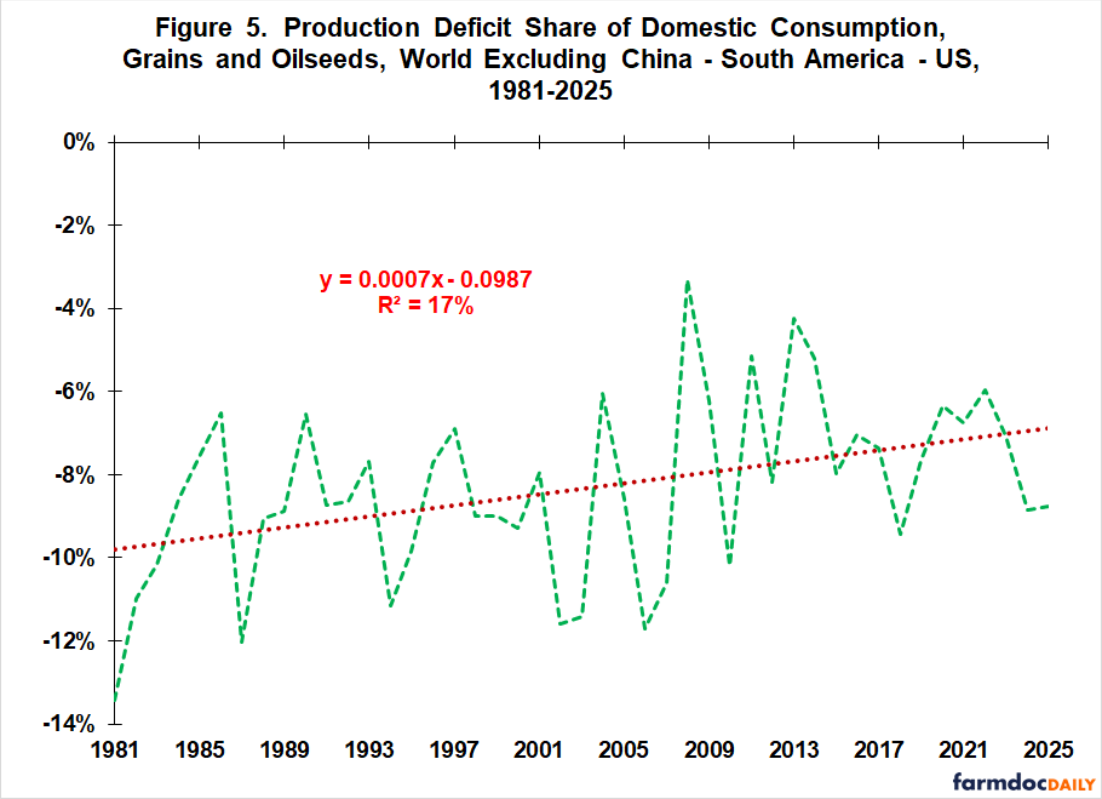



On the other hand, the average annual production deficit in the Middle East, Southeast Asia, North Africa, and Sub-Saharan Africa increased by more than 35 MMT in each region between 1981-1985 and 2021-2025. The collective production deficit of these four regions exceeded the increase in collective production surplus of the 12 Former Soviet Union counties (-173 vs. +147 MMT).

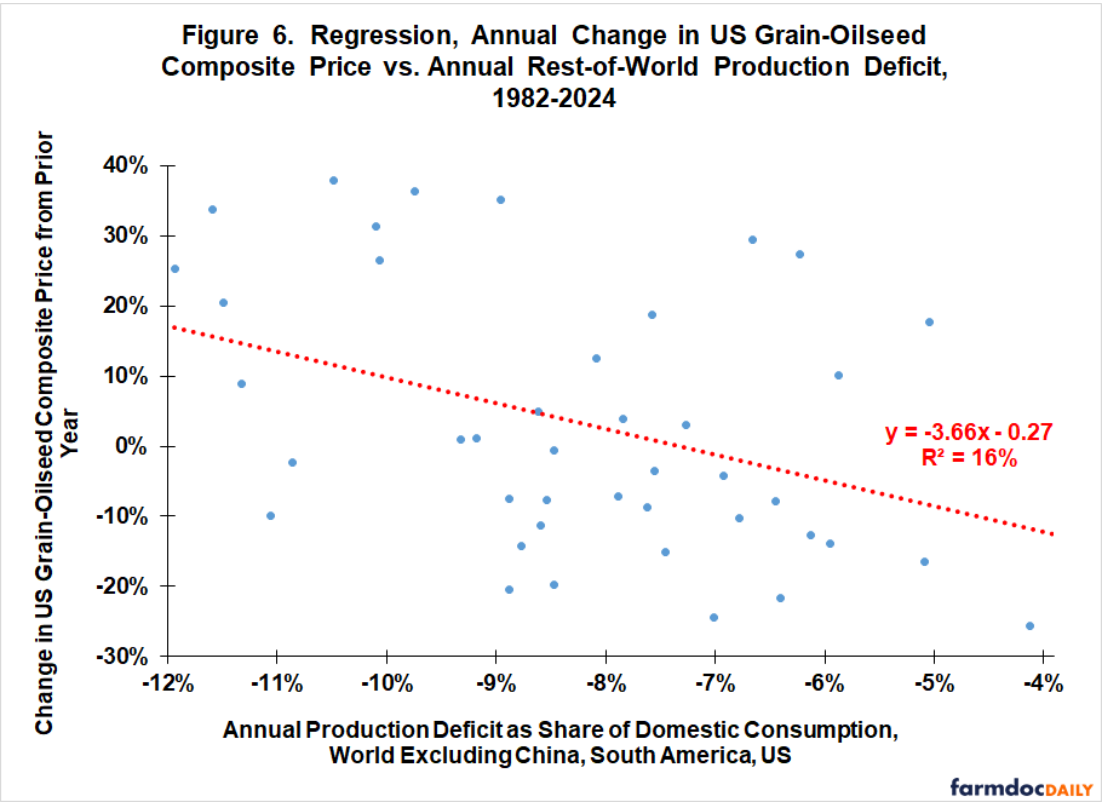
For North America excluding the US, average annual grain-oilseed production surplus declined from +18 to +1 MMT as domestic consumption grew faster than production.

### Impact on US Price

A regression analysis is conducted to estimate the ability of ROW's annual production deficit to explain the percent change in the US composite grain-oilseed price from the prior year. To maintain comparability with the analysis for China - South America in the August 22, 2025 *farmdoc daily* and for the US in the August 27, 2025 *farmdoc daily*, ROW production deficit is measured as a share of ROW domestic consumption. In contrast to an increasing production deficit when measured in metric tons, ROW's production deficit has declined as a share of domestic consumption (see Figure 5). Explanatory power of this time trend is 17%. Statistical confidence is 99%. Annual ROW production deficit relative to domestic consumption averaged -7.5% in 2021-2025 compared to 10.1% in 1981-1985. Construction of the US composite grain-oilseed price is discussed in the Data Note.




Year-to-year variation in ROW's annual percent production deficit vs. domestic consumption explained 16% of the year-to-year percent change in the US composite grain-oilseed price (see Figure 6). Statistical confidence is 99%. In comparison, the annual percent production surplus of the US and annual percent surplus/deficit of China plus South America explained 29% and 5%, respectively, of the percent change in this US price (see *farmdoc daily* of August 22, 2025 and August 27, 2025).



## Discussion

Over the last 45 years, the annual production deficit in the rest of the world excluding China, South America, and US (ROW) has increased when measured in metric tons, although it has declined when measured relative to domestic consumption.

As a single stand-alone explanatory variable, ROW's annual production deficit expressed as a share of domestic consumption explains more of the year-to-year variation in the US composite grain-oilseed price than does the same production surplus/deficit measure for South America - China.

The preceding finding is investigated further in the last article in this series by using regression analysis to assess the relative ability of China-South America, US, and ROW production surplus/deficit as a share of domestic consumption to explain the yearly variation in the US composite grain-oilseed price.

## Data Note

The US composite price for the grains and oilseeds in this study was calculated as follows. First, each grain and oilseed's US average price for the 1981-2024 market years was obtained from the *QuickStats* database (US Department of Agriculture, National Agricultural Statistics Service). Second, prices per bushel were converted to prices per pound using the crop's standard pounds per bushel conversion factor. Third, each crop's price per pound was weighted by the crop's share of total US grain and oilseed production for the year. Fourth, the weighted prices were summed across the crops. This sum was the US composite grain-oilseed price for the market year.

## References and Data Sources

US Department of Agriculture, National Agricultural Statistics Service. September 2025. *QuickStats*. http://quickstats.nass.U.S.da.gov/

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