

TESTIMONY BEFORE THE U.S. HOUSE COMMITTEE ON AGRICULTURE
Subcommittee on General Farm Commodities and Risk Management
A 2022 Review of the Farm Bill: Economic Perspectives on Title 1 Commodities and Title 11 Crop
Insurance
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Chairwoman Bustos, Ranking Member Scott, and members of the Subcommittee: Thank you for the opportunity to participate in today's hearing.

My testimony focuses on changes in commodity prices related to the ongoing war in Ukraine and their implications for current and future US farm policy. I specifically focus on the relationship between price levels and Title I farm programs, the primary farm safety net tool used to address the economic consequences of low commodity prices for US farmers in the medium to long-run. In doing so, I highlight the following points:

- Commodity price expectations are an important determinant of the policymaking process, especially for setting reference prices and other commodity program parameters.
- Disruptions to global agricultural commodity trade due to the war in Ukraine are significant and likely to persist through the upcoming 2022/23 marketing year and beyond. Higher prices are expected to improve profitability for US farmers with revenue increases larger than concurrent growth in farm input costs that are part of the impact of the war on commodity markets.
- Since the 2018 Farm Bill, Title I commodity programs have played a diminished role in the farm safety net relative to ad hoc programs intended to compensate farmers for specific price declines that did not trigger payments under existing programs.
- Using Title I farm programs to address the economic consequences of the war in Ukraine for agriculture is likely to present trade-offs similar to those encountered in the design and implementation of ad hoc farm programs between 2018 and 2021.
 - Policy incentives to increase US production to meet supply shortfalls elsewhere in the world are likely less to be effective than market incentives. Putting such policy incentives in standing programs runs counter to policy efforts in the past thirty years to reduce market distortions from US farm policy.
 - Making program payments timelier is likely to impair targeting of payments to realized losses. Efforts to improve targeting of programs to realized farm losses may affect production decisions and distort markets.

The importance of price expectations for commodity programs

Fluctuations in agricultural commodity prices are directly connected to Farm Bill policy making. Farm programs under Title I and Title XI of the Farm Bill are intended to be countercyclical to market prices; they provide a safety net to farmers from the economic consequences of low prices. Broadly speaking, Title I programs provide support to farmers when prices are below long-run levels, especially but not exclusively the levels defined in legislation. Title XI crop revenue insurance pays indemnities to farmer policy holders when short-run, within-year price changes contribute to revenue declines below a given revenue guarantee.

Since the level of the safety net provided by Title I programs is a policy parameter defined in legislation, this testimony focuses on deviations from long-run price levels and their relationship to Title I farm programs. Empirical evidence is presented for corn, soybeans, and wheat which comprise a majority of principal crop acres in the US.

There is a long-standing debate in US farm policy about the degree to which program parameters should be fixed in legislation or set flexibly according to mechanisms designed by policy makers¹. Expectations about future price levels play an important role in this debate since a fixed support may provide no assistance when prices end up higher than expected or larger than anticipated support when prices are lower than expected at the time legislation is set (Zulauf 2012; Coppess, Paulson, and Zulauf 2018).

The debate over fixed versus flexible commodity programs has led the provision of separate programs under Title I that vary in the degree to which program parameters are fixed in legislation. Price loss coverage (PLC) makes payments relative to fixed reference prices. Agricultural Revenue Coverage (ARC) makes payments relative to a rolling average revenue calculation that depends on market conditions in the preceding five years (Schnitkey et al. 2022). Title I also includes the Marketing Assistance Loan (MAL) program which provides loan deficiency payments when prices fall below a (lower) price floor called the loan rate².

Since the 1990s, US farm policy makers both in Congress and the executive have generally sought to avoid production effects from Title I programs by decoupling program payments from crop choice and acreage decisions. Such production effects would exacerbate or extend period of low prices. The primary mechanism for decoupling is payments on so-called base acreage and production rather than current production. Broadly speaking, Title I programs tend to receive less attention and lower funding when current and expected future prices are high.

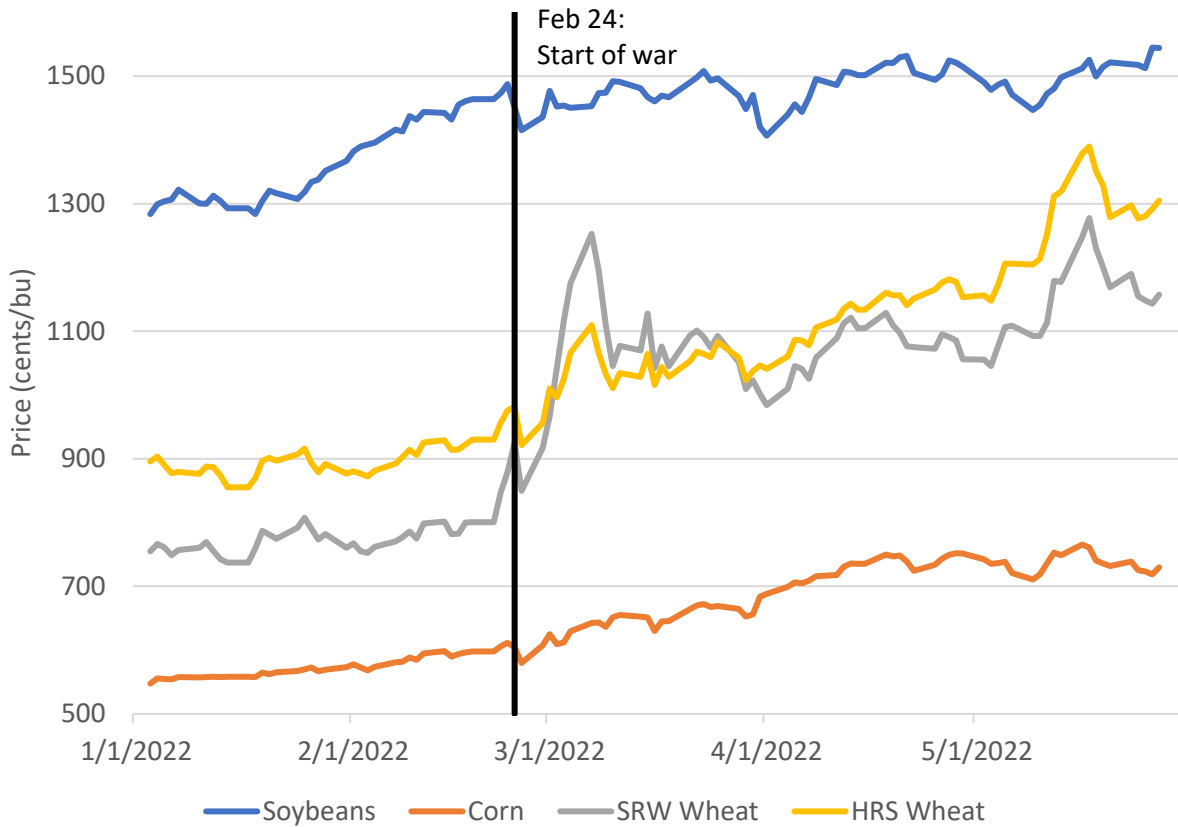
The War in Ukraine and Agricultural Commodity Prices

Agricultural commodity prices are currently at historically high levels. One proximate cause of high prices, especially for wheat and corn, is the ongoing Russian invasion of Ukraine. Anticipated prices for the 2022 US wheat crop, represented by the new-crop futures contract price, are now roughly 50% higher than on January 1, 2022. New-crop corn futures prices are one-third higher and soybean futures prices 20% higher over the same period.

¹ Title XI crop insurance programs are flexible according to this dichotomy and are not discussed here.

² The MAL program also facilitates commodity marketing through the provision of loans secured by agricultural commodities but that aspect of the program is not discussed here.

Figure 1. Expected 2022 harvest-time futures prices for corn, soybeans, and wheat, January 1 to May 27, 2022



Source: Bloomberg

As shown in Figure 1, the largest price increases took place immediately following the initial Russian invasion of Ukraine on February 24, 2022. Price increases at that time were greatest for wheat, especially for soft red winter (SRW) and hard red winter (HRW) wheat futures prices (HRW prices are omitted for clarity in Figure 1). These wheat classes have similar protein content and are viewed as closer substitutes to the wheat exported from Russia and Ukraine, compared to other wheat classes grown in the US such as Hard Red Spring (HRS).

While all nearly all agricultural commodity prices have increased in 2022, price increases have been especially large for wheat and corn because of the importance of Ukraine and Russia in global markets for these commodities. On average between the 2016-17 and 2020-21 marketing years, Ukraine and Russia were responsible for 28% of world wheat exports and 17% of world corn exports³.

The conflict has limited exports with significant quantities of agricultural commodities essentially stuck inside Ukraine. Estimated Ukrainian ending stocks for the 2021/22 marketing year are expected increase dramatically. Current USDA estimates for 2021/22 Ukrainian corn and wheat ending stocks are roughly four times higher than the previous five-year average. Outside of Ukraine, conflict-related constraints on

³ All production, export, and stocks data referred to in this testimony come the USDA Foreign Agricultural Service PS&D database: <https://apps.fas.usda.gov/psdonline>

Black Sea shipping and sanctions on Russia have also limited the movement of agricultural commodities. Production is expected to be lower in 2022 as the conflict restricts the availability of crop inputs and limits farming operations, but the inability to move commodities out of the region is expected to further increase commodity stocks inside Ukraine.

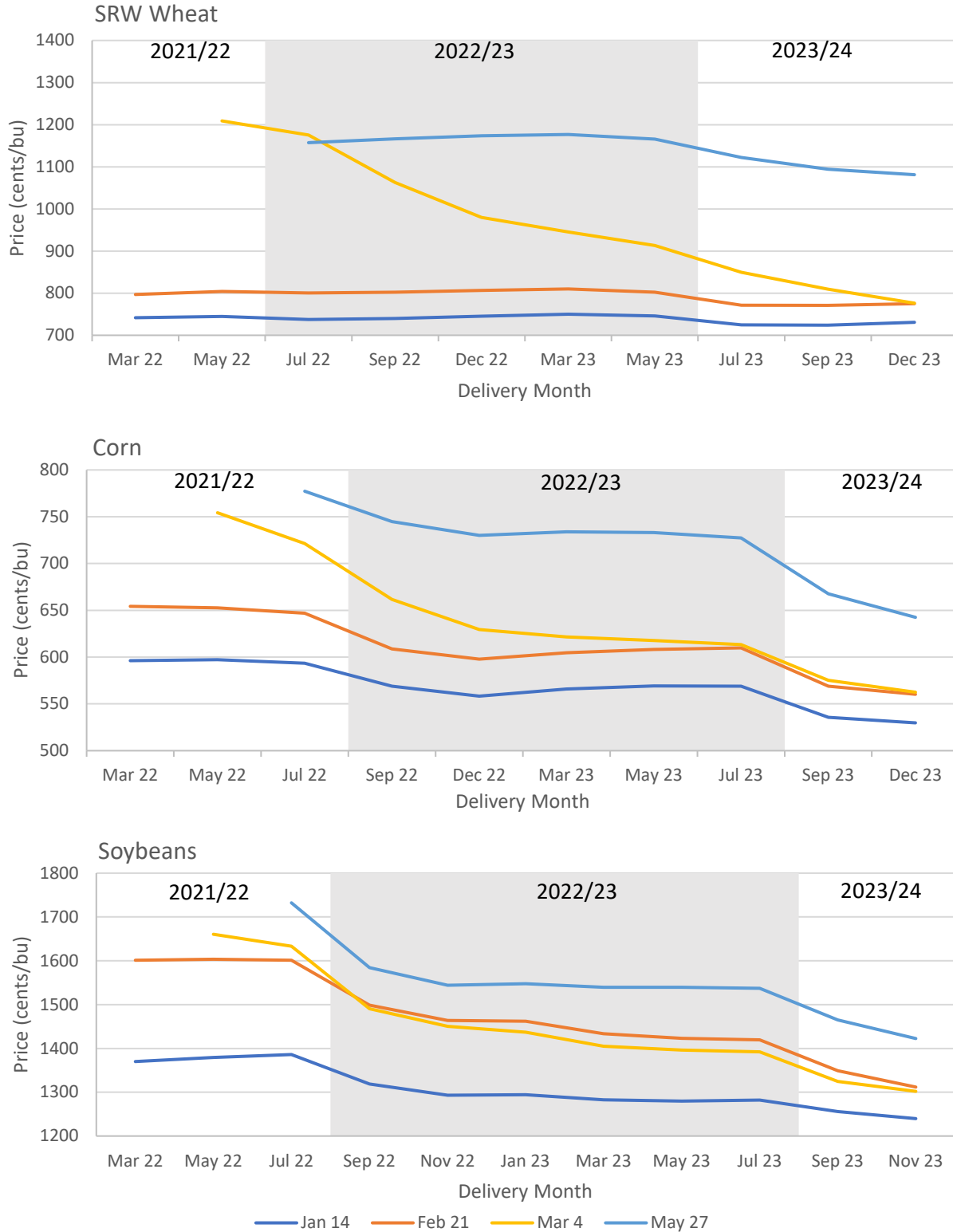
Price increases observed in early 2022 were not solely caused by lower Ukrainian and Russian commodity exports. First, commodity markets were more susceptible to supply shocks because inventories, a key measure of commodity scarcity, had been drawn down in the years leading up to the current 2021/22 marketing year, particularly in major exporting countries where corn and wheat inventories have been declining since 2018. Commodity markets exhibit higher volatility and a tendency to spike in the short run when inventories cannot be used to mitigate the effects of supply shortfalls.

Second, there have been a series of supply shocks outside of Ukraine and Russia that have pushed the global commodity supply and demand balance toward higher prices. Drought reduced 2021/22 crop production in South America with the impact strongest in soybean prices. News of the drought moved prices higher in January and February 2022 in advance of the war in Ukraine (as shown in Figure 1). Similarly, drought limited wheat in the US Great Plains in 2021 and drought and poor conditions for the 2022 US wheat crop contributed to higher wheat prices. Strong demand from major agricultural commodity importers, especially China, also contributed to high prices. Finally, knock-on impacts of higher prices, especially export restrictions imposed by some exporting nations have exacerbated price impacts.

The war in Ukraine is of great concern to global commodity markets with an impact possibly larger and more persistent than other supply shocks. While the amount of grain removed from global commodity markets due to the war is significant, quantity changes implied by other supply shocks are similar in magnitude. However, the war in Ukraine may have longer-term market implications because the Black Sea region is a low-cost producer of corn, wheat, and other agricultural commodities (Langemeier and Zhou 2022b; 2022a). Moreover, crop production areas in this region are located close to ports to facilitate efficient transportation to importing nations. This means that in most cases, any importing nation seeking alternatives to crop supplies from Ukraine or Russia will only find more expensive options.

Current forward markets indicate high prices will persist at least until the end of the 2022-23 marketing year. Figure 2 visualizes the set of futures market prices for delivery at different time horizons on specific days in early 2022. These prices represent some indication of price expectations at a given time horizon. The figure shows that the initial market reaction to the war in Ukraine was very much concentrated in the short and medium-run; prices for delivery during the current 2021/22 marketing year and prices for the 2022 crop increased, but long-run price expectations moved only a little. This was especially true for the SRW wheat market. In the roughly three months since the start of fighting in Ukraine, longer-horizon prices have increased more than short-horizon prices.

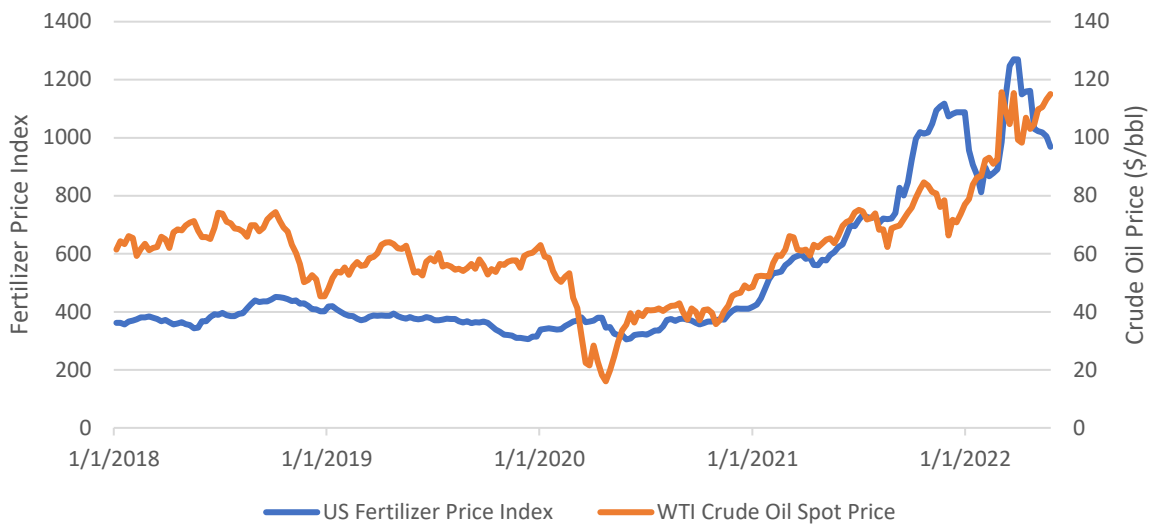
Figure 2. Forward Curves for Crop Futures Prices as of Specific Dates in 2022



Source: Bloomberg. Note: Shaded areas represent prices for delivery during a specified marketing year.

The economic consequences of these higher prices for US farmers are muddled somewhat by concurrent increases in fertilizer and energy costs that are in part related to conflict in Ukraine. Russia and its ally Belarus are major fertilizer producers and exporters. Similarly, Russia is a major producer and exporter of oil and natural gas. Data on fertilizer and crude oil price levels shown in Figure 3 indicate that a broad basket of US fertilizer prices approximately tripled between January 2021 and March 2022. Similarly, the benchmark West Texas Intermediate crude oil price nearly tripled over the same timeframe. High fertilizer and energy prices encourage farmers to economize on input use. This is concerning, because it may limit the ability for US and other farmers to respond to higher output prices with increased production, particularly in the short run.

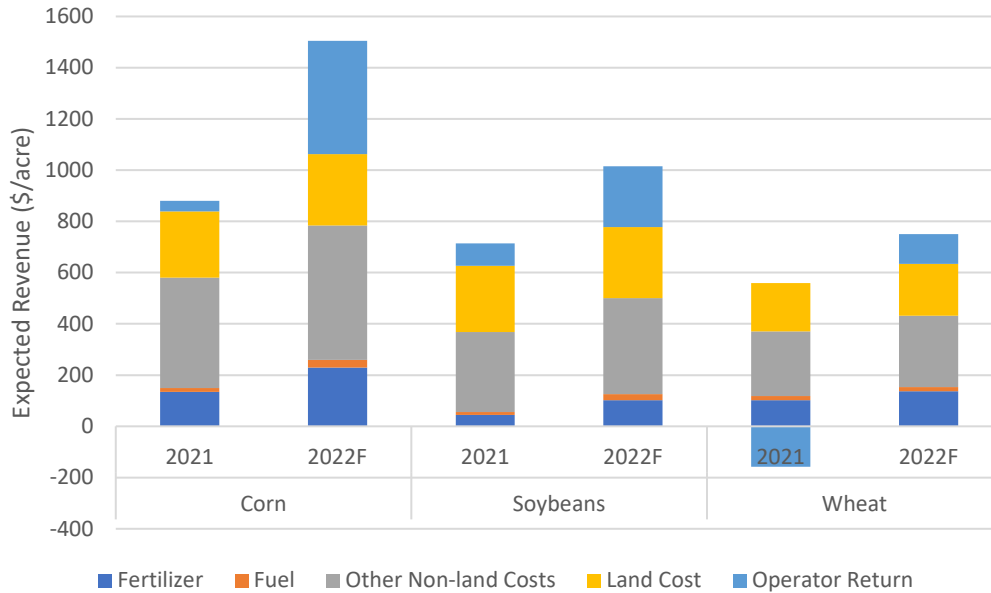
Figure 3. Weekly Fertilizer and Crude Oil Prices, January 2018 to May 2022



Source: Green Markets/Bloomberg

The net effect for US farmers of higher prices for outputs like corn, wheat, and soybeans and inputs like fertilizer and energy is nonetheless expected to be positive. Figure 4 shows expected revenue for corn, soybean, and wheat production on Illinois crop farms relative to fertilizer, fuel, land, and other costs. University of Illinois farmdoc crop budget estimates show rising output prices are expected to more than compensate for large fertilizer and fuel price increases. Though fertilizer and fuel expenses are expected to nearly double from 2021 to 2022, expected operator returns given average crop yields are substantially higher in 2022 than in 2021. Fertilizer and fuel costs simply do not comprise a large enough share of expenses to offset revenue increases.

Figure 4. Costs and Net Returns as a Proportion of Expected Revenue for Illinois Crop Farms, 2021 and 2022



Source: Crop Budgets, Illinois, <https://farmdoc.illinois.edu/management#handbook-crop-budgets>.

Note: Quantities represent springtime forecasts of marketing year total revenue and costs. Corn and soybeans data are for high productivity land in Central Illinois. Wheat data are for Southern Illinois. Land costs are based on realized land costs in 2021 which are an average of land ownership, share rent, and cash rent costs.

Price Levels and Agricultural Policy Under the 2018 Farm Bill

To provide a sense of the level of government safety net support provided by Title I commodity programs under current market conditions, compare current price levels to fixed support levels defined in the 2018 Farm Bill. Two key price levels defined in the 2018 Farm Bill are the effective reference price and the national loan rate. The effective reference price is higher than the loan rate, so it defines the initial level of farm safety net support.

Farm payments under the Price Loss Coverage program occur when marketing year average (MYA) prices as calculated by USDA fall below the effective reference price. The MYA price is a benchmark representing average price received by farmers for a given commodity produced in a given marketing year. By definition, the MYA price is only known at the end of the marketing year, so farm payments under this Title I farm program are made after the marketing year has ended.

Figure 5 plots the MYA price and effective reference price for corn, soybeans, wheat during the four marketing years since the 2018 Farm Bill. Realized prices were generally close but not significantly above or below reference prices in the 2018/19 and 2019/20 marketing years. This resulted in limited PLC payments for corn and soybeans and modest PLC payments (relative to payments under the 2014 Farm Bill) for wheat. Prices for the 2020/21 and 2021/22 marketing years were generally well above the effective reference price for these commodities, a condition expected to persist into 2022/23.

Figure 5. Intra-year and Marketing Year Average Farm Prices for Corn, Wheat, and Soybeans, 2018/19 to 2021/22



Source: USDA/Bloomberg Note: Intra-year daily spot prices represent the price of corn and soybeans in Central Illinois and hard red winter wheat in Kansas City on a given day.

While the MYA price has generally determined the magnitude of Title I commodity program support, price levels within a year may substantially exceed the MYA price. Intra-year spot prices are plotted in Figure 5 for corn, soybeans, and wheat. These prices represent the current value of the commodity on a given day. By definition, higher than MYA prices will occur within a marketing year. However, the presence of such prices can create the perception of economic losses because only a small portion of each marketing year's production is sold at the higher than average price level.

Figure 5 also shows the level of national loan rates, the price level below which the marketing assistance loan program payments are triggered. For corn, wheat, and soybeans, loan rates have been well below market prices during the 2018 Farm Bill period. Payments to farmers under the marketing assistance loan program have been negligible. Recall that payments to farmers under the MAL program are made on actual production. This may create an incentive to produce more when expected prices are low. Low MAL program payments therefore imply potential market distortions related to the program have been similarly insignificant.

While commodity program payments have generally been small during the 2018 Farm Bill period, direct government payments to farmers have not. Figure 6 shows that nominal government payments far exceeded levels observed in the recent past between 2018 and 2021. Direct farm payments in calendar year 2020 were estimated to be approximately \$46 billion, higher in both nominal and real terms than any year recorded, including previous peaks during the 1980s farm crisis and the period of low commodity prices from 1998 to 2005.

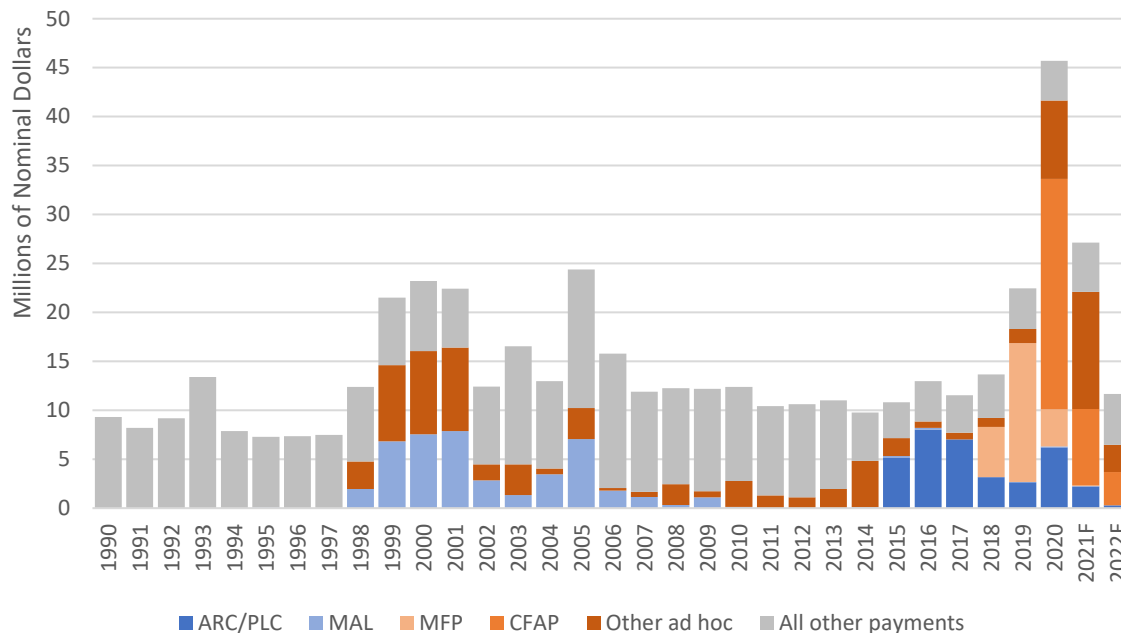
Approximately 80% of direct farm payments between 2018 and 2021 came from programs were *ad hoc*: designed to quickly address specific issues. These programs sought to quantify specific economic damages related to the US-China trade conflict, the coronavirus pandemic, and other disasters. The largest ad hoc programs were the Market Facilitation Program (MFP) related to the US-China trade conflict and the Coronavirus Food Assistance Program (CFAP).

MFP and CFAP were notable in that program payments for commodities discussed here - corn, wheat, and soybeans - were defined relative to projected or observed price declines over specified time intervals. MFP payments were calculated relative to commodity-specific payment rates that can be compared to price changes (Janzen and Hendricks 2020). CFAP payments were based on specific price declines that occurred between January 2020 and specific dates later that year.

MFP and CFAP attempted to provide greater support to farmers in a timelier manner than is the case with farm bill programs. Payments were made on actual production or acreage during this period, although USDA attempted to limit possible production distortions through program design. Attempting to provide ad hoc payments before the end of a production cycle (as is common with many farm bill programs) required USDA to predict the magnitude of the economic harm caused by the trade war and the pandemic for specific commodities at specific points in time.

The prevalence of ad hoc payments since 2018 suggests that the existing farm safety net provided in past Farm Bills had real or perceived inadequacies in the context of the economic harm caused by the trade conflict and the pandemic. Existing programs did not provide support to US farmers under the market conditions that existed between 2018 and 2021. Any payments from existing Title I programs would have been made much later than was the case for MFP, CFAP, and other ad hoc programs.

Figure 6. Nominal Direct Government Payments to Farmers by Calendar Year, 1990-2022F



Source: USDA Economic Research Service Farm Income and Wealth Statistics

Implications for Title I Commodity Programs

The war in Ukraine has prompted discussion of a global food price crisis. Relevant to Title I commodity programs, there is an active debate about the extent to which US farm policy can and should address the supply shortfall caused by the war in Ukraine. For example, the Biden administration recently proposed the use of higher fixed price supports under the marketing assistant loan program to encourage production (Swanson et al. 2022). This proposal and similar efforts to boost US production using policy incentives run counter to the principle that US farm programs should avoid market price distortions by decoupling program payments from production. Using Title 1 programs to increase supply response would also create long-term budget liabilities. Most importantly, increasing countercyclical market support may not increase crop production by much if at all, since expected payments from these programs would be small given current price expectations.

More broadly, using Title I farm programs to address the economic consequences of the war in Ukraine for food security and agriculture is likely to face trade-offs similar to those encountered in the design and implementation of Title I and ad hoc farm programs between 2018 and 2021. Farm safety net policy has generally attempted to achieve the following objectives (among others):

1. Targeting: Program payments are matched to specific enumerated economic damages sustained by farmers.
2. Decoupling: Program payments do not affect acreage and crop choices decisions for farmers.
3. Timeliness: Program payments are received as close as possible to the time when economic losses are incurred.

Experience with Title I and ad hoc farm payments suggests it is difficult to simultaneously achieve all three objectives. For instance, the main mechanism for decoupling Title 1 commodity programs – making

payments on base acres rather than actual acres – ensures that payments are not exactly matched to realized losses (Zulauf et al. 2020). Ad hoc payments were able to avoid production distorting impacts by announcing payments after planting or paying common payment rates across a wide range of crops, but these mechanisms are either infeasible for a program designed to exist for five years, or come at the expense of targeting.

Recent experience also suggests that program payment timeliness often conflicts with other goals, especially targeting. For example, the MFP attempted to identify economic damage to US farmers caused by the trade conflict prior even to the 2018 harvest period. The full market implications of the trade conflict were not known when the program was announced, and this created considerable disagreement about whether MFP payment rates overcompensated certain commodities and regions. Improvements in payment timeliness almost certainly came at the expense of targeting.

Similarly, payments made under CFAP, especially the second round of those payments, aimed to compensate farmers for price declines between specific dates in 2020, using the January 15, 2020, pre-pandemic price level as a baseline. Some of the price declines identified by CFAP proved to be largely temporary. Again, efforts to provide timely assistance to farmers resulted in ad hoc payments that were not targeted to realized economic losses that met the criteria for coverage in the 2018 Farm Bill. Current Title I programs, by focusing on the marketing year average price as the outcome of interest, do a good job of focusing on long-lived, economically significant losses experienced by most producers of a given commodity.

In the current period of elevated price expectations, it is most important to note that Title I commodity programs are by design less active. Efforts to apply Title I policy levers as a means to address other objectives related to global food security and the war in Ukraine are likely to come at the expense of existing objectives, especially the goals of targeting payments to specific losses and decoupling payments from production.

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