




Food & Agricultural Policy Research Institute
University of Missouri

Agricultural Markets & Policy
University of Missouri

# U.S. Agricultural Market Outlook

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Any opinion, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture nor the University of Missouri.

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The Agricultural and Food Policy Center at Texas A&M University will prepare a companion set of estimates of the farm-level impacts of these projections (www.afpc.tamu.edu).

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## Summary

Unfavorable weather, the Russian invasion of Ukraine, avian influenza and a host of other factors resulted in high commodity prices, high farm production costs and high consumer food price inflation in 2022. An assumed return to more normal conditions results in projected declines in commodity prices, farm income and food price inflation.

This report summarizes baseline projections for agricultural and biofuel markets prepared using market information available in January 2023. Based on forecasts by S&P Global, U.S. and world economic growth slows in 2023 and consumer price inflation drops back to 2% by 2024. The baseline reflects current policies, meaning it incorporates programs that had been enacted prior to January 2023, but does not reflect any subsequent policy changes. The baseline is intended to serve as a reasonable point of reference for evaluating alternative scenarios; it is not a prediction of future policy choices.

We use our models to develop a range of projected market outcomes that takes into account some major sources of uncertainty about future supply and demand conditions. In some of the resulting 500 outcomes, prices, quantities and values are much higher or much lower than the averages reported here.

Some key results:

- Prices for many crops have been at or near record nominal levels in the 2022/23 marketing year. Unfavorable weather reduced crop production in the United States, the Russian invasion of Ukraine limited exports by a major competitor in world markets, and world economic growth supported demand.

- If weather conditions allow crop yields to return to trend-line levels in 2023, prices for corn, soybeans, wheat, cotton and many other crops are likely to fall. Over the next 10 years, average nominal prices are much lower than they have been in 2022/23, but they remain above the average of 2017/18 to 2021/22.

- Higher fertilizer, fuel and feed costs contributed to a very sharp increase in farm production expenses in 2022. A smaller increase is projected in 2023, and lower prices for some inputs result in a reduction in production costs in 2024 and 2025.

- Cattle, hog, poultry and milk prices all increased in 2022. High feed costs, drought and avian influenza limited supplies, and consumer demand generally continued to be strong. In 2023, most projected livestock sector prices fall as supplies rebound and demand growth slows. The one major exception is cattle, where drought and other factors limit the number of animals available for slaughter.

- Federal spending on farm-related programs was above the historical norm between 2019 and 2022, largely because of short-term, ad hoc programs. This current policy baseline does not assume new ad hoc programs in the future, and projected farm-related outlays decline in fiscal years (FY) 2023 and 2024.

- Crop losses in 2022 result in high budgetary costs for the crop insurance program in fiscal year 2023. Crop insurance accounts for 45% of projected spending on major farm-related programs over the next decade. Commodity program spending associated with Title I of the farm bill is relatively low in FY 2023 and 2024 but rebounds in later years given projected changes in commodity prices and program payment triggers under the price loss coverage (PLC) and agriculture risk coverage (ARC) programs.

- Net farm income reached a record level in nominal terms in 2022, as sharply higher crop and livestock receipts more than offset reduced government payments and increased production expenses. Projected net income declines in 2023 and 2024 as receipts and payments fall.

- Farm asset values have increased with land prices in recent years, and another increase is projected for 2023. Given assumptions of the outlook, lower farm income and high interest rates restrict further increases in farm real estate values in subsequent years.

- Consumer food price inflation jumped to 9.9% in 2022 as farm commodity prices rose, labor and other costs increased, supply chain problems continued, and consumer demand was strong. Price increases have slowed in recent months, and the projected annual increase in consumer food prices is 4.4% in 2023 and under 2% in 2024.

# Key results

| Marketing year | 2017/18-2021/22 average | 2022/23 | 2023/24 | 2024/25-2032/33 average |
|---|---|---|---|---|
| **Crop prices** | | | | |
| Corn farm price, dollars per bushel | 4.21 | 6.69 | 5.32 | 4.36 |
| Soybean farm price, dollars per bushel | 10.10 | 14.23 | 12.17 | 10.93 |
| Wheat farm price, dollars per bushel | 5.43 | 9.08 | 7.39 | 5.86 |
| Upland cotton farm price, cents per pound | 71.2 | 82.5 | 73.9 | 74.7 |
| **Selected program benefits, billion dollars** | | | | |
| Agriculture risk coverage | 0.64 | 0.10 | 0.11 | 2.97 |
| Price loss coverage | 2.24 | 0.01 | 0.40 | 1.88 |
| Crop insurance net indemnities | 4.33 | 12.54 | 9.72 | 7.91 |

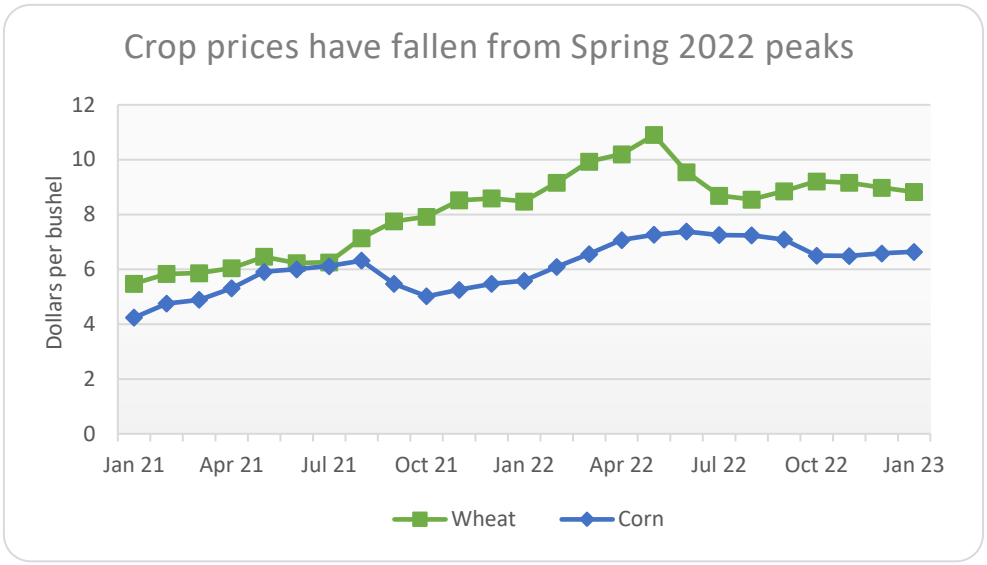
| Calendar year (except as noted) | 2017-2021 average | 2022 | 2023 | 2024-2032 average |
|---|---|---|---|---|
| **Livestock sector prices** | | | | |
| Fed steers, 5-area direct, dollars per cwt | 117.27 | 144.40 | 155.51 | 155.40 |
| Barrows and gilts, 51-52% lean, dollars per cwt | 50.97 | 71.21 | 65.89 | 56.29 |
| National wholesale broiler, cents per pound | 90.86 | 140.50 | 119.95 | 107.27 |
| All milk, dollars per cwt | 17.86 | 25.55 | 21.62 | 20.28 |
| **Biofuel production, billion gallons** | | | | |
| Ethanol | 15.4 | 15.4 | 15.5 | 16.0 |
| Biomass-based diesel | 2.4 | 3.1 | 3.6 | 4.3 |
| **Government outlays, billion dollars, fiscal year** | 33.7 | 36.7 | 29.5 | 25.8 |
| Commodity Credit Corporation net outlays | 14.1 | 6.6 | 5.5 | 8.9 |
| Major commodity programs | 5.8 | 2.1 | 1.2 | 4.7 |
| MFP, CRP, disaster and all other CCC net outlays | 8.3 | 4.5 | 4.3 | 4.2 |
| Crop insurance net outlays | 7.9 | 10.9 | 15.6 | 11.6 |
| Other non-CCC (CFAP, PPP, disaster, conservation) | 11.7 | 19.1 | 8.3 | 5.3 |
| **Net farm income, billion dollars** | 94.1 | 162.7 | 131.3 | 112.7 |
| Crop and livestock sector cash receipts | 381.8 | 543.4 | 504.5 | 478.4 |
| Government payments | 23.8 | 15.6 | 10.4 | 10.3 |
| Production expenses | 354.6 | 441.3 | 451.7 | 439.9 |
| Real net farm income in 2023 dollars | 109.5 | 168.7 | 131.3 | 97.7 |
| **Farm balance sheet, billion dollars** | | | | |
| Farm assets | 3,156 | 3,848 | 4,008 | 4,083 |
| Farm debt | 426 | 504 | 530 | 559 |
| Debt/asset ratio | 13.5% | 13.1% | 13.2% | 13.7% |
| **Annual consumer food price inflation** | 2.3% | 9.9% | 4.4% | 2.0% |

Note: The estimates are based on market information available in January 2023. Projections are averages across 500 outcomes.

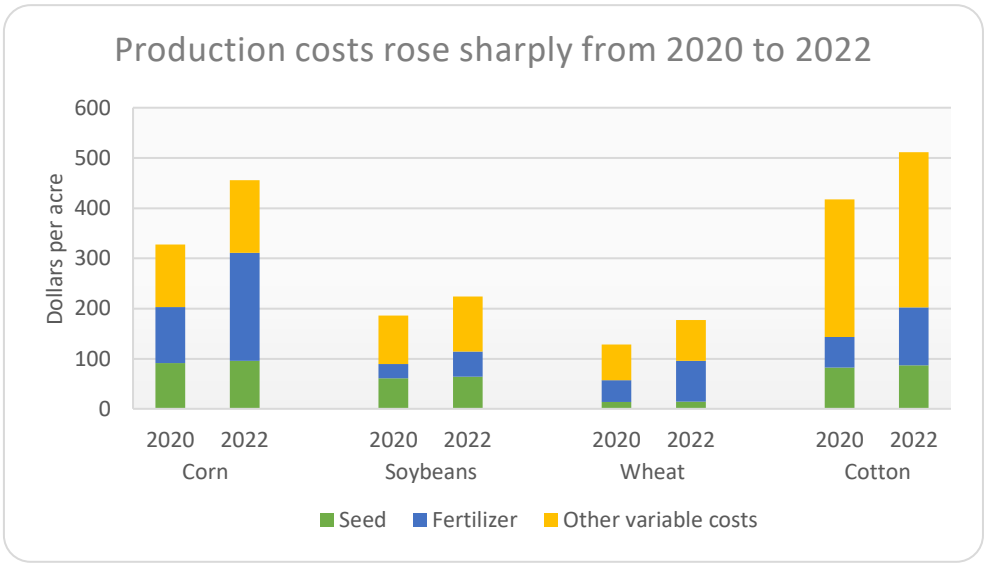
## Recent developments

Prices for corn, wheat and many other farm commodities rose sharply between January 2021 and the spring of 2022. Weather, economic recovery and the Russian invasion of Ukraine all played a role.

Since the middle of 2022, prices for many commodities have declined, as earlier concerns about available supplies have lessened. The prices shown are monthly prices received by farmers, as reported by USDA's National Agricultural Statistics Service.

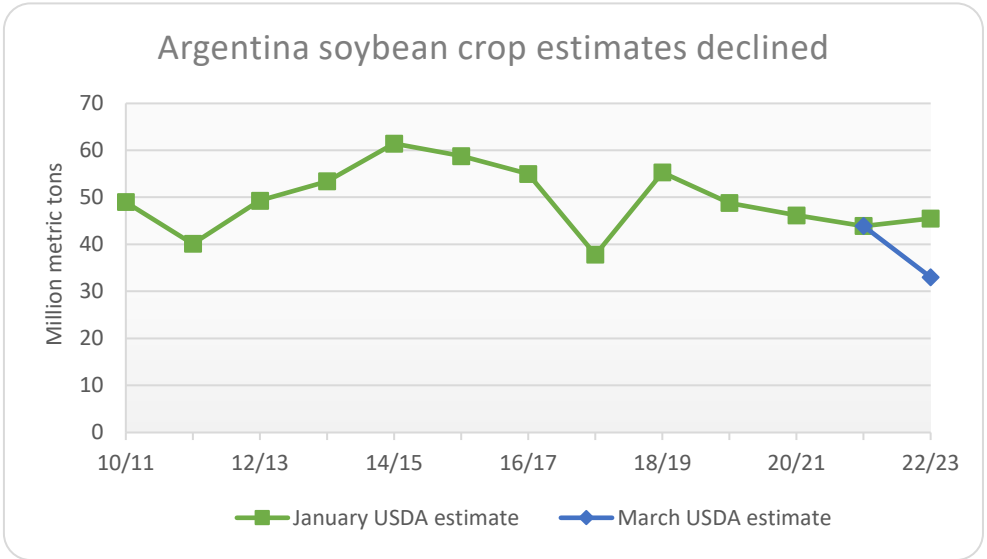


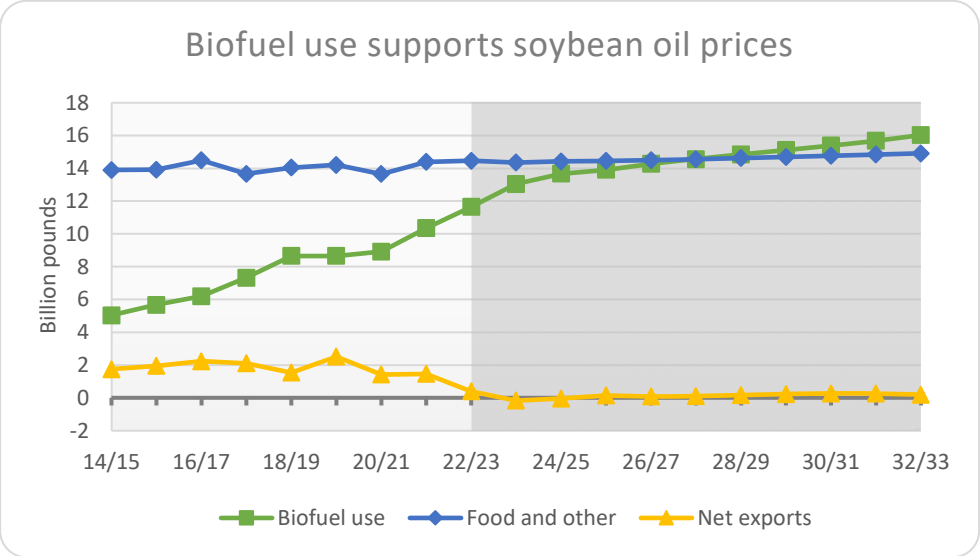

Production expenses have also increased. Higher fertilizer prices contributed to a 46% increase in corn variable costs per acre between 2020 and 2022, and large increases also occurred for other crops. Feed costs are up sharply for livestock producers and higher interest rates and labor costs also increase farm expenses. While prices of fuel and fertilizer are down from their mid-2022 peak values, farm production expenses remain much higher than they were in prior years.




The commodity market projections in this report are based on information available in January 2023. Subsequent developments have had an impact on the market outlook, but would not be reflected in the figures reported here.

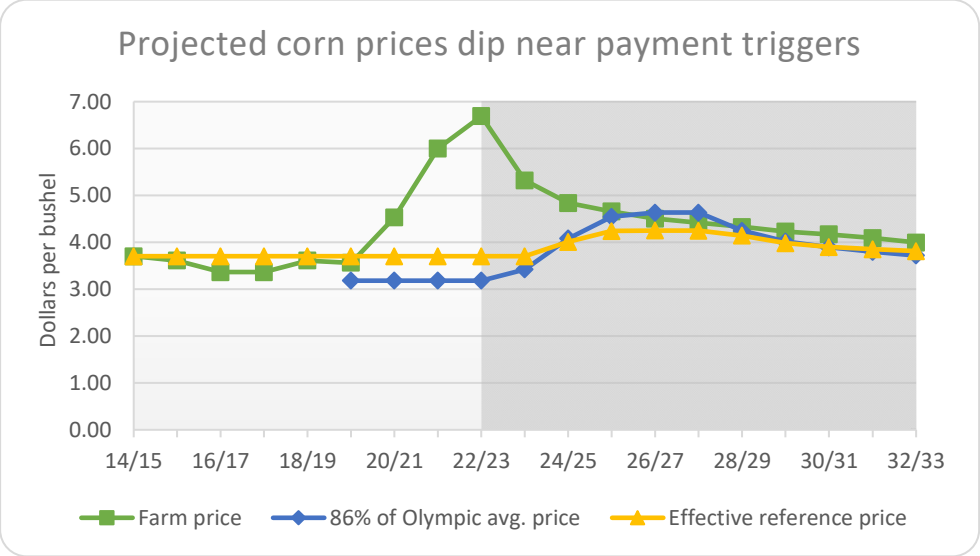
For example, drought conditions in Argentina have reduced soybean production. USDA's March 2023 estimate of Argentina's soybean crop is more than 12 million metric tons smaller than its January estimate. This would support soybean sector prices, but other recent developments also matter.



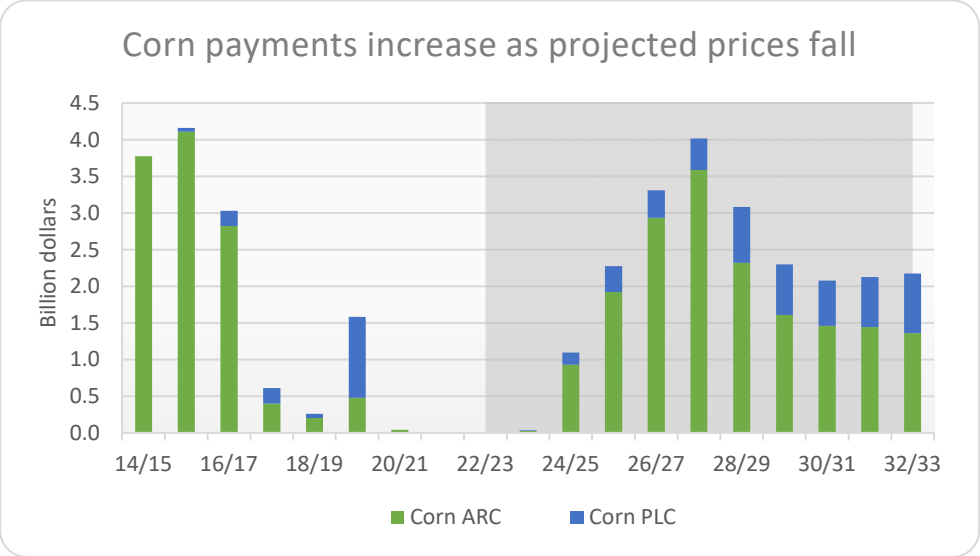



## Crop outlook highlights

The rapid expansion of renewable diesel production has increased demand for soybean oil. The United States has been a net exporter of soybean oil, but the projected growth in demand from the domestic biofuel sector means U.S. exports and imports are roughly in balance. Strength in demand for soybean oil supports prices of soybean oil and soybeans. The resulting increase in soybean crush also increases supplies of soybean meal, resulting in lower meal prices.



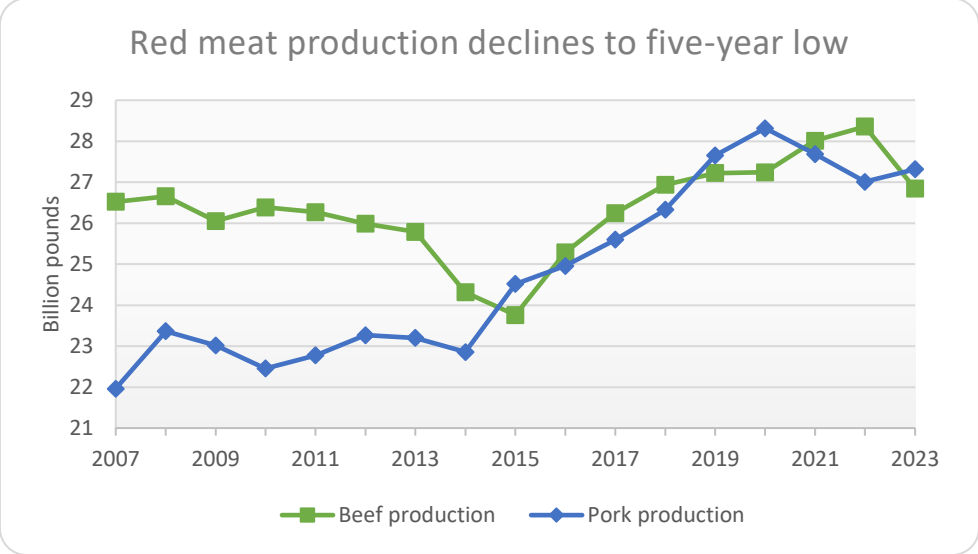

Price loss coverage (PLC) payments occur when marketing year average (MYA) prices are below the effective reference price. Agriculture risk coverage (ARC) payments occur when county per-acre revenues drop below a trigger that is based on 86% of the Olympic average MYA price multiplied by an Olympic average of county yields. Projected MYA prices decline even as the Olympic average of past prices pushes up both the ARC and PLC payment triggers. The effective reference price can exceed the statutory reference price by no more than 15%.



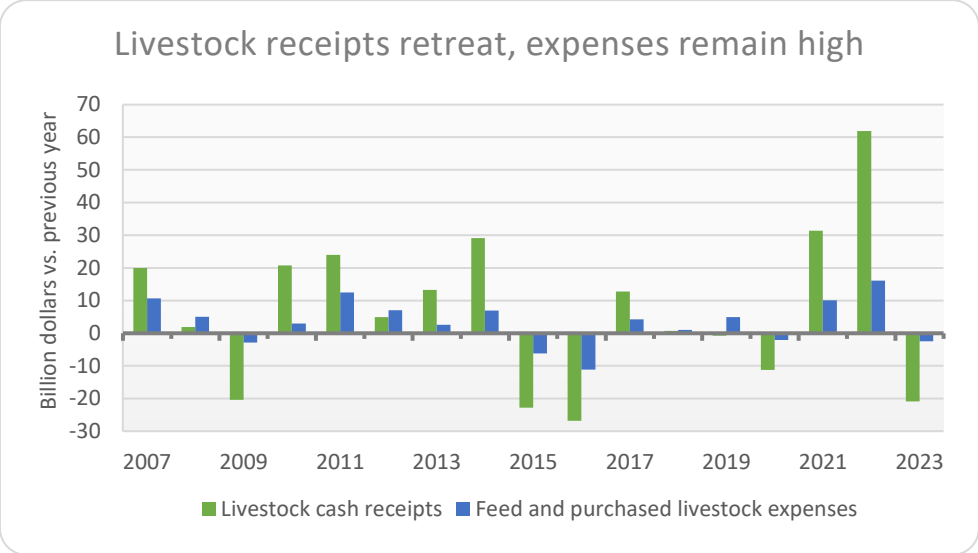

High market prices result in almost no ARC or PLC payments on corn base acreage for crops planted between 2020 and 2023. Starting in 2024, the combination of lower projected market prices and higher trigger levels for ARC and PLC increase the likelihood and size of payments. Across 500 stochastic outcomes, ARC tends to provide larger payments per base acre, so most producers are assumed to elect ARC for corn, given 2018 farm bill program provisions. Even modest changes in projected prices can have large effects on projected program participation and payments.

## Livestock and dairy outlook highlights

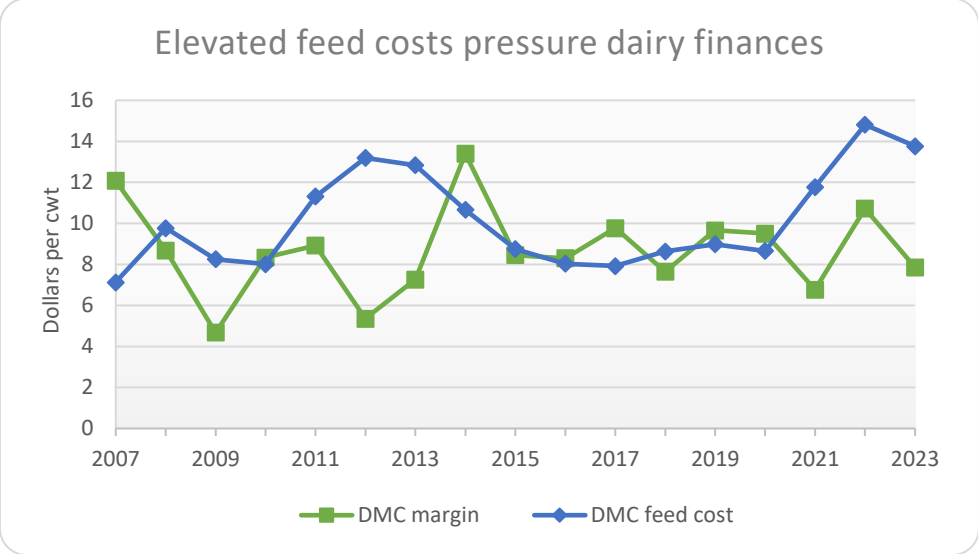
The largest decline in beef production since 2014 will outweigh modest pork production growth in 2023, leaving combined beef and pork output at its lowest level since 2018. Higher production costs and continued liquidation of the beef cow herd (due in large part to extremely dry conditions in important cow-calf production areas) are important factors in the reduced output.

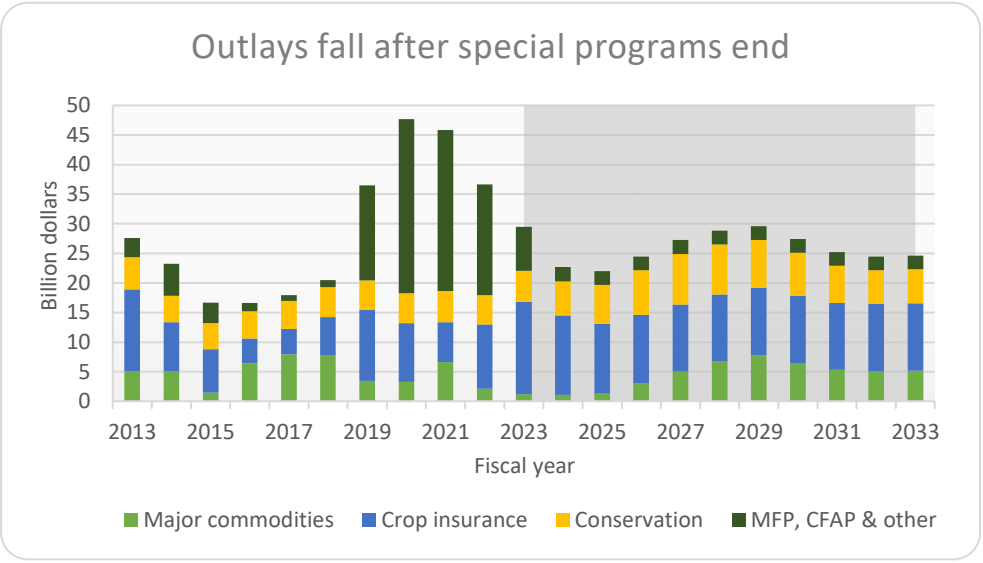



Following large back-to-back increases in livestock cash receipts, revenue for livestock producers declines in 2023. Consumer demand for meat, though still strong by historical standards, has softened in recent months and some further weakening is expected. Little relief is expected in the expense categories of purchased feed and purchased livestock, causing margins for many livestock enterprises to tighten relative to 2022.



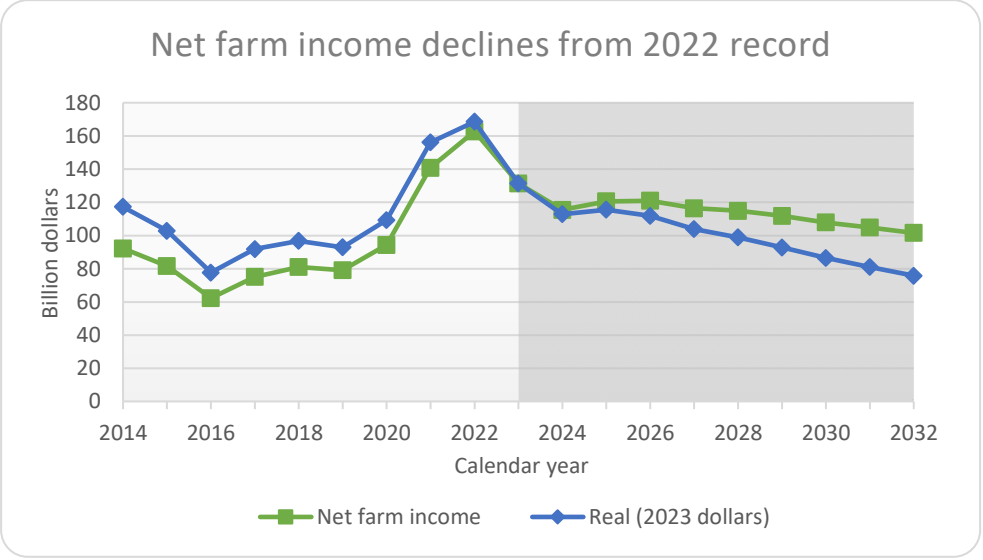

The feed cost component of the dairy margin coverage (DMC) calculation increased by more than $6/cwt from 2020 to 2022. While growth in the all milk price was even higher over that period, milk and dairy product prices have retreated faster than feed costs in recent months. With dairy demand showing signs of weakness and little relief expected in feed costs for much of 2023, margins for milk production will suffer.



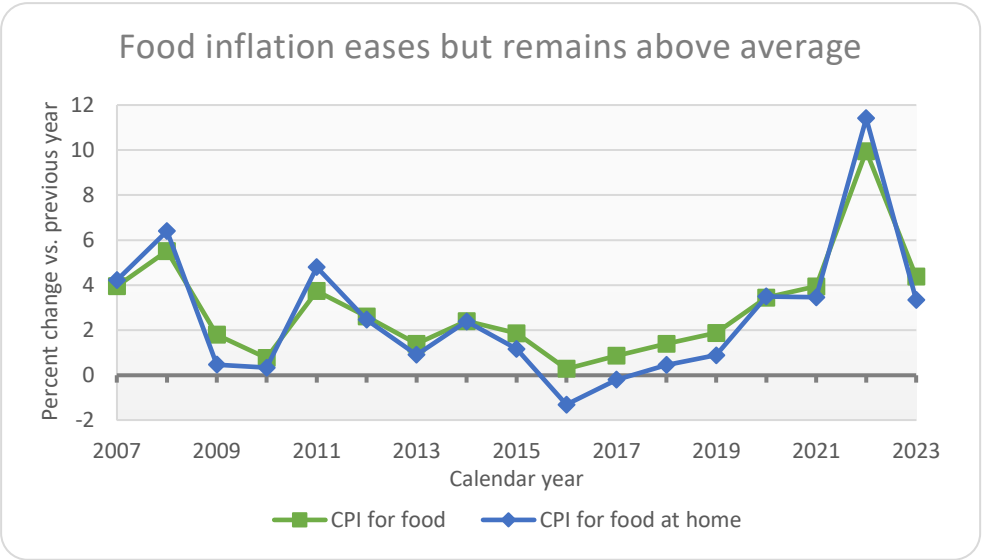



## Government costs, farm income and food prices

Ad hoc programs such as the market facilitation program (MFP) and the coronavirus food assistance program (CFAP) resulted in sharply higher spending on farm-related programs in fiscal years (FY) 2019-2022. If no new ad hoc programs are authorized, projected spending falls back in FY 2023 and FY 2024 before rising again. Projected spending averages $25.7 billion/year over the FY 2024-2033 period. Crop insurance accounts for about 45% of the total outlays.



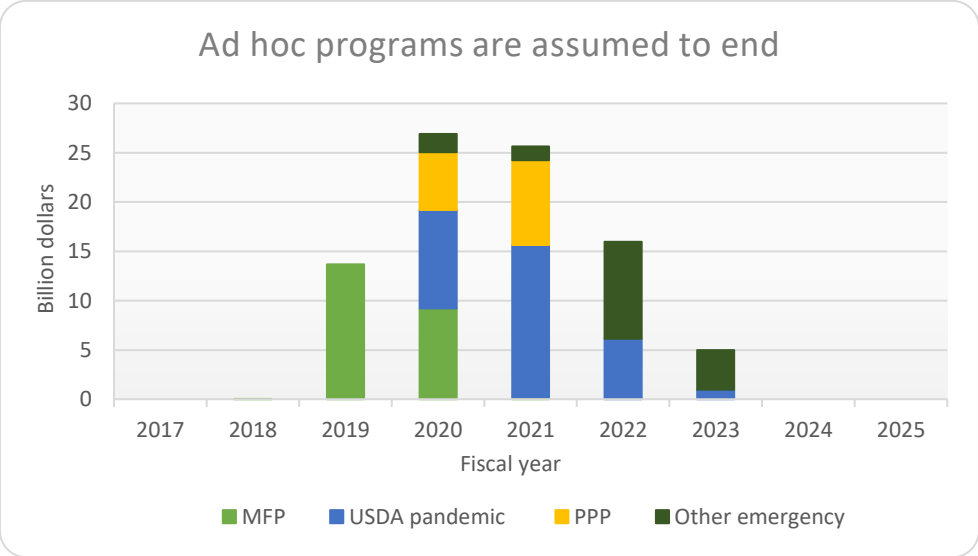

The USDA reports that 2022 net farm income was at record levels in nominal terms and the highest in decades in real terms. Projected declines in commodity prices result in lower net farm income in 2023 and 2024. While nominal net farm income stays above $100 billion each year, real net farm income eventually drops back to levels experienced between 2016 and 2020.



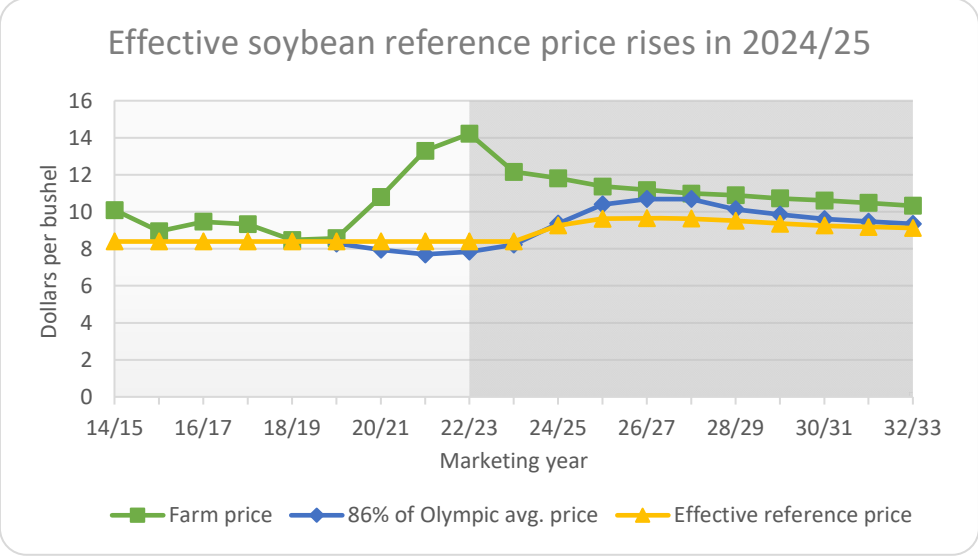

The consumer price index (CPI) for food grew by nearly 10% last year, the largest annual increase since 1979. Additionally, the CPI for food at home outpaced the overall food CPI by the largest amount since 1973. Though farm prices for many food commodities have retreated from recent highs, food inflation remains relatively high in 2023, as less than 15% of every dollar spent on food is received by producers at the farm level.

## Policy assumptions

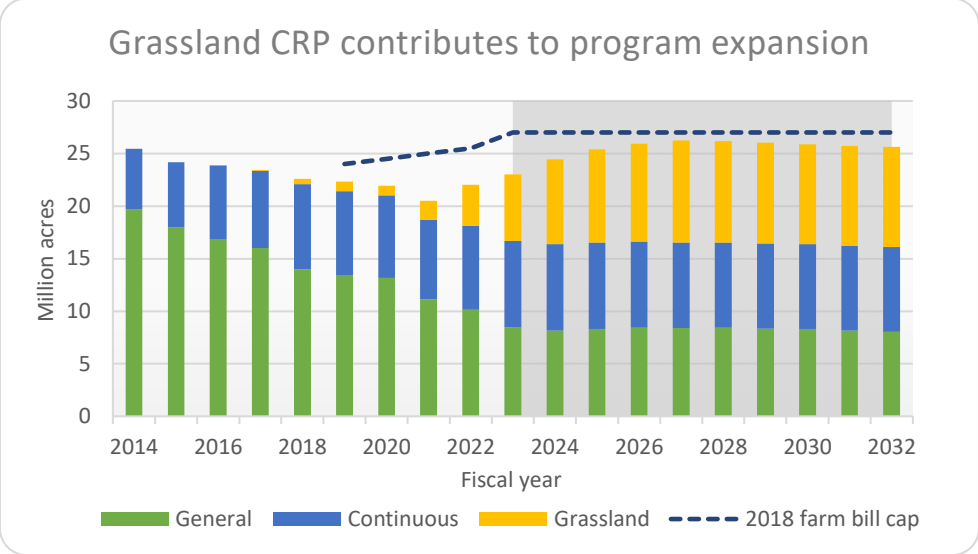
MFP compensated farmers for the impacts of retaliatory trade measures. USDA has provided pandemic assistance through CFAP and the pandemic assistance program (PAP). The paycheck protection program (PPP), a Small Business Administration program, offered forgivable loans. Additional ad hoc USDA programs have provided disaster aid. This current-policy outlook assumes no new ad hoc programs.




The outlook assumes provisions of the 2018 farm bill through 2032/33. Producers face annual decisions about whether to elect ARC or PLC for the eligible base acreage on their farms. The 2018 farm bill allows effective reference prices to exceed the statutory level by up to 15% when an Olympic average of past market prices exceeds the effective reference price by a sufficient amount. ARC payments trigger when county revenues per acre drop below a trigger based on 86% of Olympic averages of prices and county yields.




The current cap on conservation reserve program (CRP) enrolled acreage is 27 million acres in FY 2023, as increased and set in the 2018 farm bill. Enrolled acreage has increased steadily the past few years but remains below the cap. The grassland CRP program has seen rapid growth since introduction and in this baseline is assumed to account for all of the net growth in acres and push total enrolled acreage close to the cap by 2026. General and continuous acreage is assumed to decline then remain steady.



# Selected U.S. crop commodity program provisions

| Policy | Crop/provision | 2022/23-2023/24 average | 2024/25-2032/33 average |
|---|---|---|---|
| **Price loss coverage (PLC)** | | **Effective reference price** | **Effective reference price** |
| (Makes payments when marketing year average (MYA) price falls below the effective reference price. Paid on 85% of base acres and program yields. Effective reference price can exceed minimum if the moving average of MYA prices exceeds the minimum by at least 17.6%.) | Corn | $3.70 per bu. | $4.05 per bu. |
| | Soybeans | $8.40 per bu. | $9.40 per bu. |
| | Wheat | $5.50 per bu. | $5.75 per bu. |
| | Long grain rice | $14.00 per cwt | $14.00 per cwt |
| | Japonica rice | $17.30 per cwt | $17.30 per cwt |
| | Sorghum | $3.95 per bu. | $4.19 per bu. |
| | Barley | $4.95 per bu. | $4.98 per bu. |
| | Oats | $2.40 per bu. | $2.76 per bu. |
| | Peanuts | $535.00 per ton | $535.00 per ton |
| | Sunflowers | $0.202 per lb | $0.216 per lb |
| | Seed cotton | $0.367 per lb | $0.368 per lb |
| **Marketing loan program** | | **Loan rate** | **Loan rate** |
| (Producers can borrow at the loan rate and receive benefits if a market price indicator falls below the loan rate.) | Corn | $2.20 per bu. | $2.20 per bu. |
| | Soybeans | $6.20 per bu. | $6.20 per bu. |
| | Wheat | $3.38 per bu. | $3.38 per bu. |
| | Rice | $7.00 per cwt | $7.00 per cwt |
| | Upland cotton | $0.520 per lb | $0.520 per lb |

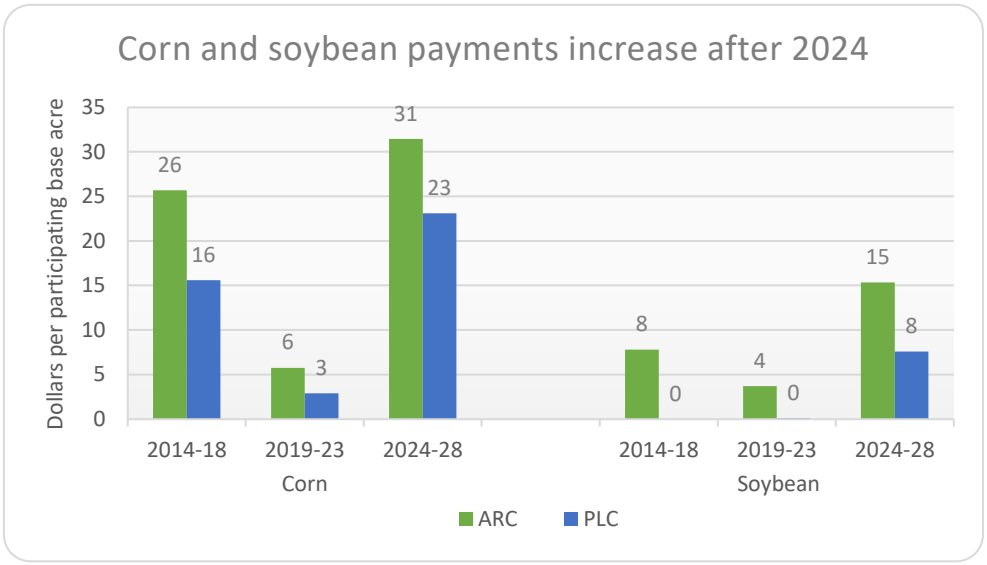
# Other policy assumptions

| Policy | Description |
|---|---|
| **Agriculture risk coverage (ARC)** | County version (ARC-CO) makes payments when county revenues per acre fall below 86% of benchmark county revenue tied to moving averages of MYA prices and trend-adjusted county yields. Payments are made on 85% of base acreage. |
| **Dairy margin coverage (DMC)** | Milk producers receive payments when the margin between milk prices and an indicator of feed prices falls below coverage levels chosen by the producer.<br><br>Producers pay premiums, with much lower premiums on the first 5 million pounds of milk than than on additional quantities. |
| **Conservation reserve program (CRP)** | Maximum allowed enrollment increases to 27 million acres by 2023.<br><br>Maximum rental rate is 85% of county average rental rate for general signups and 90% of county average rental rate for continuous signups. |
| **Trade policies** | Trade policies in place in January 2023 continue. No follow-on to the Phase 1 agreement with China is assumed. |
| **Coronavirus and other ad hoc programs** | Pandemic assistance programs announced prior to mid-January 2023 are implemented, but no new programs are assumed. |

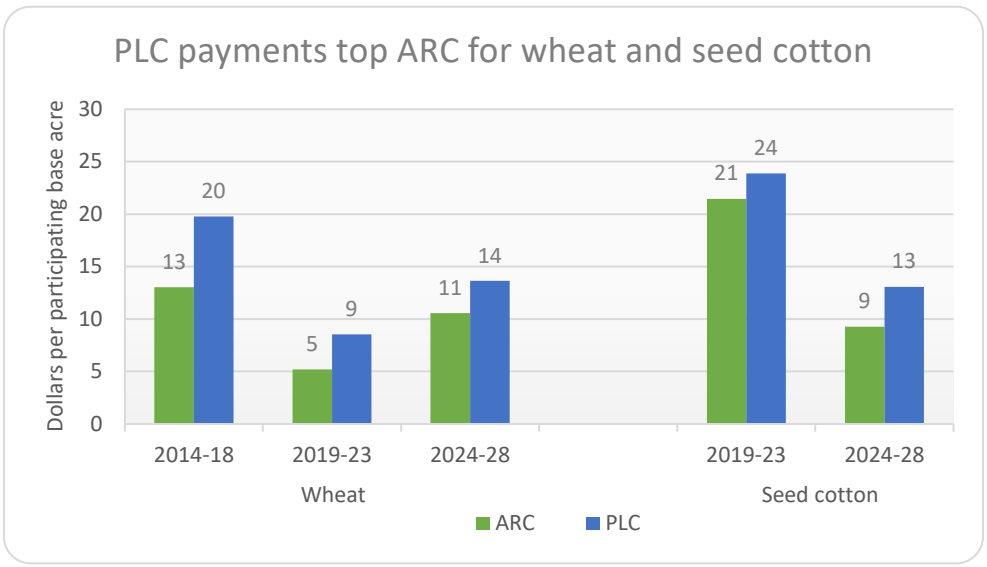
Note: These policy assumptions are not a prediction of future policy outcomes. Alternative policy scenarios can be evaluated against this current policy baseline.

## Crop program payments and participation

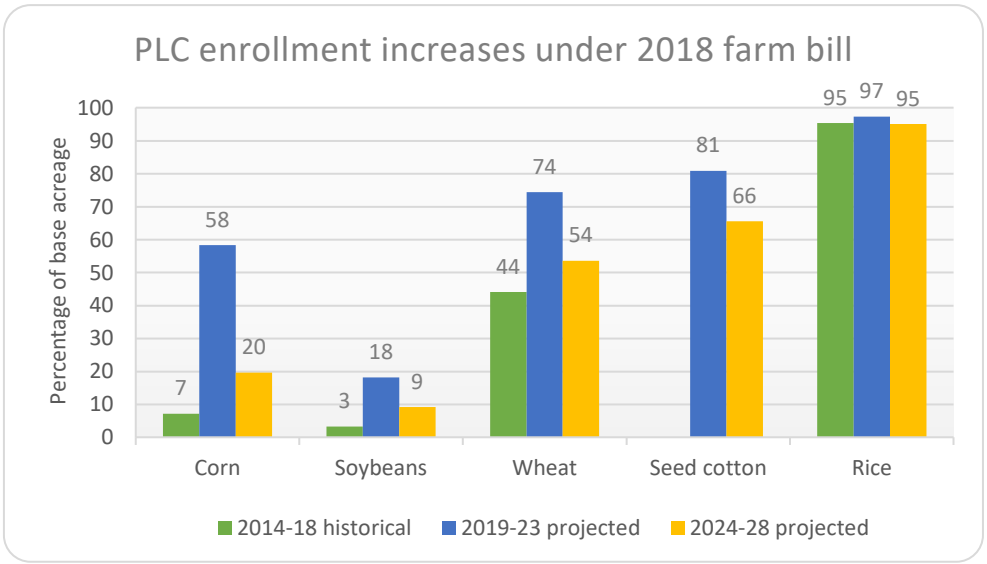
Under the 2014 farm bill, national average ARC payments per participating corn base acre exceeded PLC payments. Under the 2018 farm bill, changing market conditions reduce corn payments under both programs. To date, no PLC payments have been made to soybean producers. Projected average payments are greater in the 2024-28 period for both crops and both programs, as market prices fall and ARC and PLC payment triggers increase in response to higher Olympic average prices.




For wheat, seed cotton and many other crops, historical and projected average PLC payments exceed ARC payments per participating base acre. Seed cotton only became eligible for ARC and PLC payments in 2018. Note that payments can vary greatly from one year to the next because of changing market conditions, and for many commodities, the most likely payment rate in any given year is zero. In addition ARC payments vary geographically, as they depend in part on county-level yields.




The 2018 farm bill gave producers the opportunity to make new ARC-PLC elections in 2019, 2021, 2022 and 2023. Given expected payment rates, much of the corn and wheat base acreage shifted from ARC to PLC in 2019, while most soybean base remains enrolled in ARC. Looking ahead, projected average ARC payments exceed PLC payments for corn, so more corn base may be enrolled in ARC if current program provisions remain in place. Most wheat, seed cotton and rice base acreage has been enrolled in PLC, and this is expected to continue.

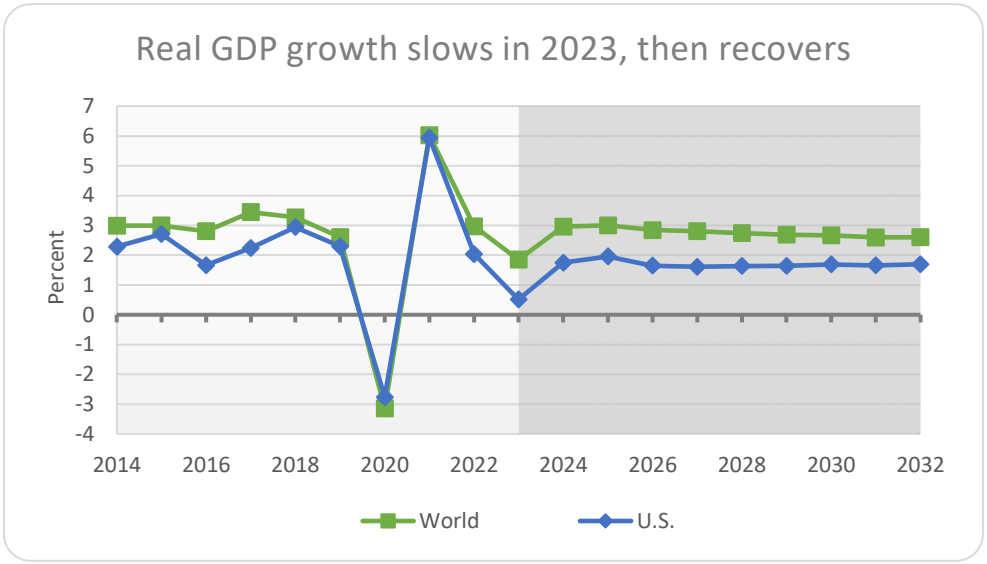


# ARC and PLC payments and participation rates

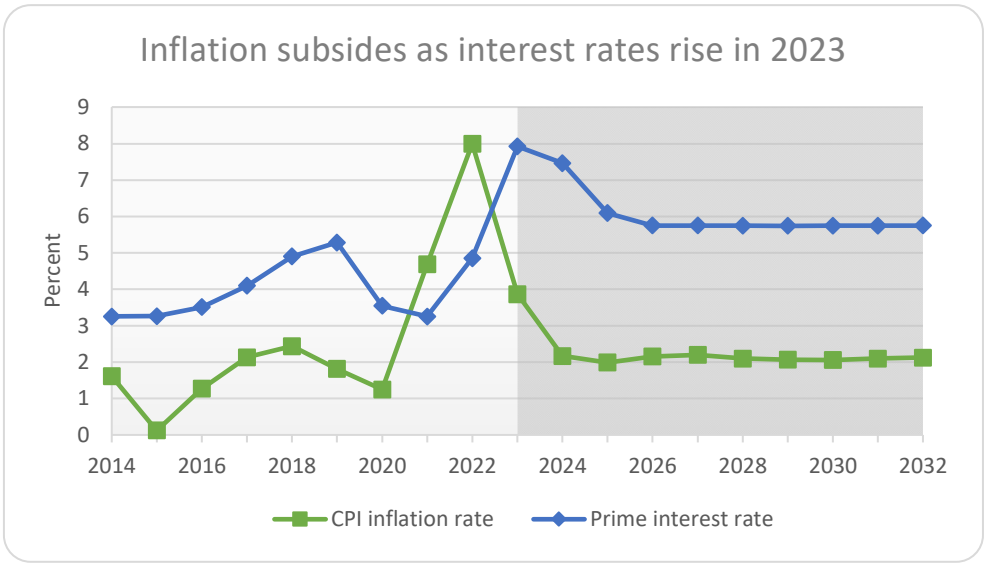
| | Average ARC payment | Average PLC payment | Share of base acres in ARC | Share of base acres in PLC |
|---|---|---|---|---|
| **Average for 2014-2018 crop years** | (Dollars per base acre) | | (Percent) | |
| Corn | 25.67 | 15.59 | 92.8 | 7.2 |
| Soybeans | 7.80 | 0.00 | 96.7 | 3.3 |
| Wheat | 13.04 | 19.77 | 55.9 | 44.1 |
| Sorghum | 14.88 | 29.73 | 31.0 | 69.0 |
| Barley | 7.50 | 7.17 | 25.2 | 74.8 |
| Oats | 8.62 | 4.55 | 65.9 | 34.1 |
| Rice | 18.86 | 125.07 | 4.6 | 95.4 |
| Peanuts | 45.40 | 201.51 | 0.3 | 99.7 |
| Sunflower seed | 8.17 | 17.90 | 43.5 | 56.5 |
| Canola | 15.30 | 43.56 | 2.8 | 97.2 |
| **Average for 2019-2023 crop years** | | | | |
| Corn | 5.76 | 2.90 | 41.6 | 58.4 |
| Soybeans | 3.70 | 0.10 | 81.8 | 18.2 |
| Wheat | 5.19 | 8.55 | 25.6 | 74.4 |
| Sorghum | 3.68 | 6.22 | 20.0 | 80.0 |
| Barley | 5.99 | 4.12 | 21.1 | 78.9 |
| Oats | 1.65 | 0.00 | 44.8 | 55.2 |
| Seed cotton | 21.46 | 23.87 | 19.1 | 80.9 |
| Rice | 2.25 | 60.90 | 2.7 | 97.3 |
| Peanuts | 19.86 | 91.21 | 1.0 | 99.0 |
| Sunflower seed | 3.60 | 1.29 | 28.1 | 71.9 |
| Canola | 8.32 | 17.29 | 12.2 | 87.8 |
| **Average for 2024-2028 crop years** | | | | |
| Corn | 31.44 | 23.12 | 80.3 | 19.7 |
| Soybeans | 15.35 | 7.58 | 90.8 | 9.2 |
| Wheat | 10.56 | 13.63 | 46.4 | 53.6 |
| Sorghum | 11.49 | 16.33 | 19.5 | 80.5 |
| Barley | 8.90 | 16.81 | 26.4 | 73.6 |
| Oats | 2.10 | 0.18 | 63.5 | 36.5 |
| Seed cotton | 9.26 | 13.07 | 34.4 | 65.6 |
| Rice | 27.02 | 55.07 | 4.9 | 95.1 |
| Peanuts | 27.46 | 110.18 | 1.1 | 98.9 |
| Sunflower seed | 6.87 | 1.11 | 75.3 | 24.7 |
| Canola | 9.16 | 6.98 | 76.2 | 23.8 |

## Macroeconomic assumptions and farm prices paid

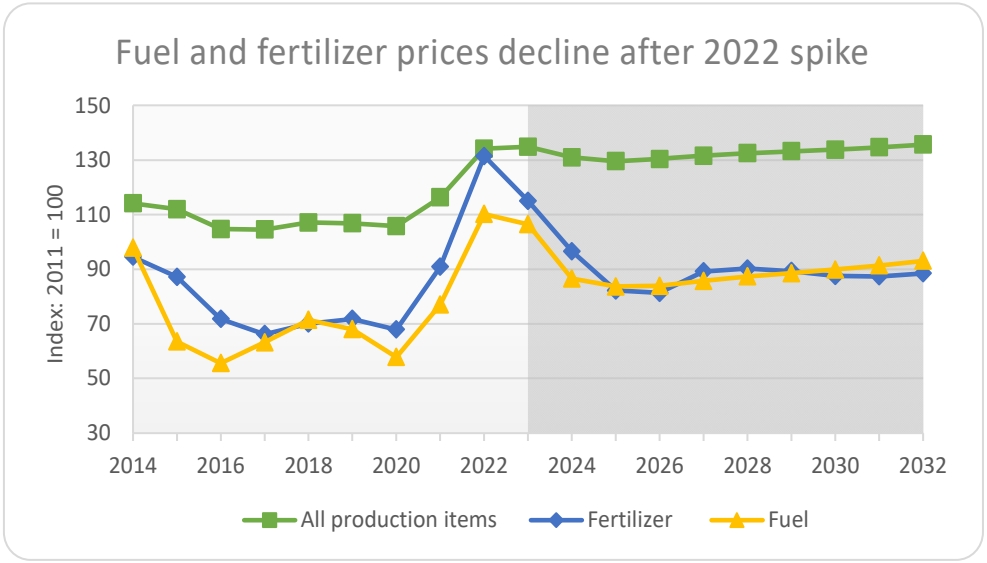
Real GDP fell in 2020 due to the pandemic and rebounded sharply in 2021. In January 2023, S&P Global forecasted slower growth in the U.S. and world economies in 2023, followed by a return to more normal rates of growth in 2024. Changes in GDP and consumer spending can have important impacts on farm commodity demand and prices.




U.S. CPI reached the highest level in decades in 2022. In response, the Federal Reserve increased interest rates. In its January 2023 forecast, S&P Global expected inflation to subside in 2023 and return to the Fed's target of 2% in 2024. Once that occurs, S&P suggests that interest rates could be reduced. Note that the forecasted prime rate remains above the pre-pandemic level through 2032. Higher interest rates increase farm borrowing costs and may put downward pressure on farm real estate values.




The Russian invasion of Ukraine contributed to a sharp increase in fuel prices in 2022. Fertilizer prices also spiked in response to higher natural gas prices (especially in Europe), strong demand caused by high farm commodity prices and other factors. Prices for those key inputs have declined from their 2022 peaks, and further drops are projected in 2024 and 2025. However, higher interest and labor costs keep the index of farm production item prices elevated in 2023, with only slight reductions ahead.



# Macroeconomic assumptions

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Real GDP growth** | | | | | (Percent change from previous year) | | | | | | |
| United States | 2.0 | 0.5 | 1.8 | 2.0 | 1.6 | 1.6 | 1.6 | 1.6 | 1.7 | 1.7 | 1.7 |
| China | 2.8 | 5.0 | 5.8 | 5.0 | 4.9 | 4.7 | 4.6 | 4.4 | 4.3 | 4.0 | 4.1 |
| World | 3.0 | 1.9 | 3.0 | 3.0 | 2.8 | 2.8 | 2.7 | 2.7 | 2.7 | 2.6 | 2.6 |
| **Population growth** | | | | | | | | | | | |
| United States | 0.3 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| World | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| U.S. CPI, all urban consumers | 8.0 | 3.9 | 2.2 | 2.0 | 2.2 | 2.2 | 2.1 | 2.1 | 2.1 | 2.1 | 2.1 |
| U.S. real disposable income | -6.4 | 2.7 | 3.7 | 2.9 | 2.4 | 2.5 | 2.4 | 2.3 | 2.3 | 2.3 | 2.3 |
| | | | | | (Percent) | | | | | | |
| U.S. unemployment rate | 3.7 | 4.6 | 4.8 | 4.5 | 4.4 | 4.4 | 4.4 | 4.3 | 4.3 | 4.3 | 4.3 |
| 3-month Treasury bill rate | 2.0 | 4.6 | 4.0 | 2.7 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Prime interest rate | 4.9 | 7.9 | 7.5 | 6.1 | 5.8 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.8 |
| **Petroleum prices** | | | | | (Dollars per barrel) | | | | | | |
| West Texas Intermediate | 94.72 | 85.16 | 82.29 | 83.57 | 84.20 | 86.43 | 87.90 | 89.58 | 91.29 | 92.99 | 94.76 |
| Refiners' acquisition cost | 95.07 | 86.32 | 83.38 | 85.12 | 86.24 | 88.65 | 89.99 | 91.58 | 93.40 | 95.25 | 97.13 |
| **Natural gas price** | | | | | (Dollars per million BTU) | | | | | | |
| Henry Hub | 6.43 | 4.83 | 4.49 | 4.23 | 5.19 | 5.71 | 5.56 | 5.30 | 5.04 | 5.16 | 5.31 |
| **Exchange rates** | | | | | (Currency per dollar) | | | | | | |
| Euro | 0.95 | 0.93 | 0.90 | 0.88 | 0.87 | 0.86 | 0.86 | 0.85 | 0.85 | 0.85 | 0.85 |
| Chinese yuan | 6.73 | 6.63 | 6.38 | 6.26 | 6.19 | 6.23 | 6.34 | 6.40 | 6.48 | 6.55 | 6.58 |

Source: S&P Global, January 2023

# Indices of prices paid by farmers

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Production items, interest,** | | | | | (2011 = 100) | | | | | | |
| **taxes and wages** | 135.7 | 138.1 | 136.0 | 135.1 | 136.4 | 138.1 | 139.8 | 141.3 | 142.6 | 144.3 | 146.0 |
| Production items | 134.1 | 134.9 | 131.0 | 129.5 | 130.3 | 131.5 | 132.5 | 133.2 | 133.8 | 134.7 | 135.7 |
| Feed | 141.8 | 139.0 | 124.3 | 119.1 | 116.8 | 115.3 | 114.1 | 113.1 | 112.1 | 111.1 | 110.0 |
| Livestock & poultry | 122.5 | 122.7 | 132.9 | 138.8 | 139.7 | 135.5 | 133.0 | 130.8 | 127.6 | 125.6 | 123.4 |
| Seeds | 129.6 | 138.7 | 144.3 | 146.5 | 147.6 | 148.4 | 149.1 | 149.8 | 150.6 | 151.5 | 152.4 |
| Fertilizer | 131.4 | 115.0 | 96.5 | 82.2 | 81.3 | 89.2 | 90.2 | 89.3 | 87.5 | 87.4 | 88.5 |
| Mixed fertilizer | 118.8 | 101.9 | 93.7 | 79.3 | 78.5 | 86.1 | 86.8 | 85.8 | 84.0 | 83.9 | 85.0 |
| Nitrogen fertilizer | 150.9 | 126.4 | 95.8 | 82.3 | 81.1 | 88.8 | 90.4 | 89.8 | 88.1 | 87.6 | 88.6 |
| Potash and phosph. | 109.8 | 107.1 | 95.0 | 80.2 | 80.2 | 88.1 | 88.5 | 87.2 | 85.5 | 86.1 | 87.5 |
| Agricultural chemicals | 143.0 | 147.3 | 136.1 | 125.9 | 127.9 | 129.9 | 132.2 | 134.5 | 136.9 | 139.4 | 142.0 |
| Fuels | 110.2 | 106.4 | 86.6 | 83.6 | 83.9 | 85.7 | 87.3 | 88.5 | 89.8 | 91.4 | 93.0 |
| Supplies & repairs | 139.0 | 135.8 | 137.0 | 139.9 | 143.3 | 147.0 | 150.9 | 154.9 | 159.0 | 163.3 | 167.8 |
| Autos & trucks | 124.5 | 128.6 | 129.6 | 130.5 | 131.6 | 132.9 | 134.5 | 136.2 | 137.9 | 139.8 | 141.7 |
| Farm machinery | 171.4 | 162.6 | 153.8 | 151.9 | 152.8 | 154.7 | 156.4 | 158.3 | 160.2 | 162.6 | 164.9 |
| Building material | 163.6 | 169.7 | 172.0 | 173.9 | 176.0 | 178.5 | 181.2 | 184.2 | 187.5 | 191.0 | 194.6 |
| Farm services | 132.7 | 136.5 | 137.7 | 139.7 | 142.8 | 146.1 | 149.5 | 153.0 | 156.6 | 160.4 | 164.3 |
| Interest* | 112.9 | 149.1 | 152.0 | 138.6 | 133.8 | 134.5 | 135.9 | 137.4 | 138.9 | 140.5 | 142.2 |
| Taxes** | 134.9 | 143.8 | 156.8 | 162.7 | 166.0 | 170.6 | 177.1 | 183.8 | 189.6 | 194.9 | 199.7 |
| Wage rates | 156.9 | 163.9 | 170.8 | 177.2 | 183.7 | 190.2 | 196.9 | 203.6 | 210.4 | 217.6 | 225.2 |

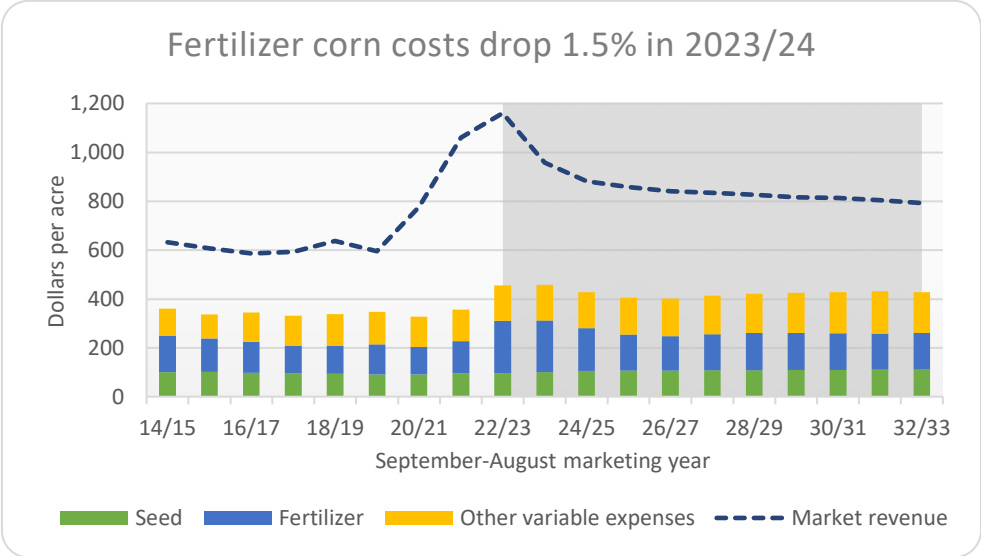
* Interest per acre on farm real estate debt and interest rate on farm non-real estate debt.

** Farm real estate taxes payable per acre.

## Crop variable expenses

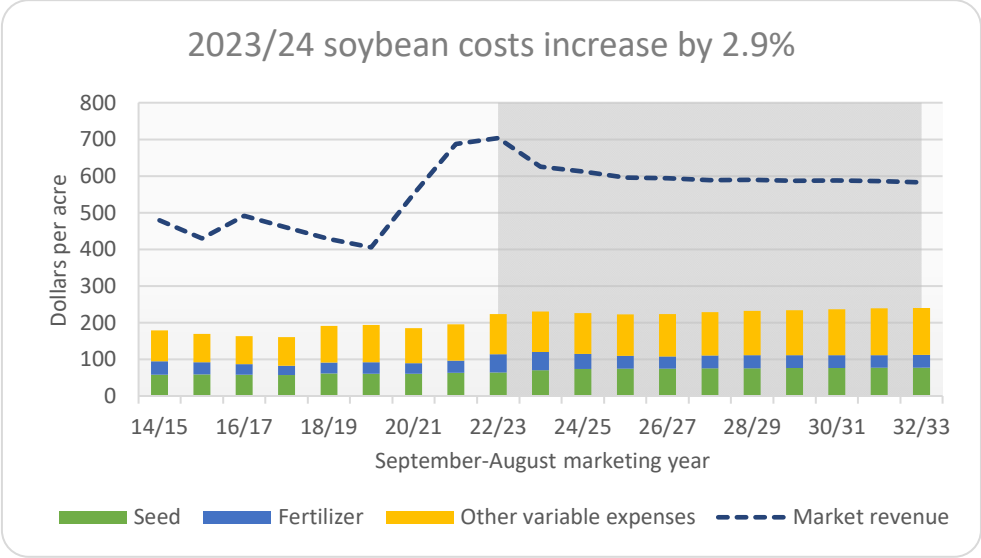
For corn, cost increases in seed, labor and interest more than offset a decline in fertilizer, fuel and repair costs, resulting in a 0.1% increase in variable expenses in 2023/24. Sharp declines in fertilizer, fuel and chemical costs in 2024-26 leave variable costs below those of 2023.

*We define variable production expenses to be USDA's operating expenses plus hired labor. This includes seed, fertilizer, fuel, chemicals and other variable inputs, but does not include the cost of land or machinery replacement.*

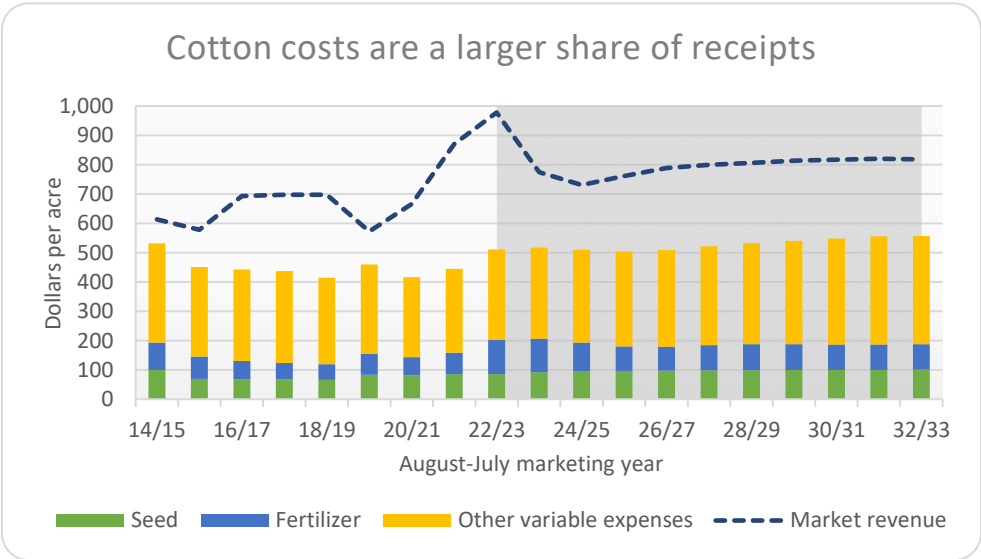



Relative to corn, soybeans utilize less fertilizer, and per-acre variable production expenses are lower.

Soybean market revenues per acre are also lower than for corn, but net returns (market revenue minus variable production costs) are similar, as the crops compete for acres. Projected soybean production expenses increase by less than 0.07%/year between 2024 and 2032, after a peak in 2023.




In contrast, national average cotton variable expenses per acre are greater relative to market receipts than in the cases of soybeans and corn. Similar to the case of corn, the rise in select cotton expenses in 2023/24 counteracts declines in fertilizer and fuel expenses. Projected increases in cotton variable expenses grow by 0.2%/year 2024-2032. Agricultural chemicals, fuel, repairs and ginning costs account for most of the other variable expenses in the chart.



# Crop variable costs of production

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Corn** | | | | | (Dollars per acre) | | | | | | |
| Seed | 95.78 | 100.67 | 105.50 | 107.08 | 107.79 | 108.35 | 108.89 | 109.43 | 109.99 | 110.63 | 111.34 |
| Fertilizer | 215.09 | 211.77 | 175.32 | 148.11 | 140.54 | 147.97 | 152.46 | 151.83 | 149.48 | 148.35 | 149.19 |
| Other variable costs | 163.73 | 162.49 | 147.45 | 144.58 | 147.01 | 150.38 | 153.74 | 156.90 | 160.13 | 163.58 | 167.16 |
| Total | 474.61 | 474.92 | 428.27 | 399.76 | 395.35 | 406.70 | 415.09 | 418.16 | 419.60 | 422.57 | 427.69 |
| **Wheat** | | | | | | | | | | | |
| Seed | 15.04 | 16.53 | 16.04 | 15.70 | 15.59 | 15.46 | 15.47 | 15.46 | 15.46 | 15.48 | 15.53 |
| Fertilizer | 81.06 | 80.08 | 66.75 | 60.14 | 56.01 | 57.35 | 59.33 | 59.11 | 58.28 | 57.72 | 57.92 |
| Other variable costs | 91.89 | 91.81 | 86.76 | 85.83 | 87.80 | 90.25 | 92.82 | 95.32 | 97.84 | 100.47 | 103.17 |
| Total | 187.98 | 188.42 | 169.55 | 161.67 | 159.41 | 163.05 | 167.62 | 169.89 | 171.58 | 173.68 | 176.62 |
| **Soybeans** | | | | | | | | | | | |
| Seed | 64.48 | 70.86 | 73.94 | 74.99 | 75.43 | 75.82 | 76.18 | 76.55 | 76.92 | 77.36 | 77.84 |
| Fertilizer | 49.98 | 49.65 | 41.25 | 35.05 | 33.11 | 34.93 | 35.73 | 35.35 | 34.69 | 34.59 | 34.89 |
| Other variable costs | 126.92 | 122.40 | 113.76 | 111.51 | 113.35 | 115.71 | 118.12 | 120.46 | 122.85 | 125.40 | 128.01 |
| Total | 241.39 | 242.91 | 228.95 | 221.54 | 221.90 | 226.46 | 230.03 | 232.36 | 234.46 | 237.35 | 240.74 |
| **Upland cotton** | | | | | | | | | | | |
| Seed | 86.80 | 93.09 | 96.01 | 96.75 | 98.01 | 99.02 | 99.59 | 100.02 | 100.47 | 100.94 | 101.47 |
| Fertilizer | 115.55 | 113.73 | 97.98 | 84.42 | 81.27 | 86.03 | 88.53 | 88.17 | 86.99 | 86.62 | 87.26 |
| Other variable costs | 347.26 | 359.55 | 346.79 | 344.23 | 353.06 | 361.51 | 367.53 | 372.22 | 376.80 | 382.51 | 388.77 |
| Total | 549.61 | 566.37 | 540.78 | 525.40 | 532.34 | 546.55 | 555.64 | 560.41 | 564.26 | 570.07 | 577.50 |
| **Rice** | | | | | | | | | | | |
| Seed | 93.30 | 101.43 | 102.43 | 103.41 | 103.62 | 103.91 | 104.40 | 104.94 | 105.58 | 106.29 | 107.07 |
| Fertilizer | 175.75 | 173.43 | 152.62 | 130.09 | 121.62 | 127.22 | 130.32 | 129.87 | 128.28 | 127.78 | 128.73 |
| Other variable costs | 459.24 | 462.02 | 430.58 | 423.98 | 432.90 | 444.29 | 455.78 | 466.87 | 478.18 | 490.12 | 502.39 |
| Total | 728.29 | 736.89 | 685.63 | 657.49 | 658.14 | 675.42 | 690.50 | 701.67 | 712.04 | 724.20 | 738.20 |
| **Sorghum** | | | | | | | | | | | |
| Seed | 14.98 | 16.42 | 16.21 | 16.27 | 16.33 | 16.37 | 16.40 | 16.43 | 16.47 | 16.51 | 16.56 |
| Fertilizer | 66.93 | 66.16 | 54.64 | 46.47 | 44.20 | 46.62 | 48.06 | 47.87 | 47.16 | 46.84 | 47.13 |
| Other variable costs | 109.90 | 109.66 | 102.88 | 100.90 | 102.90 | 105.37 | 107.88 | 110.31 | 112.77 | 115.38 | 118.03 |
| Total | 191.81 | 192.24 | 173.72 | 163.65 | 163.43 | 168.36 | 172.34 | 174.62 | 176.40 | 178.72 | 181.73 |
| **Barley** | | | | | | | | | | | |
| Seed | 21.05 | 24.46 | 23.42 | 22.60 | 22.25 | 22.13 | 22.11 | 22.09 | 22.08 | 22.08 | 22.11 |
| Fertilizer | 82.97 | 81.94 | 69.71 | 62.38 | 59.50 | 61.83 | 63.12 | 62.76 | 61.89 | 61.52 | 61.83 |
| Other variable costs | 101.84 | 99.76 | 91.88 | 89.35 | 90.54 | 92.60 | 94.70 | 96.72 | 98.80 | 101.03 | 103.35 |
| Total | 205.86 | 206.16 | 185.00 | 174.32 | 172.30 | 176.56 | 179.93 | 181.56 | 182.76 | 184.63 | 187.29 |
| **Peanuts** | | | | | | | | | | | |
| Seed | 120.23 | 132.03 | 134.58 | 134.45 | 134.40 | 134.76 | 135.31 | 135.86 | 136.39 | 137.06 | 137.73 |
| Fertilizer | 118.73 | 116.93 | 96.69 | 81.52 | 76.92 | 82.02 | 84.79 | 84.29 | 82.88 | 82.61 | 83.50 |
| Other variable costs | 421.72 | 416.39 | 387.50 | 381.58 | 389.38 | 398.81 | 408.24 | 417.31 | 426.40 | 435.89 | 445.41 |
| Total | 660.68 | 665.35 | 618.77 | 597.55 | 600.70 | 615.60 | 628.33 | 637.46 | 645.68 | 655.55 | 666.65 |

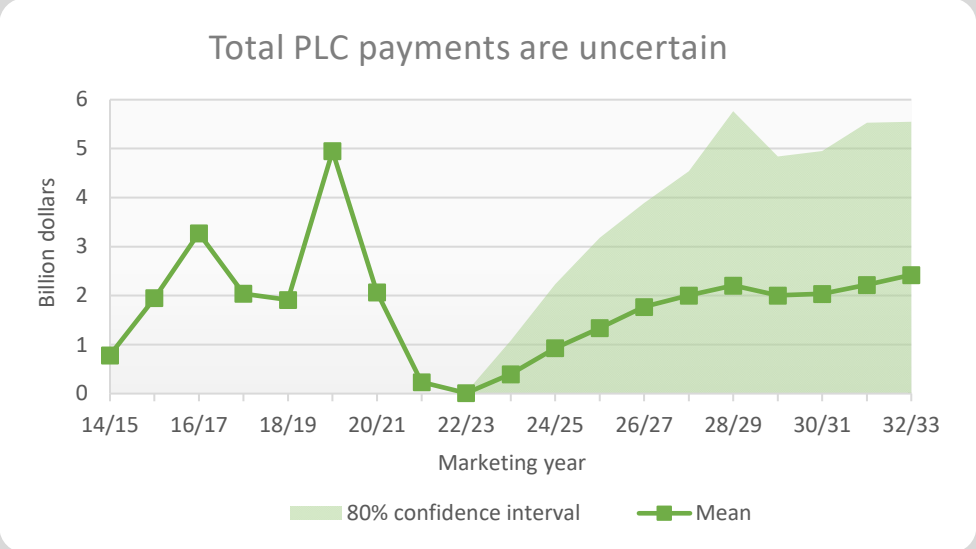
## The Stochastic Baseline

This baseline is constructed to incorporate the uncertainty of projections. Any estimate of the future has a random component that cannot be known ahead of time. As a result, a subset of the variables is allowed to be stochastic. This means that they contain a random effect. Since the models are interconnected, this leads to variability throughout the system. It is impossible to capture all uncertainty. Therefore, the stochastic baseline should not be treated as thoroughly incorporating all risk. For example, the 2020 baseline did not incorporate the possibility of a pandemic shock, and the 2022 baseline did not anticipate the possibility of a Russian invasion of Ukraine.

While the tables present one number for each variable, there is actually a distribution behind each. Many of the paths for the variables appear flat as if there is little year-over-year change. The charts and tables generally present the expectation for each year, which is the mean of the distribution. In reality, our models approximate an infinite number of outcomes.

The stochastic nature of the baseline can lead to interesting results. Consider the price loss coverage (PLC) program that makes payments when the farm price falls below the effective reference price. Our expected farm price may be above the effective reference price. However, there is some probability that the price may fall below the effective reference price in the future. All of these outcomes determine the expected PLC payments. As a result, our tables may show an expected PLC payment even when the expected farm price is above the effective reference price, such as occurs in the case of corn for every year of the projection period.

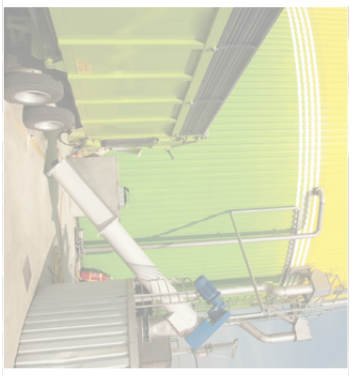
Whenever the farm price is above the effective reference price, the PLC payment is zero. However, if the inverse is true then the payment rate has a one-to-one relationship with the farm price. This creates an asymmetry in the distribution of PLC payments as the lower tail is limited at zero while the upper tail can be quite high. The table with confidence interval information for a few variables is included on the next page.



# Stochastic results

| Marketing year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Corn price** | | | | | (Dollars per bushel) | | | | | | |
| 90th percentile | 6.80 | 6.59 | 6.06 | 5.86 | 5.69 | 5.58 | 5.44 | 5.30 | 5.27 | 5.16 | 5.03 |
| Mean | 6.69 | 5.32 | 4.84 | 4.66 | 4.50 | 4.42 | 4.33 | 4.23 | 4.17 | 4.09 | 3.99 |
| 10th percentile | 6.59 | 4.29 | 3.68 | 3.52 | 3.44 | 3.36 | 3.20 | 3.22 | 3.16 | 3.13 | 3.08 |
| **Soybean price** | | | | | | | | | | | |
| 90th percentile | 14.56 | 14.61 | 14.60 | 14.24 | 13.59 | 13.58 | 13.24 | 13.21 | 12.91 | 12.96 | 12.88 |
| Mean | 14.23 | 12.17 | 11.82 | 11.37 | 11.18 | 10.99 | 10.89 | 10.73 | 10.61 | 10.48 | 10.33 |
| 10th percentile | 13.92 | 9.82 | 9.08 | 8.66 | 8.70 | 8.55 | 8.55 | 8.30 | 8.07 | 8.07 | 7.99 |
| **Wheat price** | | | | | | | | | | | |
| 90th percentile | 9.13 | 8.74 | 8.20 | 7.91 | 7.63 | 7.56 | 7.36 | 7.11 | 7.20 | 7.02 | 6.94 |
| Mean | 9.08 | 7.39 | 6.60 | 6.29 | 5.99 | 5.90 | 5.77 | 5.66 | 5.59 | 5.52 | 5.43 |
| 10th percentile | 9.02 | 6.06 | 5.09 | 4.74 | 4.49 | 4.33 | 4.25 | 4.14 | 4.12 | 4.14 | 4.09 |
| **PLC payments** | | | | | (Million dollars) | | | | | | |
| 90th percentile | 31 | 1,089 | 2,252 | 3,293 | 4,055 | 4,729 | 5,911 | 4,971 | 5,098 | 5,690 | 5,746 |
| Mean | 11 | 397 | 928 | 1,338 | 1,769 | 2,005 | 2,206 | 2,006 | 2,036 | 2,220 | 2,420 |
| 10th percentile | 3 | 3 | 24 | 115 | 166 | 191 | 145 | 130 | 146 | 161 | 199 |
| **ARC payments** | | | | | | | | | | | |
| 90th percentile | 102 | 271 | 4,063 | 6,901 | 8,586 | 9,465 | 8,123 | 6,290 | 5,846 | 5,802 | 5,477 |
| Mean | 98 | 113 | 1,365 | 2,928 | 4,272 | 5,086 | 3,607 | 2,620 | 2,347 | 2,289 | 2,211 |
| 10th percentile | 94 | 5 | 33 | 208 | 370 | 641 | 233 | 176 | 140 | 145 | 161 |
| **Crop ins. net indemnities** | | | | | | | | | | | |
| 90th percentile | 12,653 | 14,172 | 11,752 | 11,923 | 11,937 | 11,865 | 11,977 | 11,966 | 11,809 | 12,039 | 11,939 |
| Mean | 12,539 | 9,720 | 8,191 | 8,082 | 7,856 | 7,813 | 7,931 | 7,844 | 7,728 | 7,838 | 7,869 |
| 10th percentile | 12,411 | 6,264 | 4,935 | 4,655 | 4,559 | 4,461 | 4,574 | 4,566 | 4,514 | 4,684 | 4,631 |

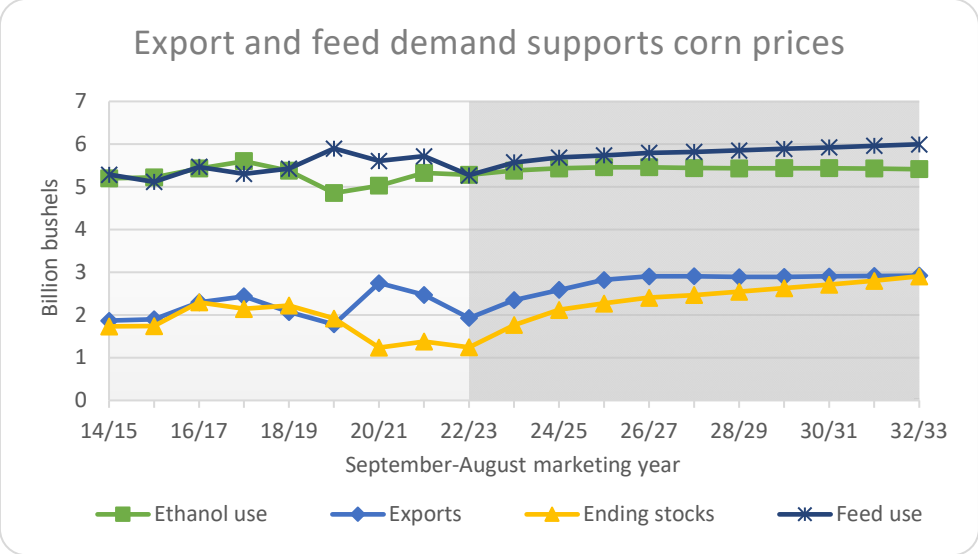




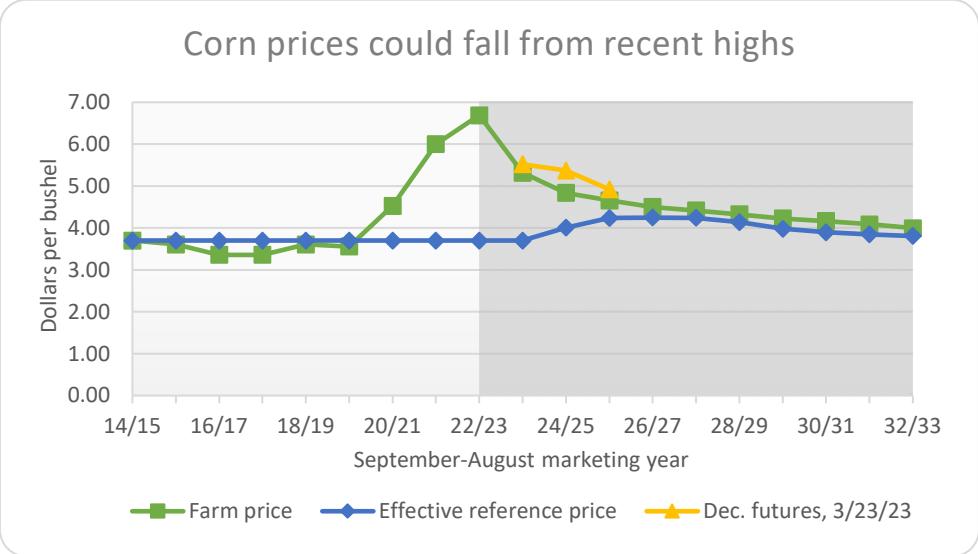

# Grains

## Corn

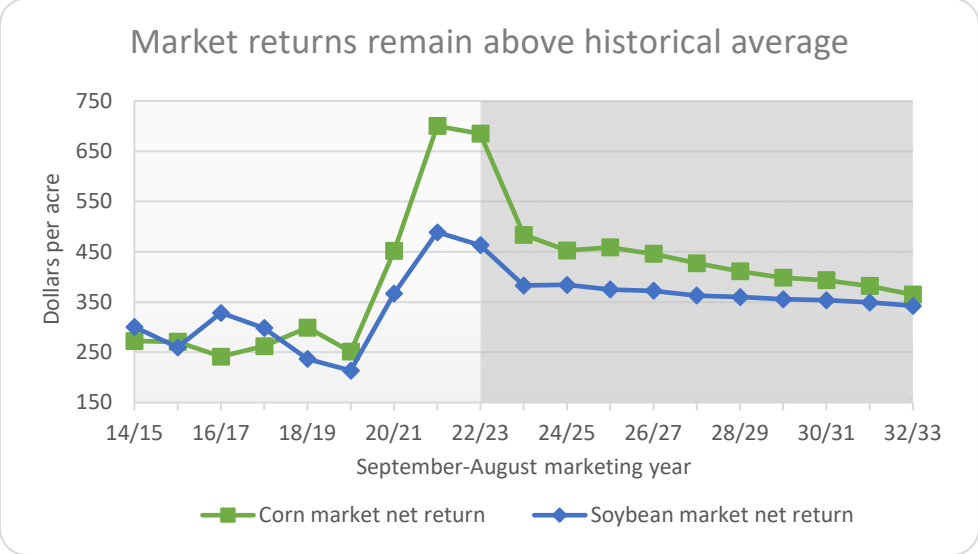
Corn prices were higher again in 2022/23 for the reasons mentioned previously. These higher prices and a stronger dollar have contributed to lower exports in 2022/23. Over the projection period, stocks build as prices fall. The stocks-to-use ratio returns to above 15% by 2026/27. Near-term export growth slows the price decline. Demand growth is projected to come primarily from feed use and exports with less from ethanol use. Projected ethanol use depends in part on renewable fuel standard (RFS) implementation.

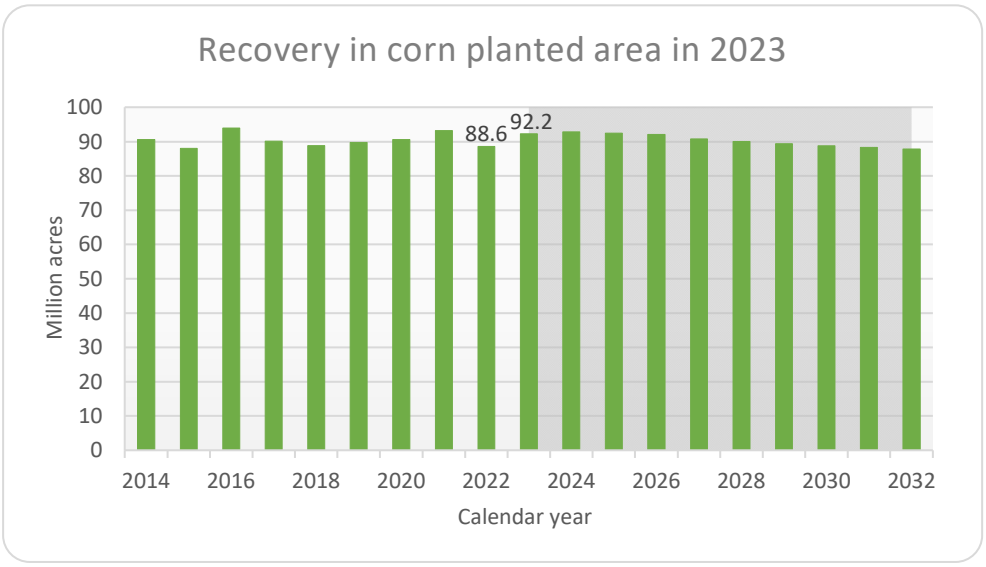



Corn prices have been on the rise for the past three marketing years but could fall in 2023/24 and later years as production recovers faster than demand grows. Higher area and trend-level yields are key to the projected price declines, and lower area, yields or other factors could keep prices elevated for longer. Prices decline to just under $4.00 by the end of the projection period. With the higher prices in recent years, effective reference prices are projected to increase in 2024/25 and later years making program payments more likely.

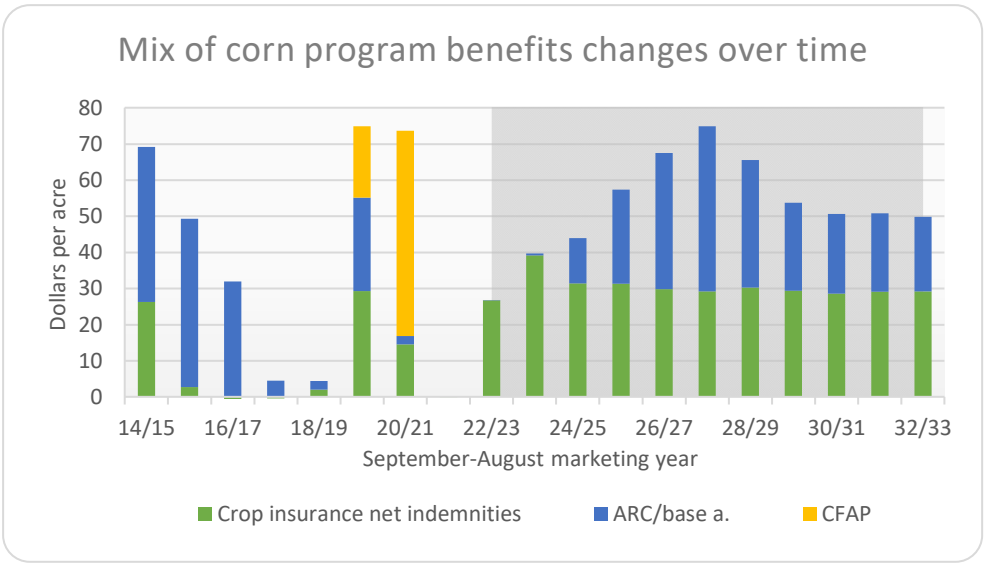



Market net returns (price multiplied by yield minus variable expenses) are projected to fall slightly for the 2022/23 marketing year relative to a year earlier but remain at elevated levels. These returns are projected to fall for both corn and soybeans in 2023/24 as market prices fall. Projected net returns decline further (but at a slower pace) in 2024/25 and later years, but remain above the average levels of 2014/15-2019/20. Note that these market net returns exclude government payments and crop insurance net indemnities.

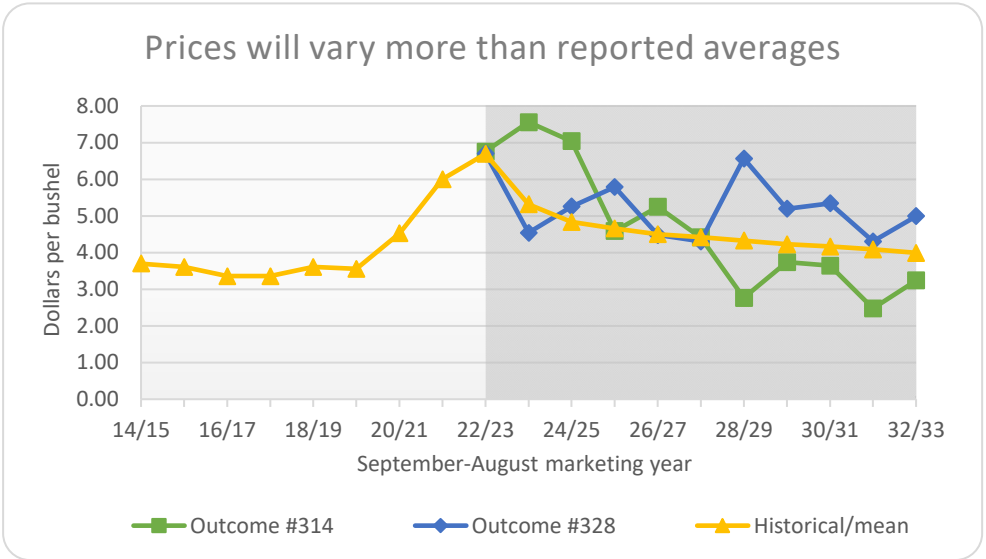





Corn area in 2023 is projected to increase to 92.2 million acres in response to projected favorable expected net returns relative to other crops despite many input prices remaining at elevated levels. Longer term, corn acreage declines as yield growth maintains supply growth, and returns to other crops are more attractive. These acreage levels assume normal conditions and could be higher or lower for a variety of reasons in any given year.




Average benefits per planted acre or per base acre for an ARC participant changes over time. In these baseline projections, ad hoc payments are assumed to go away with the average future payment made up of some combination of crop insurance or ARC program payments. Average ARC payments rise through 2027/28 as market revenues approach elevated revenue benchmarks. Projected ARC payments and crop insurance net indemnities are an average of stochastic outcomes and can be higher or lower than the averages shown in any given year.

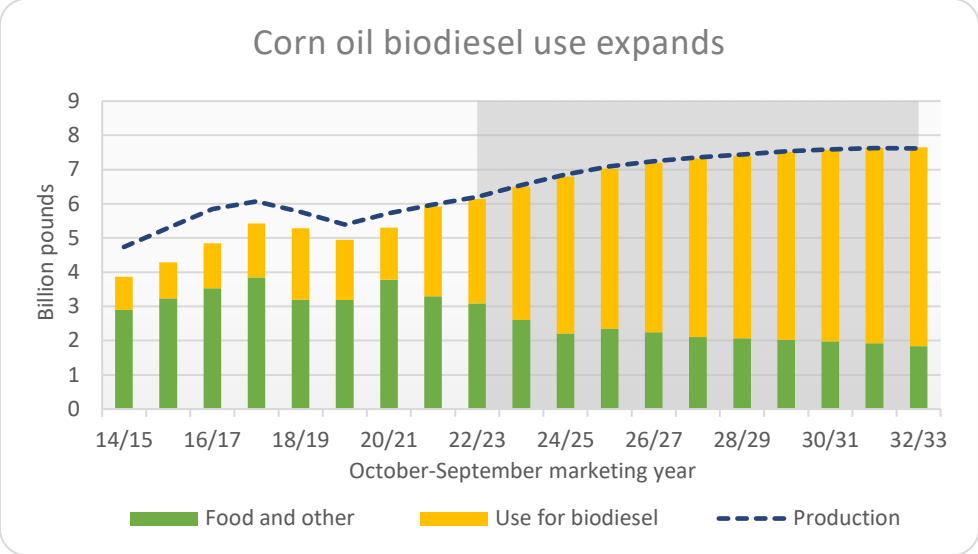



Actual crop prices will vary more than the average reported in the tables. Here we show two of the 500 simulated possible outcomes. Each outcome starts with different assumptions about uncertainties inherent to agricultural markets.

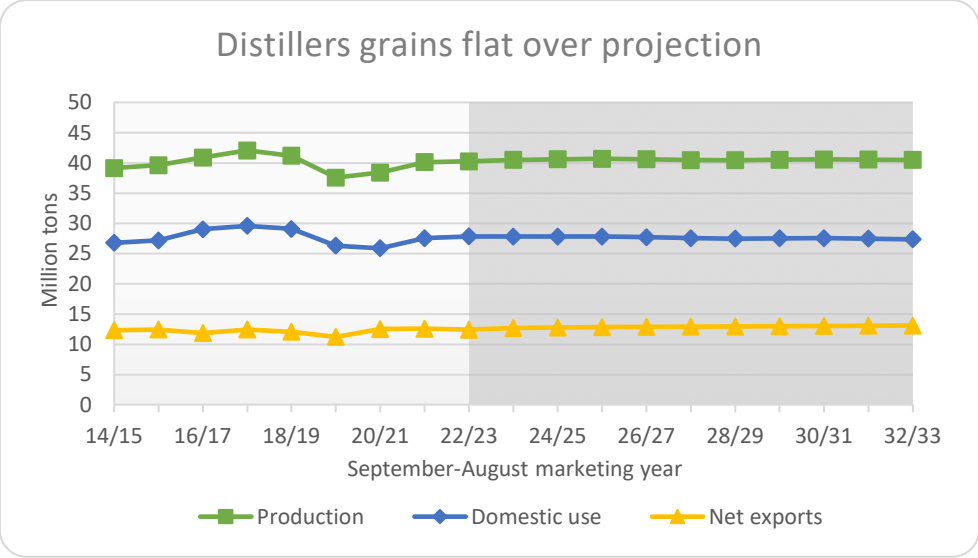
The actual price outcomes will matter for future program payments where those payments depend on averages of past prices. Under current programs, higher past prices make payments more likely when future prices fall, subject to program rules.

## Corn milling products

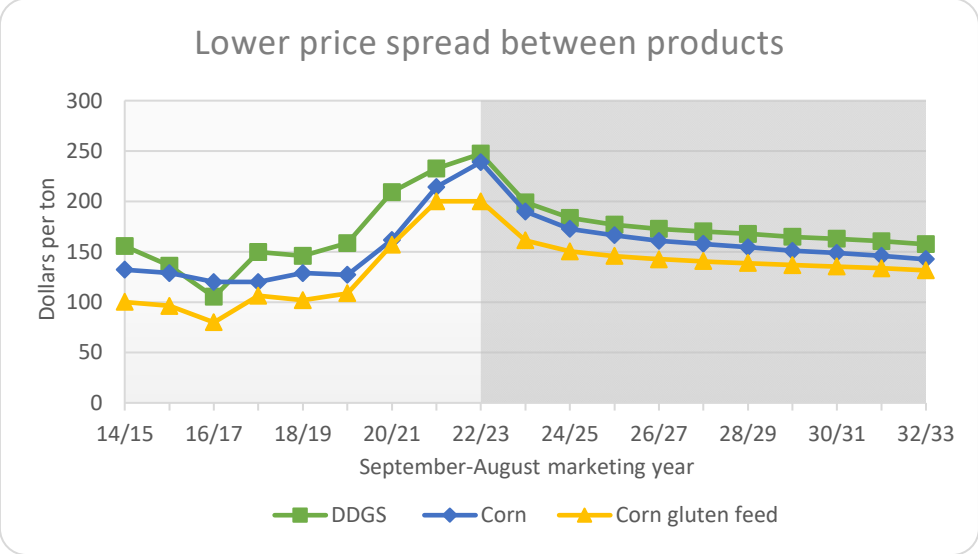
Distillers corn oil, a co-product of dry-mill ethanol production, serves as an important feedstock for biomass-based diesel production. At its current pace, this use is projected to reach 3 billion pounds in 2022/23. Over the course of the projection period, it nearly doubles to 5.8 billion pounds by 2032/33. Overall, corn oil production rises to around 7.5 billion pounds and levels off along with dry-mill ethanol production.

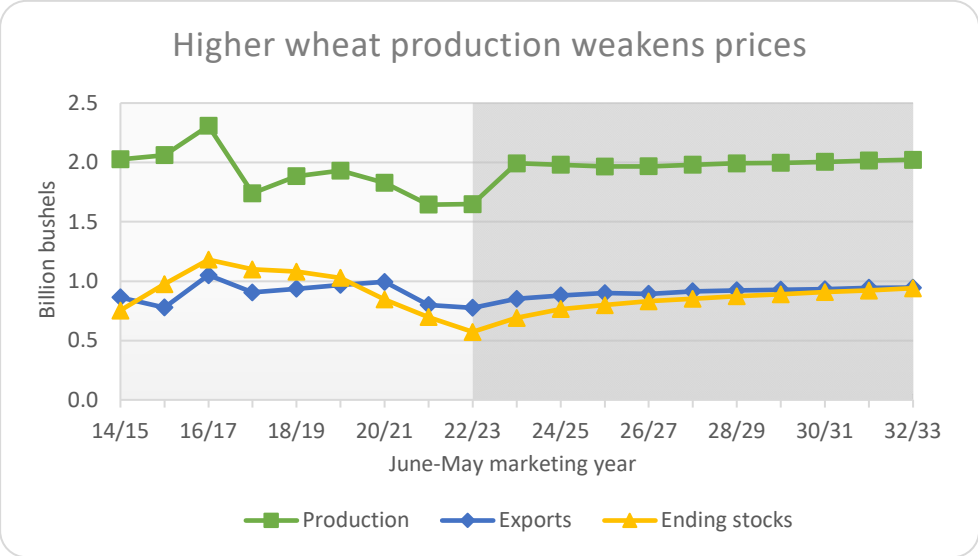



Distillers dried grains with solubles (DDGS) production follows the trajectory of dry mill ethanol production and averages about 40.5 million tons over the projection period. Along with flat production going forward, domestic use of DDGS and net exports remain roughly constant in the projection period.



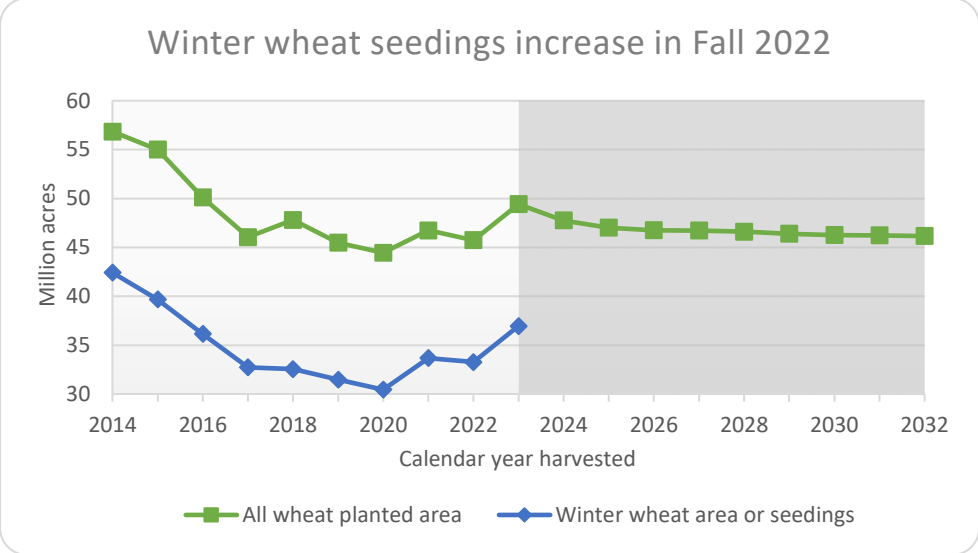

Following three consecutive years of higher prices, DDGS prices are projected to increase yet again in 2022/23 to a recent high of $247/ton before trending lower for the rest of the projection period. The price ratio between DDGS and corn holds steady but at a tighter relationship than what has tended to occur in the past. The ratio of corn gluten feed to the corn price also remains steady.



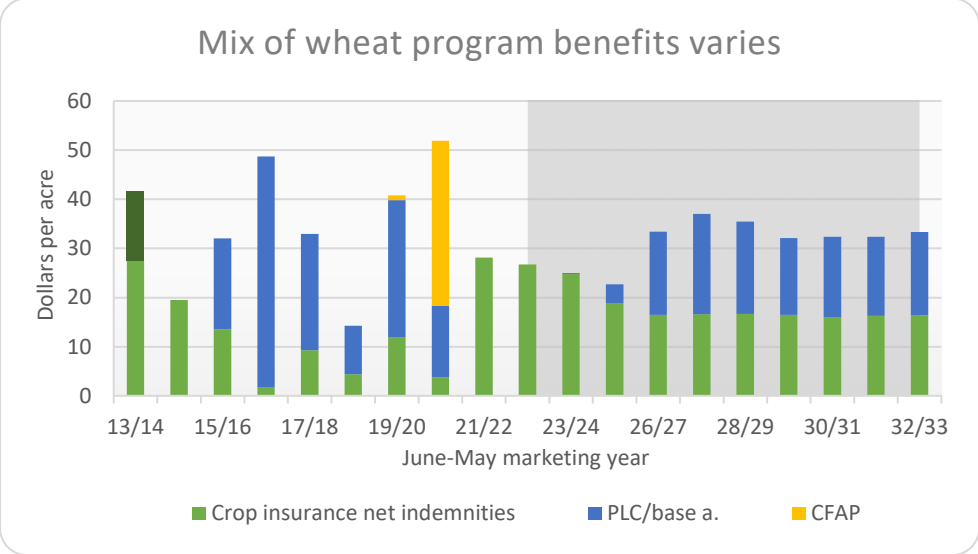



## Wheat

Higher wheat area combined with a projected return to trend yields in 2022/23 leads to a large production increase (20%) from 2022/23. Even with rising domestic use and exports, U.S. price declines. With relatively modest increases in domestic use and exports in the baseline, ending stocks and the stocks-to-use ratio rise, keeping downward pressure on wheat prices.




Higher wheat prices in 2022 supported autumn wheat seedings, contributing to higher total wheat area harvested for 2023/24. As much of U.S. winter wheat area is still in drought conditions across the Plains states, there remains a large risk for winter wheat area abandonment and lower yields. With U.S. wheat farm price projected to decline through the baseline, all wheat area decreases in latter years.

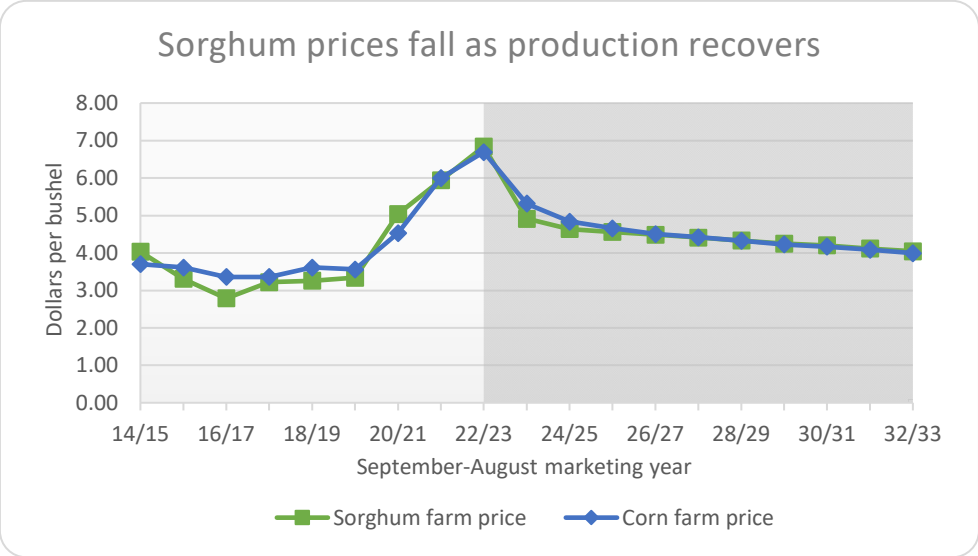



Crop insurance net indemnities averaged $6/acre from 2016/17 to 2020/21 and increase to about $17/acre over the next 10 years. For PLC participants, the payments were large between 2015/16 and 2020/21 but are effectively zero between 2021/22 and 2023/24. In later years, PLC payments could increase as average market prices fall below the effective reference price. The effective reference price rises above the minimum in 2025/26 and later years as historical prices trigger an increase.

## Sorghum

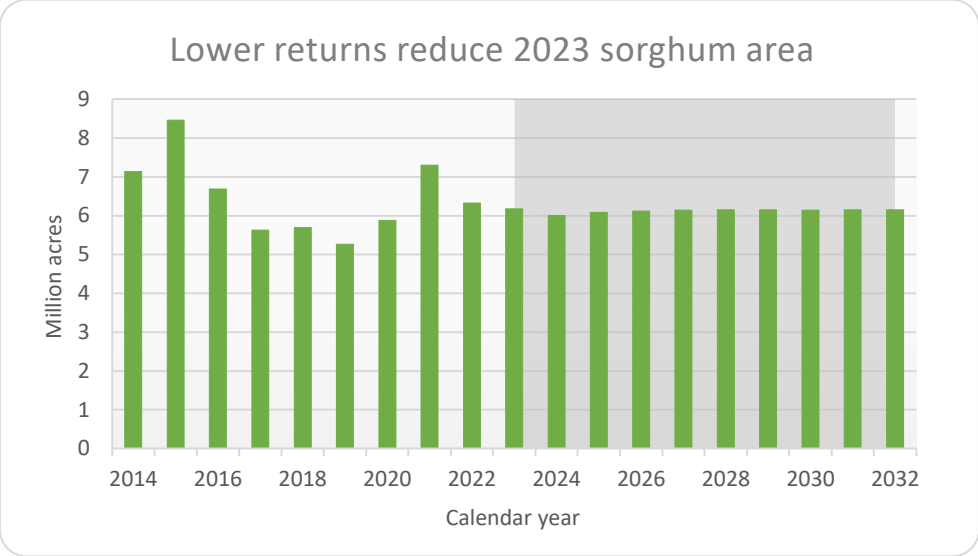
Sorghum prices in 2022/23 are projected to exceed corn prices again. Drought had a significant negative impact on yields and harvested area resulting in the lowest production in over 20 years.

Exports in 2022/23 are projected sharply lower, down 66% from the previous marketing year as a result of lower supplies and higher prices. Over the medium term, sorghum and corn prices converge and trend downward.




Sorghum area in 2023 is projected to fall slightly to 6.2 million acres as expected returns are projected to be lower than they were in 2022.

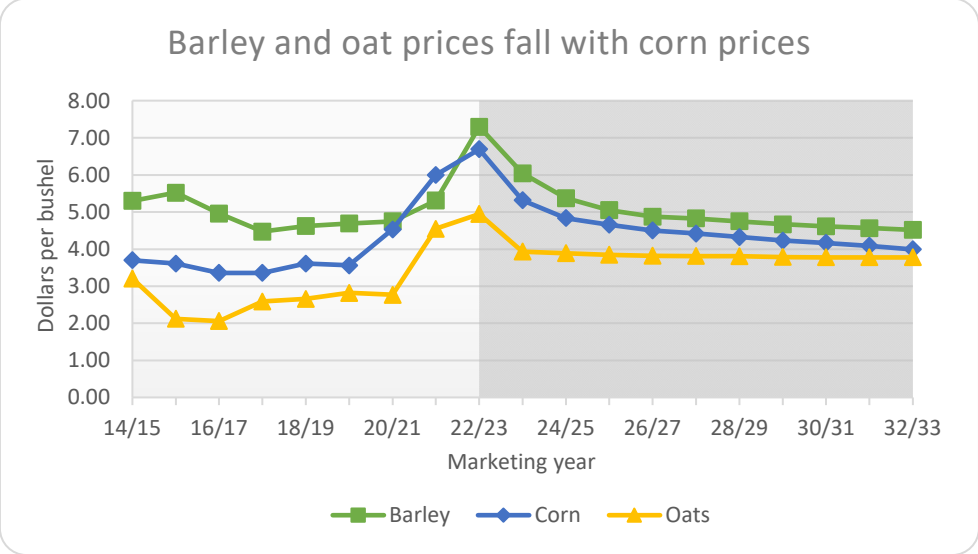
This slight decline in area and an assumed return to trend-level yield leads production to rapidly recover. As supplies increase and prices fall, exports increase to over 200 million bushels in 2023/24. Longer term, exports are projected to average 250 million bu./year. Exports are a major source of sorghum demand and Chinese trade policy is likely to influence future area.

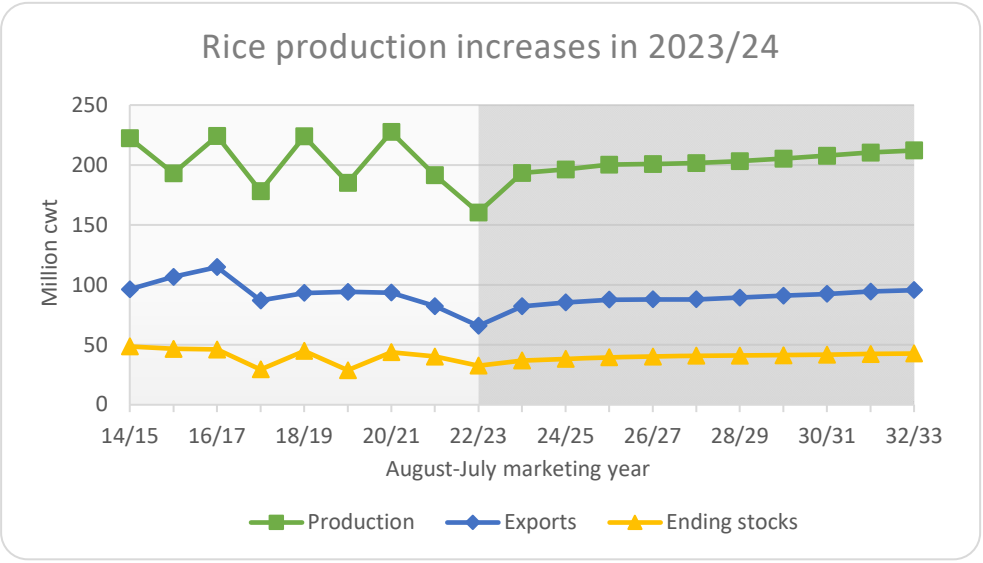



## Barley and oats

Most U.S. barley is used for malting and thus can sell at a significant premium to feed grains. Domestic demand is projected to be relatively steady with yield gains offsetting declines in area over the projection period. Stocks build from 2021/22 lows as prices decline.

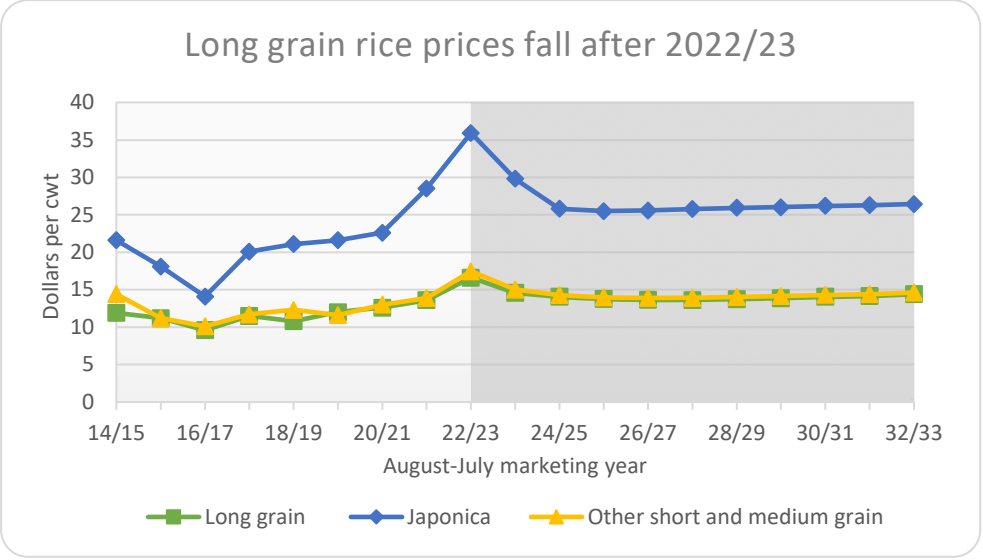
Oat prices are projected to fall initially alongside other feed grains before remaining steady at under $4/bu. Increasing production, from both higher area and yields, combined with mostly steady domestic demand lead to steadily declining imports over the projection period.



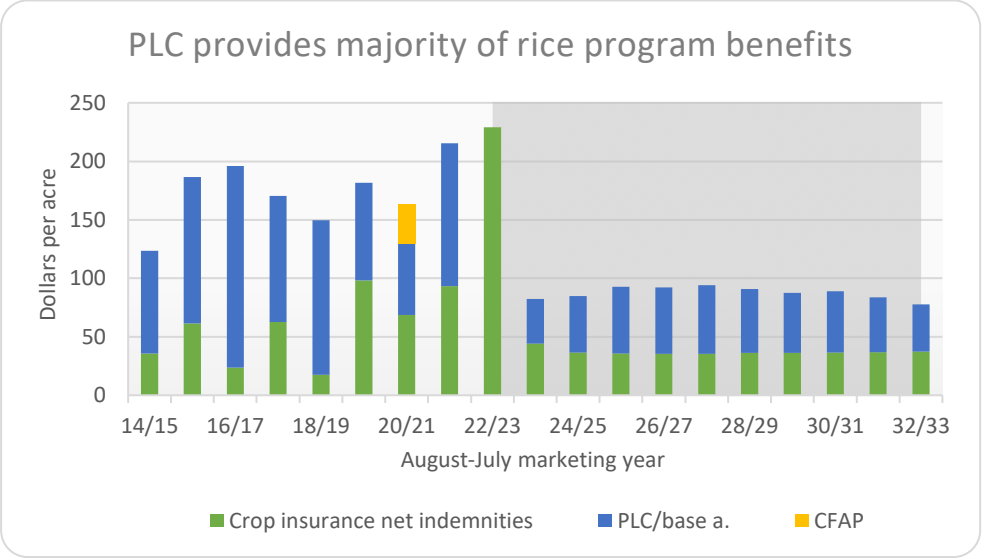



## Rice

U.S. rice production for the 2023/24 marketing year is projected to increase with area and yields returning near the 2021/22 levels. Area and production declined in 2022, due in part to higher input costs, strong competition from other crops and drought in major rice-growing states. Exports also recover in 2023/24 and then increase slightly. The water situation in California will result in more variability in rice production than these average projections indicate.




Lower production and lower stocks drove prices up in 2022/23, especially for Japonica rice, but also for both long grain and other medium and short grain. A recovery in production in 2023/24 reduces prices and increases stocks. Combined rice exports rebound as prices fall the next few years with rising export demand supporting prices toward the end of the baseline. U.S. rice prices remain above international indicator prices but the gap narrows over the next few years.




Crop insurance net indemnities hit a new record in 2022/23 at $229/acre as drought conditions negatively affected both planted area and yields. Over half of the rice indemnities went to California with other states receiving much less. Crop insurance net indemnities draw closer to a more historical average of $37/acre after 2023/24. PLC payments make up the majority of the remainder of support to rice producers. Projected PLC payments are at least 2.5 times larger than ARC payments throughout the baseline period, leading to over 97% participation in PLC.

# Corn supply and use

| September-August year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 88.6 | 92.2 | 92.9 | 92.5 | 92.1 | 90.8 | 90.0 | 89.4 | 88.8 | 88.3 | 87.9 |
| Harvested area | 79.2 | 84.3 | 84.8 | 84.5 | 84.2 | 82.9 | 82.2 | 81.7 | 81.1 | 80.6 | 80.2 |
| | | | | | (Bushels per harvested acre) | | | | | | |
| **Yield** | 173.3 | 181.0 | 183.0 | 185.1 | 187.4 | 189.5 | 191.7 | 193.7 | 195.8 | 197.6 | 199.2 |
| | | | | | (Million bushels) | | | | | | |
| **Supply** | 15,157 | 16,536 | 17,321 | 17,787 | 18,077 | 18,159 | 18,257 | 18,402 | 18,538 | 18,678 | 18,818 |
| Beginning stocks | 1,377 | 1,243 | 1,766 | 2,120 | 2,270 | 2,403 | 2,466 | 2,546 | 2,626 | 2,710 | 2,800 |
| Production | 13,730 | 15,259 | 15,521 | 15,633 | 15,774 | 15,722 | 15,757 | 15,822 | 15,878 | 15,934 | 15,984 |
| Imports | 50 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 |
| **Domestic use** | 11,984 | 12,421 | 12,613 | 12,696 | 12,769 | 12,786 | 12,824 | 12,882 | 12,926 | 12,963 | 12,995 |
| Feed and residual | 5,270 | 5,572 | 5,688 | 5,738 | 5,796 | 5,820 | 5,853 | 5,891 | 5,924 | 5,962 | 5,997 |
| Ethanol and coproducts | 5,281 | 5,384 | 5,435 | 5,461 | 5,460 | 5,444 | 5,435 | 5,440 | 5,440 | 5,430 | 5,417 |
| HFCS | 410 | 401 | 404 | 395 | 393 | 389 | 387 | 387 | 384 | 379 | 375 |
| Seed | 31 | 31 | 31 | 32 | 31 | 31 | 31 | 31 | 32 | 32 | 32 |
| Food and other | 992 | 1,033 | 1,055 | 1,071 | 1,087 | 1,102 | 1,117 | 1,132 | 1,146 | 1,160 | 1,174 |
| **Exports** | 1,930 | 2,349 | 2,588 | 2,821 | 2,905 | 2,907 | 2,887 | 2,894 | 2,902 | 2,915 | 2,921 |
| **Total use** | 13,913 | 14,770 | 15,201 | 15,517 | 15,674 | 15,693 | 15,711 | 15,776 | 15,828 | 15,878 | 15,916 |
| **Ending stocks** | 1,243 | 1,766 | 2,120 | 2,270 | 2,403 | 2,466 | 2,546 | 2,626 | 2,710 | 2,800 | 2,902 |
| Under loan | 27 | 63 | 82 | 89 | 96 | 99 | 104 | 108 | 112 | 116 | 121 |
| Other stocks | 1,217 | 1,703 | 2,038 | 2,180 | 2,308 | 2,367 | 2,443 | 2,519 | 2,599 | 2,684 | 2,781 |
| **Prices, program provisions** | | | | | (Dollars per bushel) | | | | | | |
| Farm price | 6.69 | 5.32 | 4.84 | 4.66 | 4.50 | 4.42 | 4.33 | 4.23 | 4.17 | 4.09 | 3.99 |
| Loan rate | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 | 2.20 |
| Effective reference price | 3.70 | 3.70 | 4.01 | 4.24 | 4.25 | 4.24 | 4.14 | 3.98 | 3.90 | 3.85 | 3.81 |
| | | | | | (Million acres) | | | | | | |
| Base area | 92.7 | 92.4 | 92.3 | 92.3 | 92.3 | 92.3 | 92.3 | 92.3 | 92.3 | 92.3 | 92.3 |
| | | | | | (Bushels per acre) | | | | | | |
| PLC program yield | 132.2 | 131.7 | 126.3 | 124.9 | 123.8 | 123.6 | 129.5 | 128.6 | 128.3 | 128.1 | 127.9 |
| | | | | | (Percent of base acres) | | | | | | |
| PLC participation rate | 40.3 | 37.5 | 19.7 | 19.8 | 15.5 | 14.9 | 28.7 | 28.6 | 28.1 | 28.1 | 28.5 |
| ARC participation rate | 59.7 | 62.5 | 80.3 | 80.2 | 84.5 | 85.1 | 71.3 | 71.4 | 71.9 | 71.9 | 71.5 |
| **Returns and payments** | | | | | (Dollars) | | | | | | |
| Gross market revenue/a. | 1,159.86 | 958.63 | 881.04 | 858.50 | 841.38 | 833.95 | 826.41 | 816.74 | 813.17 | 804.58 | 792.74 |
| Variable expenses/a. | 474.61 | 474.92 | 428.27 | 399.76 | 395.35 | 406.70 | 415.09 | 418.16 | 419.60 | 422.57 | 427.69 |
| Market net return/a. | 685.26 | 483.71 | 452.76 | 458.73 | 446.03 | 427.24 | 411.31 | 398.58 | 393.56 | 382.02 | 365.05 |
| Marketing loan benefits/a.* | 0.00 | 0.00 | 0.03 | 0.08 | 0.10 | 0.05 | 0.15 | 0.10 | 0.26 | 0.33 | 0.30 |
| Payments to participants | | | | | | | | | | | |
| PLC/base a.* | 0.00 | 0.28 | 9.03 | 19.36 | 26.52 | 31.67 | 29.03 | 26.46 | 23.93 | 25.16 | 29.35 |
| ARC/base a.* | 0.01 | 0.51 | 12.56 | 25.99 | 37.64 | 45.69 | 35.30 | 24.39 | 22.01 | 21.71 | 20.61 |
| Insurance net indemnities/a.* | 26.72 | 39.20 | 31.42 | 31.37 | 29.87 | 29.22 | 30.28 | 29.38 | 28.61 | 29.10 | 29.23 |

* Marketing loan benefits and insurance net indemnities are averaged across all acres. ARC and PLC payments are per participating acre.
All projections are averages across 500 stochastic outcomes.

# Corn product supply and use

| Marketing year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **High-fructose corn syrup** | | | | (Thousand tons, October-September year) | | | | | | | |
| Production | 7,470 | 7,328 | 7,394 | 7,236 | 7,229 | 7,158 | 7,139 | 7,156 | 7,119 | 7,034 | 6,971 |
| Domestic use | 6,436 | 6,259 | 6,312 | 6,071 | 6,051 | 5,937 | 5,890 | 5,898 | 5,821 | 5,739 | 5,679 |
| Net exports | 1,033 | 1,069 | 1,081 | 1,165 | 1,179 | 1,221 | 1,249 | 1,259 | 1,298 | 1,295 | 1,292 |
| | | | | (Cents per pound, October-September year) | | | | | | | |
| Price, 42% Midwest | 36.16 | 34.81 | 35.14 | 33.83 | 34.85 | 34.45 | 34.64 | 34.87 | 34.60 | 34.23 | 34.29 |
| **Distillers, brewers grains** | | | | (Thousand tons, September-August year) | | | | | | | |
| Production (dry equivalent basis) | 40,274 | 40,509 | 40,617 | 40,672 | 40,596 | 40,476 | 40,447 | 40,535 | 40,586 | 40,558 | 40,496 |
| Domestic use | 27,841 | 27,811 | 27,829 | 27,821 | 27,711 | 27,554 | 27,489 | 27,536 | 27,549 | 27,484 | 27,380 |
| Net exports | 12,432 | 12,698 | 12,787 | 12,850 | 12,885 | 12,922 | 12,958 | 12,999 | 13,037 | 13,074 | 13,116 |
| | | | | (Dollars per ton, September-August year) | | | | | | | |
| Price, IL points | 247.28 | 199.11 | 183.66 | 176.77 | 172.64 | 170.15 | 167.79 | 164.78 | 162.91 | 160.54 | 157.46 |
| **Corn gluten feed** | | | | (Thousand tons, September-August year) | | | | | | | |
| Production | 8,388 | 8,883 | 9,202 | 9,309 | 9,407 | 9,445 | 9,485 | 9,528 | 9,551 | 9,544 | 9,549 |
| Domestic use | 7,766 | 8,048 | 8,336 | 8,441 | 8,542 | 8,587 | 8,636 | 8,687 | 8,721 | 8,725 | 8,741 |
| Net exports | 622 | 835 | 867 | 868 | 866 | 857 | 849 | 841 | 830 | 818 | 808 |
| | | | | (Dollars per ton, September-August year) | | | | | | | |
| Price, 21%, IL points | 200.03 | 161.36 | 150.44 | 145.80 | 142.56 | 140.68 | 138.84 | 136.67 | 135.30 | 133.65 | 131.57 |
| **Corn gluten meal** | | | | (Thousand tons, September-August year) | | | | | | | |
| Production | 2,207 | 2,338 | 2,422 | 2,450 | 2,476 | 2,485 | 2,496 | 2,507 | 2,513 | 2,512 | 2,513 |
| Domestic use | 1,448 | 1,528 | 1,595 | 1,609 | 1,624 | 1,623 | 1,623 | 1,624 | 1,620 | 1,609 | 1,600 |
| Net exports | 760 | 809 | 826 | 841 | 852 | 863 | 873 | 883 | 893 | 903 | 913 |
| | | | | (Dollars per ton, September-August year) | | | | | | | |
| Price, 60%, IL points | 592.39 | 496.72 | 472.64 | 453.79 | 447.08 | 441.15 | 437.97 | 432.26 | 428.12 | 423.42 | 416.43 |
| **Corn oil** | | | | (Million pounds, October-September year) | | | | | | | |
| Production | 6,200 | 6,544 | 6,854 | 7,094 | 7,246 | 7,355 | 7,436 | 7,529 | 7,586 | 7,630 | 7,621 |
| Domestic use | 6,144 | 6,497 | 6,794 | 7,021 | 7,202 | 7,320 | 7,411 | 7,507 | 7,579 | 7,635 | 7,648 |
| Biodiesel | 3,056 | 3,892 | 4,584 | 4,670 | 4,956 | 5,218 | 5,342 | 5,484 | 5,603 | 5,721 | 5,812 |
| Food/other | 3,087 | 2,605 | 2,210 | 2,351 | 2,246 | 2,102 | 2,069 | 2,023 | 1,976 | 1,914 | 1,836 |
| Net exports | 73 | 31 | 43 | 59 | 39 | 31 | 22 | 18 | 6 | -5 | -23 |
| Ending stocks | 76 | 91 | 108 | 122 | 126 | 130 | 132 | 136 | 137 | 137 | 133 |
| | | | | (Cents per pound, October-September year) | | | | | | | |
| Chicago price | 64.38 | 66.64 | 66.91 | 66.70 | 68.60 | 69.91 | 71.39 | 72.56 | 74.30 | 76.09 | 78.39 |

All projections are averages across 500 stochastic outcomes.

# Wheat supply and use

| June-May year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 45.7 | 49.4 | 47.8 | 47.0 | 46.7 | 46.7 | 46.6 | 46.4 | 46.3 | 46.2 | 46.2 |
| Harvested area | 35.5 | 38.9 | 38.7 | 38.1 | 37.7 | 37.7 | 37.5 | 37.3 | 37.1 | 37.0 | 36.9 |
| | | | | | (Bushels per harvested acre) | | | | | | |
| **Yield** | 46.5 | 51.2 | 51.2 | 51.7 | 52.1 | 52.6 | 53.1 | 53.6 | 54.0 | 54.5 | 54.8 |
| | | | | | (Million bushels) | | | | | | |
| **Supply** | 2,466 | 2,675 | 2,777 | 2,833 | 2,866 | 2,912 | 2,945 | 2,969 | 2,995 | 3,023 | 3,045 |
| Beginning stocks | 698 | 572 | 691 | 765 | 799 | 830 | 852 | 873 | 890 | 908 | 922 |
| Production | 1,650 | 1,993 | 1,982 | 1,966 | 1,967 | 1,982 | 1,993 | 1,997 | 2,005 | 2,016 | 2,023 |
| Imports | 117 | 110 | 104 | 102 | 100 | 100 | 100 | 99 | 99 | 99 | 99 |
| **Domestic use** | 1,118 | 1,132 | 1,132 | 1,134 | 1,143 | 1,145 | 1,148 | 1,151 | 1,154 | 1,156 | 1,158 |
| Feed and residual | 78 | 93 | 86 | 84 | 87 | 85 | 85 | 85 | 85 | 83 | 82 |
| Seed | 65 | 63 | 62 | 61 | 61 | 61 | 61 | 60 | 60 | 60 | 60 |
| Food and other | 975 | 977 | 984 | 989 | 995 | 999 | 1,002 | 1,006 | 1,009 | 1,013 | 1,016 |
| **Exports** | 775 | 852 | 880 | 901 | 893 | 915 | 923 | 928 | 933 | 945 | 946 |
| **Total use** | 1,893 | 1,984 | 2,012 | 2,035 | 2,036 | 2,060 | 2,071 | 2,079 | 2,087 | 2,101 | 2,104 |
| **Ending stocks** | 572 | 691 | 765 | 799 | 830 | 852 | 873 | 890 | 908 | 922 | 941 |
| Under loan | 2 | 6 | 9 | 10 | 11 | 12 | 13 | 13 | 14 | 14 | 15 |
| Other stocks | 571 | 685 | 756 | 789 | 819 | 840 | 860 | 877 | 894 | 908 | 926 |
| **Prices, program provisions** | | | | | (Dollars per bushel) | | | | | | |
| Farm price | 9.08 | 7.39 | 6.60 | 6.29 | 5.99 | 5.90 | 5.77 | 5.66 | 5.59 | 5.52 | 5.43 |
| Loan rate | 3.38 | 3.38 | 3.38 | 3.38 | 3.38 | 3.38 | 3.38 | 3.38 | 3.38 | 3.38 | 3.38 |
| Effective reference price | 5.50 | 5.50 | 5.50 | 5.72 | 6.03 | 6.11 | 5.90 | 5.70 | 5.61 | 5.58 | 5.56 |
| | | | | | (Million acres) | | | | | | |
| Base area | 61.1 | 60.5 | 60.4 | 60.4 | 60.3 | 60.3 | 60.3 | 60.3 | 60.3 | 60.3 | 60.3 |
| | | | | | (Bushels per acre) | | | | | | |
| PLC program yield | 39.2 | 38.7 | 38.6 | 38.1 | 39.1 | 39.3 | 38.8 | 39.0 | 39.4 | 39.6 | 39.8 |
| | | | | | (Percent of base acres) | | | | | | |
| PLC participation rate | 53.4 | 47.1 | 46.0 | 43.0 | 58.5 | 63.7 | 56.9 | 57.9 | 63.3 | 67.7 | 70.5 |
| ARC participation rate | 46.6 | 52.9 | 54.0 | 57.0 | 41.5 | 36.3 | 43.1 | 42.1 | 36.7 | 32.3 | 29.5 |
| **Returns and payments** | | | | | (Dollars) | | | | | | |
| Gross market revenue/a. | 422.05 | 377.84 | 337.56 | 324.63 | 312.10 | 310.39 | 306.30 | 302.98 | 301.62 | 300.54 | 297.31 |
| Variable expenses/a. | 187.98 | 188.42 | 169.55 | 161.67 | 159.41 | 163.05 | 167.62 | 169.89 | 171.58 | 173.68 | 176.62 |
| Market net return/a. | 234.07 | 189.42 | 168.01 | 162.96 | 152.70 | 147.34 | 138.68 | 133.09 | 130.03 | 126.86 | 120.69 |
| Marketing loan benefits/a.* | 0.00 | 0.01 | 0.34 | 0.36 | 0.72 | 1.09 | 1.16 | 1.49 | 1.75 | 1.68 | 2.16 |
| Payments to participants | | | | | | | | | | | |
| PLC/base a.* | 0.00 | 0.22 | 3.90 | 8.04 | 16.90 | 20.47 | 18.82 | 15.65 | 16.46 | 16.10 | 17.03 |
| ARC/base a.* | 0.17 | 0.61 | 3.94 | 8.86 | 12.71 | 14.05 | 13.25 | 11.08 | 9.76 | 9.31 | 9.24 |
| Insurance net indemnities/a.* | 26.73 | 24.78 | 18.79 | 17.12 | 16.49 | 16.58 | 16.66 | 16.46 | 15.93 | 16.26 | 16.32 |

* Marketing loan benefits and insurance net indemnities are averaged across all acres. ARC and PLC payments are per participating acre.
All projections are averages across 500 stochastic outcomes.

# Sorghum supply and use

| September-August year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 6.33 | 6.18 | 6.01 | 6.08 | 6.12 | 6.15 | 6.15 | 6.15 | 6.15 | 6.15 | 6.16 |
| Harvested area | 4.57 | 5.44 | 5.30 | 5.36 | 5.39 | 5.43 | 5.43 | 5.44 | 5.43 | 5.43 | 5.46 |
| | | | | | (Bushels per harvested acre) | | | | | | |
| **Yield** | 41.1 | 72.0 | 72.2 | 72.5 | 73.0 | 73.3 | 73.6 | 73.9 | 74.3 | 74.2 | 74.2 |
| **Supply and use** | | | | | (Million bushels) | | | | | | |
| Production | 188 | 392 | 384 | 390 | 394 | 398 | 401 | 402 | 404 | 404 | 406 |
| Imports | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Domestic use | 107 | 166 | 147 | 143 | 139 | 143 | 146 | 149 | 151 | 153 | 155 |
| Exports | 103 | 209 | 234 | 246 | 253 | 255 | 253 | 252 | 251 | 250 | 249 |
| Ending stocks | 25 | 42 | 45 | 46 | 48 | 48 | 50 | 51 | 53 | 54 | 56 |
| **Prices, returns and payments** | | | | | (Dollars) | | | | | | |
| Farm price/bu. | 6.84 | 4.91 | 4.64 | 4.56 | 4.49 | 4.41 | 4.33 | 4.25 | 4.20 | 4.12 | 4.04 |
| Effective reference price | 3.95 | 3.95 | 4.06 | 4.42 | 4.48 | 4.42 | 4.22 | 4.06 | 4.03 | 4.01 | 4.00 |
| Market net return/a. | 89.32 | 157.49 | 157.53 | 164.50 | 161.46 | 152.17 | 143.99 | 136.50 | 133.24 | 124.75 | 115.20 |
| Marketing loan benefits/a.* | 0.00 | 0.00 | 0.16 | 0.10 | 0.01 | 0.06 | 0.08 | 0.01 | 0.03 | 1.04 | 1.50 |
| Payments to participants | | | | | | | | | | | |
| PLC/base a.* | 0.00 | 2.47 | 8.15 | 16.44 | 20.02 | 19.98 | 17.08 | 13.38 | 14.79 | 15.78 | 16.99 |
| ARC/base a.* | 1.24 | 1.56 | 8.90 | 12.22 | 13.51 | 13.11 | 9.72 | 8.76 | 8.62 | 9.02 | 8.89 |
| Insurance net indemnities/a.* | 85.55 | 27.72 | 21.04 | 18.81 | 18.24 | 18.72 | 19.91 | 18.62 | 18.22 | 19.88 | 20.07 |

* Marketing loan benefits and insurance net indemnities are averaged across all acres. ARC and PLC payments are per participating acre.
All projections are averages across 500 stochastic outcomes.

# Barley supply and use

| June-May year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 2.95 | 2.83 | 3.04 | 2.85 | 2.77 | 2.71 | 2.67 | 2.65 | 2.61 | 2.58 | 2.55 |
| Harvested area | 2.43 | 2.31 | 2.47 | 2.31 | 2.24 | 2.19 | 2.17 | 2.14 | 2.12 | 2.09 | 2.07 |
| | | | | | (Bushels per harvested acre) | | | | | | |
| **Yield** | 71.7 | 77.3 | 77.9 | 78.9 | 80.0 | 81.1 | 82.3 | 83.2 | 84.2 | 84.9 | 85.8 |
| **Supply and use** | | | | | (Million bushels) | | | | | | |
| Production | 174 | 178 | 192 | 183 | 179 | 178 | 179 | 179 | 178 | 177 | 177 |
| Imports | 15 | 13 | 12 | 10 | 11 | 11 | 12 | 12 | 13 | 13 | 14 |
| Domestic use | 166 | 171 | 182 | 181 | 182 | 182 | 183 | 183 | 184 | 183 | 184 |
| Exports | 5 | 6 | 6 | 7 | 7 | 7 | 6 | 6 | 6 | 6 | 6 |
| Ending stocks | 60 | 74 | 90 | 95 | 97 | 98 | 99 | 100 | 101 | 102 | 103 |
| **Prices, returns and payments** | | | | | (Dollars) | | | | | | |
| All barley farm price/bu. | 7.30 | 6.04 | 5.37 | 5.05 | 4.88 | 4.83 | 4.75 | 4.67 | 4.61 | 4.57 | 4.52 |
| Feed barley price/bu. | 5.94 | 4.79 | 4.28 | 4.07 | 3.92 | 3.86 | 3.79 | 3.71 | 3.66 | 3.60 | 3.54 |
| Effective reference price | 4.95 | 4.95 | 4.95 | 4.95 | 5.00 | 5.04 | 5.04 | 4.97 | 4.95 | 4.95 | 4.95 |
| Market net return/a. | 316.97 | 259.92 | 232.75 | 223.53 | 217.43 | 214.36 | 210.35 | 206.79 | 205.03 | 202.26 | 199.58 |
| Marketing loan benefits/a.* | 0.00 | 0.00 | 0.17 | 0.29 | 0.38 | 0.41 | 0.62 | 0.73 | 0.98 | 0.15 | 0.09 |
| Payments to participants | | | | | | | | | | | |
| PLC/base a.* | 0.00 | 1.23 | 7.94 | 13.76 | 17.26 | 21.45 | 23.66 | 21.84 | 23.19 | 24.41 | 26.03 |
| ARC/base a.* | 0.00 | 0.56 | 3.00 | 7.72 | 9.50 | 10.93 | 13.33 | 10.53 | 9.52 | 9.12 | 9.65 |
| Insurance net indemnities/a.* | 18.06 | 15.05 | 13.08 | 12.28 | 11.73 | 12.07 | 12.13 | 12.18 | 11.90 | 12.23 | 12.16 |

* Marketing loan benefits and insurance net indemnities are averaged across all acres. ARC and PLC payments are per participating acre.
All projections are averages across 500 stochastic outcomes.

# Oats supply and use

| June-May year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 2.58 | 2.51 | 2.65 | 2.73 | 2.81 | 2.87 | 2.91 | 2.95 | 2.98 | 3.01 | 3.04 |
| Harvested area | 0.89 | 0.79 | 0.84 | 0.87 | 0.89 | 0.91 | 0.93 | 0.94 | 0.95 | 0.96 | 0.97 |
| | | | | | (Bushels per harvested acre) | | | | | | |
| **Yield** | 64.8 | 67.3 | 67.7 | 68.1 | 68.7 | 69.3 | 70.0 | 70.5 | 71.0 | 71.5 | 71.9 |
| **Supply and use** | | | | | (Million bushels) | | | | | | |
| Production | 58 | 54 | 57 | 59 | 62 | 64 | 65 | 67 | 68 | 69 | 70 |
| Imports | 87 | 88 | 86 | 84 | 83 | 82 | 81 | 79 | 78 | 77 | 77 |
| Domestic use | 144 | 139 | 139 | 140 | 141 | 142 | 142 | 143 | 143 | 143 | 143 |
| Exports | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Ending stocks | 31 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 39 |
| **Prices, returns and payments** | | | | | (Dollars) | | | | | | |
| Farm price/bu. | 4.95 | 3.93 | 3.89 | 3.85 | 3.82 | 3.81 | 3.81 | 3.79 | 3.78 | 3.78 | 3.78 |
| Effective reference price/bu. | 2.40 | 2.40 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 | 2.76 |
| Market net return/a. | 138.21 | 82.60 | 98.22 | 104.23 | 106.09 | 103.09 | 101.58 | 100.23 | 100.52 | 100.42 | 99.20 |
| Marketing loan benefits/a.* | 0.00 | 0.04 | 0.06 | 0.07 | 0.08 | 0.08 | 0.09 | 0.09 | 0.10 | 0.00 | 0.00 |
| Payments to participants | | | | | | | | | | | |
| PLC/base a.* | 0.00 | 0.00 | 0.21 | 0.17 | 0.12 | 0.14 | 0.24 | 0.26 | 0.26 | 0.31 | 0.21 |
| ARC/base a.* | 0.00 | 0.18 | 0.77 | 1.54 | 2.60 | 2.79 | 2.79 | 2.01 | 2.12 | 2.02 | 2.12 |
| Insurance net indemnities/a.* | 1.66 | 2.84 | 2.51 | 2.57 | 2.52 | 2.48 | 2.47 | 2.58 | 2.46 | 2.53 | 2.50 |

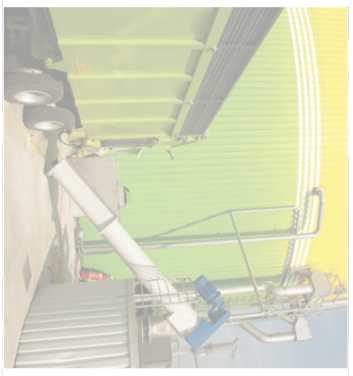
* Marketing loan benefits and insurance net indemnities are averaged across all acres. ARC and PLC payments are per participating acre.
All projections are averages across 500 stochastic outcomes.

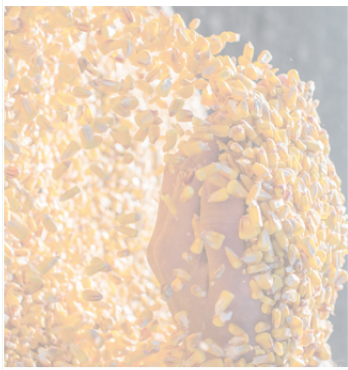
# Rice supply and use

| August-July year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 2.22 | 2.55 | 2.55 | 2.58 | 2.57 | 2.56 | 2.56 | 2.57 | 2.59 | 2.61 | 2.61 |
| Harvested area | 2.17 | 2.51 | 2.51 | 2.54 | 2.53 | 2.52 | 2.52 | 2.53 | 2.55 | 2.56 | 2.57 |
| **Yield** | 7,383 | 7,716 | 7,822 | 7,884 | 7,945 | 8,006 | 8,055 | 8,113 | 8,164 | 8,209 | 8,254 |
| **Supply and use** | | | | | (Million hundredweight) | | | | | | |
| Production | 160.4 | 193.4 | 196.2 | 200.2 | 200.8 | 201.6 | 203.2 | 205.4 | 207.8 | 210.4 | 212.1 |
| Imports | 45.0 | 41.5 | 41.4 | 41.4 | 41.6 | 41.9 | 42.2 | 42.6 | 43.0 | 43.4 | 43.9 |
| Domestic use | 147.1 | 148.6 | 151.1 | 152.7 | 153.8 | 154.9 | 155.8 | 156.8 | 157.9 | 158.8 | 160.0 |
| Exports | 65.9 | 82.1 | 85.2 | 87.7 | 87.9 | 88.0 | 89.4 | 90.9 | 92.4 | 94.4 | 95.7 |
| Ending stocks | 32.6 | 36.8 | 38.2 | 39.5 | 40.1 | 40.8 | 40.9 | 41.2 | 41.7 | 42.3 | 42.6 |
| **Program provisions** | | | | | (Dollars per hundredweight) | | | | | | |
| Loan rate | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 |
| Effective reference price | | | | | | | | | | | |
| Long grain | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.01 | 14.00 | 14.00 | 14.00 | 14.00 |
| Japonica | 17.30 | 17.30 | 17.30 | 17.30 | 17.30 | 17.30 | 17.30 | 17.30 | 17.30 | 17.30 | 17.30 |
| Other medium/short | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 | 14.00 |
| Base area | | | | | (Million acres) | | | | | | |
| Long grain | 3.76 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 | 3.72 |
| Medium/short | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 | 0.44 |
| PLC yield | | | | | (Pounds per acre) | | | | | | |
| Long grain | 5,818 | 5,672 | 5,780 | 5,821 | 5,867 | 5,881 | 5,861 | 5,855 | 5,849 | 5,840 | 5,831 |
| Medium/short | 6,841 | 6,909 | 6,870 | 6,681 | 6,509 | 6,515 | 6,656 | 6,742 | 6,750 | 6,754 | 6,748 |
| PLC participation rate | | | | | (Percent of base acres) | | | | | | |
| Long grain | 99.3 | 98.4 | 98.8 | 98.7 | 98.6 | 98.5 | 98.3 | 98.4 | 98.4 | 98.5 | 98.5 |
| Medium/short | 81.7 | 92.0 | 86.1 | 67.1 | 54.7 | 54.2 | 64.5 | 71.9 | 72.6 | 72.9 | 72.4 |
| ARC participation rate | | | | | | | | | | | |
| Long grain | 0.7 | 1.6 | 1.2 | 1.3 | 1.4 | 1.5 | 1.7 | 1.6 | 1.6 | 1.5 | 1.5 |
| Medium/short | 18.3 | 8.0 | 13.9 | 32.9 | 45.3 | 45.8 | 35.5 | 28.1 | 27.4 | 27.1 | 27.6 |
| **Prices, returns and payments** | | | | | (Dollars) | | | | | | |
| Farm price/cwt | 19.15 | 16.51 | 16.15 | 15.84 | 15.75 | 15.74 | 15.85 | 15.96 | 16.11 | 16.17 | 16.40 |
| Long grain | 16.61 | 14.59 | 14.07 | 13.76 | 13.66 | 13.62 | 13.73 | 13.89 | 14.07 | 14.16 | 14.41 |
| Japonica | 35.92 | 29.81 | 25.83 | 25.50 | 25.59 | 25.78 | 25.95 | 26.01 | 26.19 | 26.28 | 26.43 |
| Other medium/short | 17.46 | 15.04 | 14.28 | 13.99 | 13.91 | 13.91 | 14.02 | 14.14 | 14.32 | 14.40 | 14.63 |
| Gross market revenue/a. | 1,413.66 | 1,274.16 | 1,262.93 | 1,248.95 | 1,251.29 | 1,260.42 | 1,276.53 | 1,294.86 | 1,314.97 | 1,327.54 | 1,353.50 |
| Variable expenses/a. | 728.29 | 736.89 | 685.63 | 657.49 | 658.14 | 675.42 | 690.50 | 701.67 | 712.04 | 724.20 | 738.20 |
| Market net return/a. | 685.37 | 537.27 | 577.29 | 591.47 | 593.15 | 585.00 | 586.03 | 593.18 | 602.93 | 603.33 | 615.30 |
| Marketing loan benefits/a.* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Payments to participants | | | | | | | | | | | |
| PLC/base a.* | 0.00 | 38.09 | 48.43 | 56.85 | 56.74 | 58.62 | 54.72 | 51.38 | 52.26 | 46.73 | 40.54 |
| ARC/base a.* | 0.00 | 7.83 | 11.00 | 21.53 | 31.40 | 38.52 | 32.64 | 25.94 | 25.01 | 21.48 | 20.60 |
| Insurance net indemnities/a.* | 229.22 | 44.24 | 36.50 | 35.87 | 35.58 | 35.56 | 36.18 | 36.27 | 36.66 | 36.98 | 37.33 |

* Marketing loan benefits and insurance net indemnities are averaged across all acres. ARC and PLC payments are per participating acre.
All projections are averages across 500 stochastic outcomes.



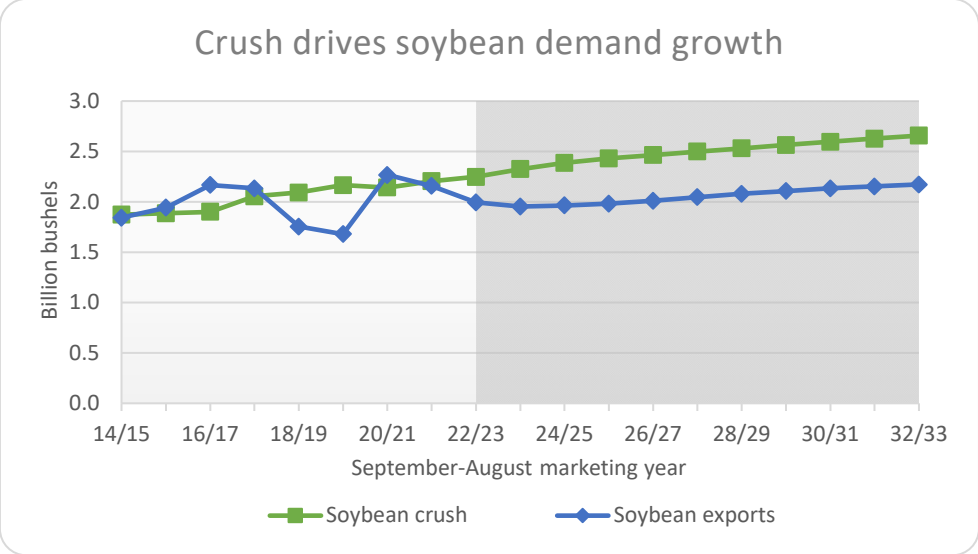


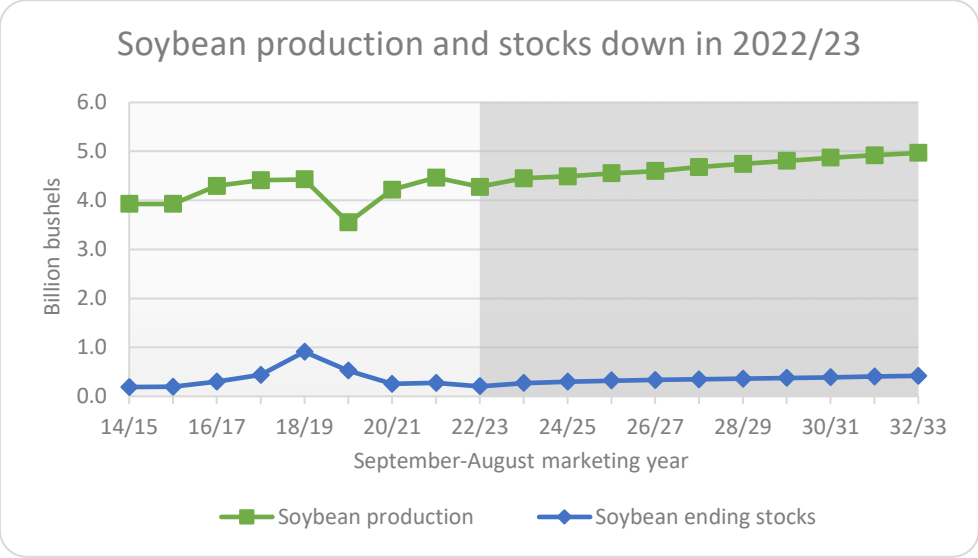
# Oilseeds

## Soybeans and products

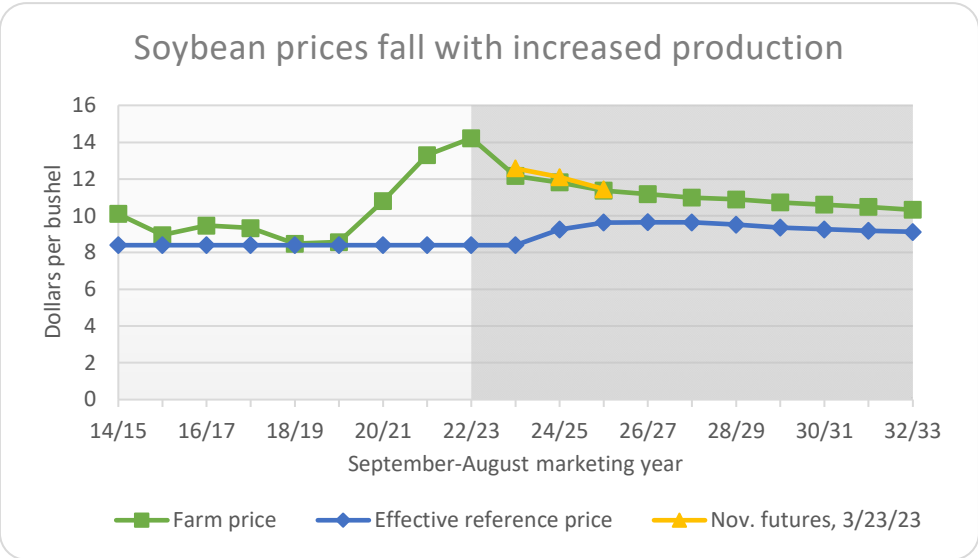
U.S. soybean crush capacity is increasing, contributing to an increase in domestic crush relative to soybean exports. After 2023/24, both crush and exports increase in response to growth in global demand and in domestic biofuel use of soybean oil. This growth in demand is one reason why soybean area is expanding at the expense of corn.

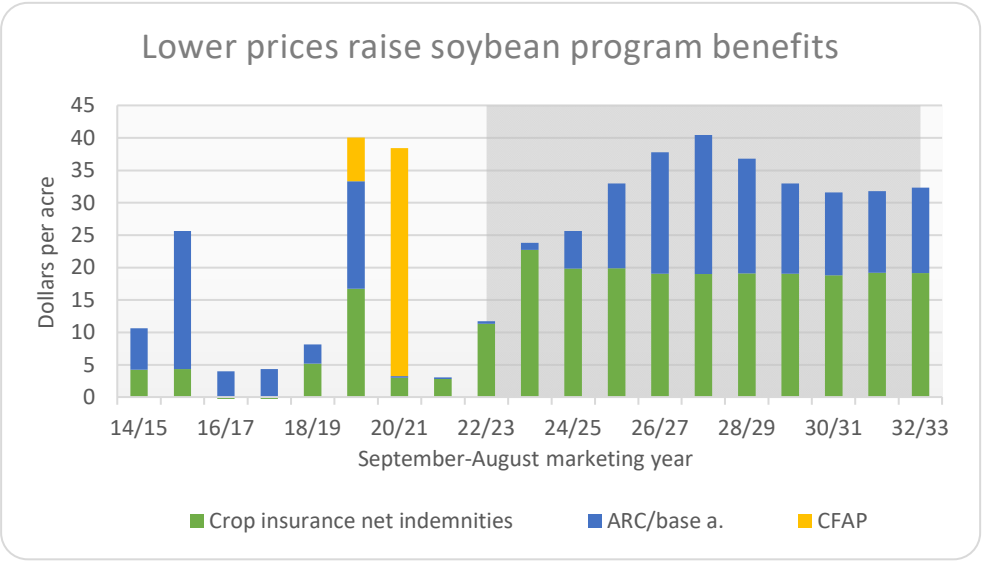



U.S. soybean production decreased in 2022 following a new record in 2021. The production decline was largely due to weaker yields from drought across the Plains and portions of the Midwest. At the same time, domestic crush remained steady, not entirely offset by a decline in exports, resulting in ending stocks hitting a 7-year low. Projected ending stocks improve modestly in 2023/24 as a return to trend yields improves domestic production.

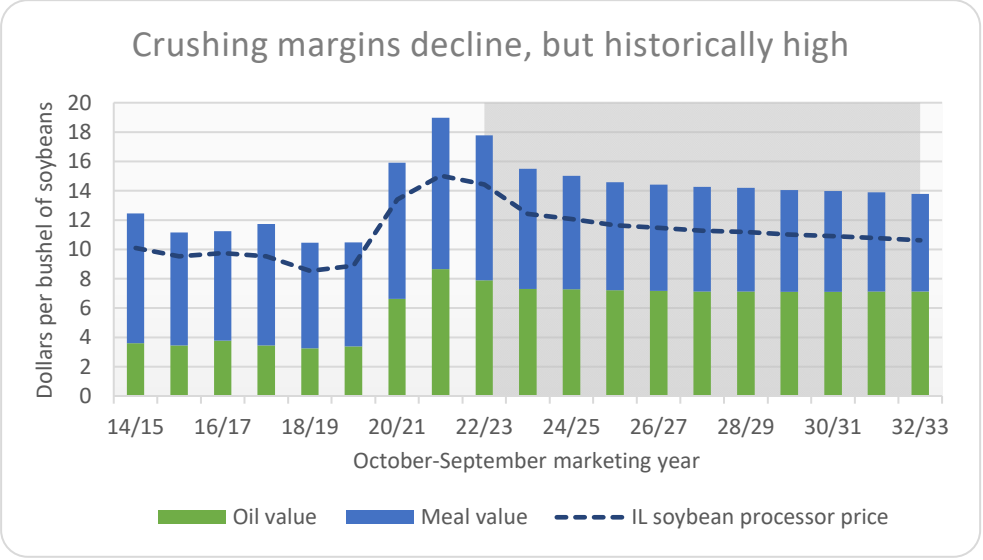



U.S. soybean prices exceed $14 in 2022/23 as a result of drought-weakened U.S. production. Increased production contributes to lower prices in 2023/24. The futures markets in March are consistent with these projections. Reduced Argentina production in 2023 would tend to increase prices, but other factors have countered this effect.

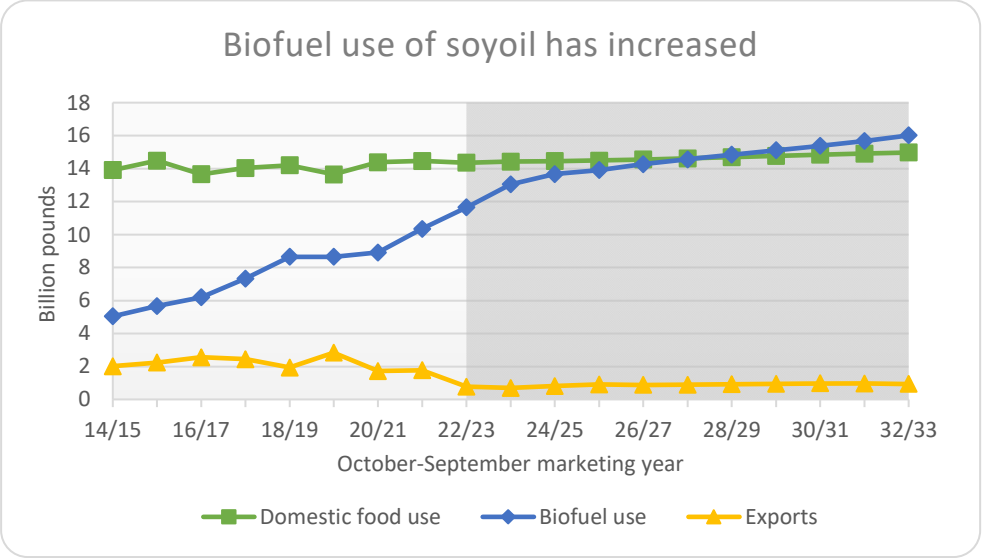





Soybean producers received smaller direct benefits from ARC, PLC and crop insurance in recent years than did producers of many other crops. In 2018/19 and 2019/20, however, they received large MFP payments (not shown in the chart), and coronavirus food assistance program (CFAP) payments exceeded $35/soybean acre in 2020/21. In the next couple projection years, both ARC and PLC payments are relatively modest. The projected crop insurance net indemnities assume a loss ratio of around 0.9, which is greater than it has been in most years.



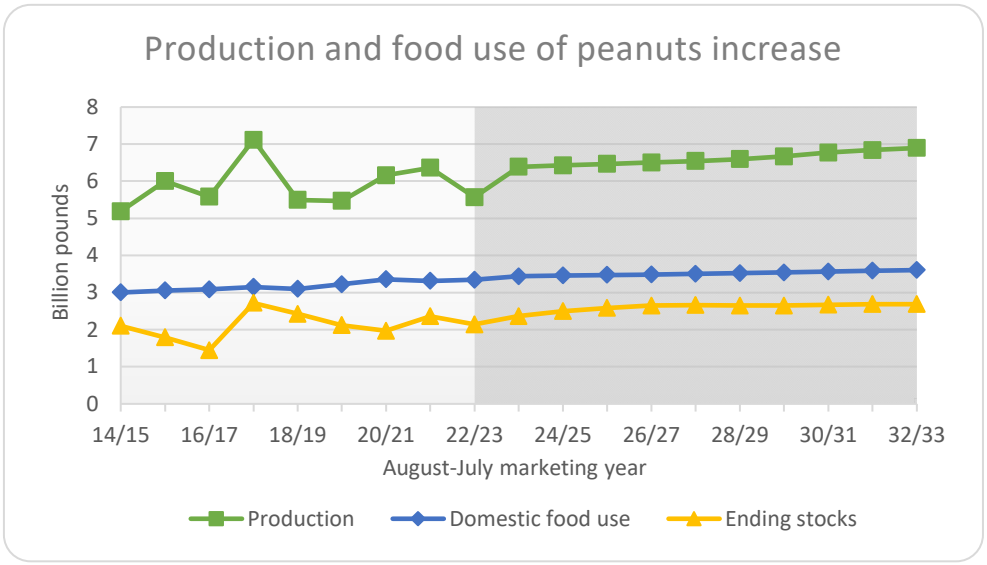

Processor prices for soybeans and soybean oil peaked in 2021/22, with the share of soybean oil value to crush values increasing to over 40%. This was a shift from about one-third of the crush value attributed to oil in the prior 5-year average. The increasing share of the value of soybean oil continues to climb in the projection period approaching 50% in the next few years. Rising demand for soybean oil heading to biofuel production is an important contributor to this shift in the value of soybean products in crush margins.




Between 2012/13 and 2020/21, biodiesel accounted for about 90% of the increase in U.S. soybean oil consumption. Further growth is projected, in large part due to increased renewable diesel production, whereas only minimal expansion from food and other domestic uses contribute to soybean oil consumption growth. U.S. soybean oil exports remain modest, as Argentina exports of soybean oil and Asian palm oil exports continue to dominate global vegetable oil trade.

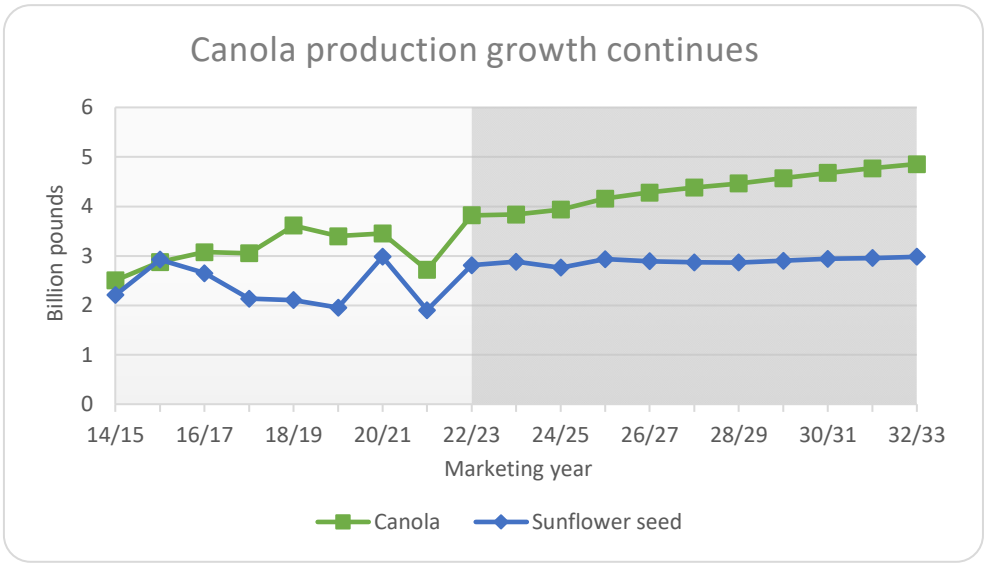
## Peanuts

Fewer planted acres combined with negative weather impacts on yields contributed in 2022/23 to the smallest U.S. production in three years. Despite less domestic production and an increase in food use of peanuts, U.S. peanut prices reached $544/ton, its highest in 10 years. Area and yields recover in 2023/24, increasing production enough to outpace the increase in consumption. Prices decline to average about $460/ton (23 cents/lb) through the baseline.

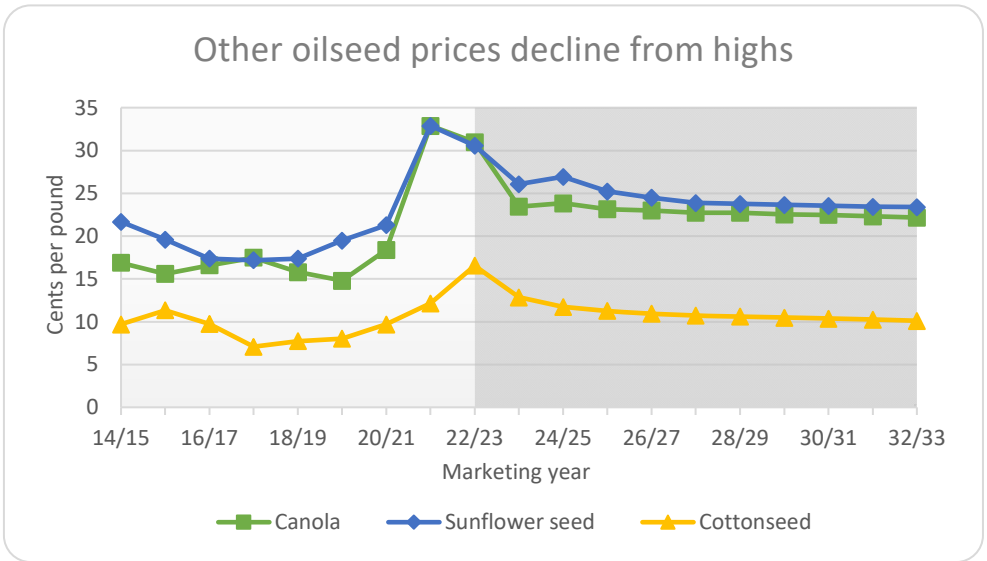



## Other oilseeds

U.S. production of canola experienced strong growth and now consistently exceeds production of sunflowers. After drought conditions in the Northern Plains led to weaker canola production in 2021/22, area and yields recovered. With an approved pathway, the addition of canola oil as a potential source for renewable diesel increases demand for canola and supports more U.S. canola area through the projection period.




The impacts of the 2021 drought stretched across the U.S. Northern Plains and the Canadian Prairies. The effect decreased U.S. sunflower seed and canola production as well as dramatically reducing Canada's canola production. Even though drought conditions improved in 2022/23 for the Northern Plains and Canada, it worsened in other parts of the United States. Spillover price pressure supported canola and sunflower seed prices for a second year. Moving forward, prices for other oilseeds ease as a return closer to average conditions draws yields back to trend.



# Soybean supply and use

| September-August year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 87.5 | 87.2 | 87.2 | 87.4 | 87.2 | 87.9 | 88.2 | 88.4 | 88.5 | 88.6 | 88.7 |
| Harvested area | 86.3 | 86.3 | 86.3 | 86.5 | 86.4 | 87.1 | 87.3 | 87.5 | 87.7 | 87.7 | 87.8 |
| | | | | | (Bushels per harvested acre) | | | | | | |
| **Yield** | 49.5 | 51.6 | 52.1 | 52.6 | 53.2 | 53.8 | 54.3 | 54.9 | 55.6 | 56.1 | 56.6 |
| | | | | | (Million bushels) | | | | | | |
| **Supply** | 4,566 | 4,674 | 4,779 | 4,869 | 4,939 | 5,028 | 5,110 | 5,184 | 5,262 | 5,327 | 5,391 |
| Beginning stocks | 274 | 206 | 271 | 300 | 326 | 333 | 349 | 362 | 375 | 392 | 406 |
| Production | 4,276 | 4,453 | 4,492 | 4,554 | 4,598 | 4,681 | 4,746 | 4,807 | 4,872 | 4,920 | 4,970 |
| Imports | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| **Domestic use** | 2,366 | 2,450 | 2,514 | 2,561 | 2,597 | 2,633 | 2,668 | 2,702 | 2,736 | 2,769 | 2,800 |
| Crush | 2,246 | 2,325 | 2,387 | 2,431 | 2,464 | 2,498 | 2,531 | 2,563 | 2,596 | 2,626 | 2,656 |
| Seed and residual | 120 | 125 | 127 | 130 | 133 | 135 | 137 | 139 | 141 | 142 | 144 |
| **Exports** | 1,993 | 1,953 | 1,964 | 1,982 | 2,010 | 2,046 | 2,080 | 2,107 | 2,133 | 2,152 | 2,171 |
| **Total use** | 4,360 | 4,403 | 4,478 | 4,543 | 4,607 | 4,680 | 4,748 | 4,809 | 4,870 | 4,921 | 4,971 |
| **Ending stocks** | 206 | 271 | 300 | 326 | 333 | 349 | 362 | 375 | 392 | 406 | 420 |
| Under loan | 5 | 11 | 13 | 16 | 17 | 18 | 19 | 21 | 22 | 24 | 25 |
| Other stocks | 201 | 260 | 287 | 310 | 316 | 330 | 342 | 354 | 370 | 382 | 394 |
| **Prices, program provisions** | | | | | (Dollars per bushel) | | | | | | |
| Farm price | 14.23 | 12.17 | 11.82 | 11.37 | 11.18 | 10.99 | 10.89 | 10.73 | 10.61 | 10.48 | 10.33 |
| Illinois processor price | 14.43 | 12.42 | 12.09 | 11.65 | 11.47 | 11.28 | 11.19 | 11.02 | 10.91 | 10.79 | 10.64 |
| Loan rate | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 | 6.20 |
| Effective reference price | 8.40 | 8.40 | 9.26 | 9.63 | 9.65 | 9.64 | 9.52 | 9.35 | 9.26 | 9.18 | 9.12 |
| | | | | | (Million acres) | | | | | | |
| Base area | 52.5 | 52.3 | 52.3 | 52.2 | 52.2 | 52.2 | 52.2 | 52.2 | 52.2 | 52.2 | 52.2 |
| | | | | | (Bushels per acre) | | | | | | |
| PLC program yield | 39.9 | 39.4 | 38.9 | 38.1 | 37.7 | 37.5 | 38.2 | 38.5 | 38.6 | 38.6 | 38.5 |
| | | | | | (Percent of base acres) | | | | | | |
| PLC participation rate | 15.6 | 21.4 | 13.6 | 9.6 | 7.4 | 6.7 | 8.9 | 11.1 | 12.0 | 12.1 | 12.1 |
| ARC participation rate | 84.4 | 78.6 | 86.4 | 90.4 | 92.6 | 93.3 | 91.1 | 88.9 | 88.0 | 87.9 | 87.9 |
| **Returns and payments** | | | | | (Dollars) | | | | | | |
| Gross market revenue/a. | 704.57 | 625.97 | 613.30 | 596.50 | 594.29 | 589.54 | 590.05 | 588.03 | 588.28 | 586.73 | 583.11 |
| Variable expenses/a. | 241.39 | 242.91 | 228.95 | 221.54 | 221.90 | 226.46 | 230.03 | 232.36 | 234.46 | 237.35 | 240.74 |
| Market net return/a. | 463.18 | 383.06 | 384.36 | 374.96 | 372.39 | 363.07 | 360.02 | 355.67 | 353.82 | 349.38 | 342.37 |
| Marketing loan benefits/a.* | 0.00 | 0.00 | 0.06 | 0.26 | 0.09 | 0.05 | 0.14 | 0.10 | 0.29 | 0.69 | 0.56 |
| Payments to participants | | | | | | | | | | | |
| PLC/base a.* | 0.00 | 0.49 | 3.16 | 7.44 | 9.24 | 9.60 | 8.43 | 9.52 | 9.16 | 10.22 | 10.47 |
| ARC/base a.* | 0.37 | 1.08 | 5.81 | 13.07 | 18.76 | 21.42 | 17.68 | 13.88 | 12.77 | 12.62 | 13.17 |
| Insurance net indemnities/a.* | 11.33 | 22.75 | 19.84 | 19.90 | 19.03 | 19.00 | 19.11 | 19.07 | 18.79 | 19.17 | 19.16 |
| | | | | | (Dollars per bushel) | | | | | | |
| **Crush margin** | 3.38 | 3.08 | 2.95 | 2.94 | 2.96 | 2.99 | 3.01 | 3.04 | 3.08 | 3.11 | 3.14 |

* Marketing loan benefits and insurance net indemnities are averaged across all acres. ARC and PLC payments are per participating acre.
All projections are averages across 500 stochastic outcomes.

# Soybean oil supply and use

| October-September year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Million pounds) | | | | | | |
| **Supply** | 28,694 | 30,104 | 30,840 | 31,231 | 31,680 | 32,124 | 32,556 | 32,926 | 33,330 | 33,712 | 34,120 |
| Beginning stocks | 1,991 | 1,898 | 1,926 | 1,885 | 1,913 | 1,967 | 2,037 | 2,073 | 2,102 | 2,123 | 2,145 |
| Production | 26,327 | 27,339 | 28,063 | 28,579 | 28,972 | 29,372 | 29,757 | 30,132 | 30,517 | 30,879 | 31,230 |
| Imports | 376 | 867 | 851 | 768 | 796 | 785 | 763 | 720 | 712 | 711 | 745 |
| **Domestic use** | 26,015 | 27,474 | 28,137 | 28,402 | 28,826 | 29,190 | 29,546 | 29,875 | 30,223 | 30,590 | 31,012 |
| Biofuel | 11,657 | 13,047 | 13,675 | 13,913 | 14,274 | 14,565 | 14,849 | 15,111 | 15,382 | 15,677 | 16,027 |
| Food and other | 14,357 | 14,427 | 14,462 | 14,489 | 14,551 | 14,626 | 14,697 | 14,764 | 14,841 | 14,912 | 14,985 |
| **Exports** | 781 | 704 | 817 | 916 | 888 | 897 | 937 | 949 | 985 | 977 | 943 |
| **Total use** | 26,796 | 28,178 | 28,955 | 29,319 | 29,713 | 30,088 | 30,483 | 30,824 | 31,207 | 31,567 | 31,955 |
| **Ending stocks** | 1,898 | 1,926 | 1,885 | 1,913 | 1,967 | 2,037 | 2,073 | 2,102 | 2,123 | 2,145 | 2,165 |
| **Price** | | | | | (Cents per pound) | | | | | | |
| Decatur | 67.38 | 62.20 | 62.10 | 61.43 | 61.10 | 60.76 | 60.69 | 60.51 | 60.58 | 60.65 | 60.82 |

All projections are averages across 500 stochastic outcomes.

# Soybean meal supply and use

| October-September year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Thousand tons) | | | | | | |
| **Supply** | 53,783 | 55,719 | 57,191 | 58,230 | 59,023 | 59,831 | 60,605 | 61,361 | 62,134 | 62,862 | 63,570 |
| Beginning stocks | 311 | 345 | 366 | 371 | 378 | 383 | 387 | 390 | 393 | 396 | 400 |
| Production | 52,872 | 54,774 | 56,225 | 57,258 | 58,045 | 58,848 | 59,618 | 60,371 | 61,141 | 61,866 | 62,571 |
| Imports | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| **Domestic use** | 39,717 | 40,139 | 40,340 | 40,971 | 41,349 | 41,829 | 42,227 | 42,725 | 43,249 | 43,792 | 44,331 |
| **Exports** | 13,722 | 15,214 | 16,480 | 16,880 | 17,291 | 17,615 | 17,988 | 18,242 | 18,489 | 18,671 | 18,836 |
| **Total use** | 53,439 | 55,353 | 56,820 | 57,852 | 58,641 | 59,444 | 60,215 | 60,968 | 61,738 | 62,463 | 63,167 |
| **Ending stocks** | 345 | 366 | 371 | 378 | 383 | 387 | 390 | 393 | 396 | 400 | 404 |
| **Price** | | | | | (Dollars per ton) | | | | | | |
| Decatur, 48% protein | 420.86 | 347.74 | 328.39 | 312.83 | 307.39 | 302.43 | 299.79 | 295.04 | 291.55 | 287.51 | 281.60 |

All projections are averages across 500 stochastic outcomes.

# Canola supply and use

| September-August year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 2.21 | 2.11 | 2.15 | 2.26 | 2.30 | 2.33 | 2.36 | 2.39 | 2.42 | 2.45 | 2.48 |
| Harvested area | 2.17 | 2.06 | 2.10 | 2.20 | 2.25 | 2.28 | 2.30 | 2.33 | 2.37 | 2.39 | 2.42 |
| | | | | | (Pounds per harvested acre) | | | | | | |
| **Yield** | 1,762 | 1,857 | 1,872 | 1,884 | 1,902 | 1,924 | 1,938 | 1,956 | 1,974 | 1,989 | 2,004 |
| **Supply and use** | | | | | (Million pounds) | | | | | | |
| Production | 3,822 | 3,838 | 3,939 | 4,161 | 4,282 | 4,382 | 4,467 | 4,571 | 4,680 | 4,772 | 4,856 |
| Imports | 1,053 | 1,277 | 1,344 | 1,341 | 1,367 | 1,389 | 1,408 | 1,417 | 1,426 | 1,443 | 1,461 |
| Domestic use | 4,426 | 4,735 | 4,929 | 5,123 | 5,271 | 5,393 | 5,496 | 5,604 | 5,716 | 5,822 | 5,921 |
| Exports | 302 | 345 | 351 | 360 | 364 | 364 | 369 | 372 | 379 | 382 | 385 |
| Ending stocks | 428 | 212 | 199 | 243 | 261 | 257 | 255 | 255 | 256 | 254 | 244 |
| **Prices, returns and payments** | | | | | (Dollars) | | | | | | |
| Farm price/lb | 0.310 | 0.235 | 0.238 | 0.232 | 0.230 | 0.227 | 0.227 | 0.225 | 0.225 | 0.223 | 0.221 |
| Market net return/a. | 241.94 | 124.04 | 153.07 | 151.05 | 153.24 | 146.25 | 144.62 | 141.51 | 141.17 | 138.18 | 134.84 |
| Marketing loan benefits/a.* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Payments to participants | | | | | | | | | | | |
| PLC/base a.* | 0.00 | 1.06 | 1.32 | 4.17 | 9.86 | 13.03 | 6.51 | 4.18 | 4.60 | 4.87 | 4.81 |
| ARC/base a.* | 0.00 | 1.84 | 5.56 | 8.12 | 11.43 | 11.75 | 8.96 | 8.60 | 8.03 | 7.71 | 7.83 |

* Marketing loan benefits are averaged across all acres. ARC and PLC payments are per participating acre.

All projections are averages across 500 stochastic outcomes.

## Sunflower seed supply and use

| September-August year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 1.69 | 1.79 | 1.70 | 1.79 | 1.76 | 1.73 | 1.72 | 1.72 | 1.73 | 1.74 | 1.74 |
| Harvested area | 1.61 | 1.71 | 1.63 | 1.72 | 1.68 | 1.65 | 1.64 | 1.65 | 1.66 | 1.66 | 1.66 |
| | | | | | (Pounds per harvested acre) | | | | | | |
| **Yield** | 1,750 | 1,682 | 1,696 | 1,709 | 1,722 | 1,736 | 1,748 | 1,761 | 1,773 | 1,783 | 1,793 |
| **Supply and use** | | | | | (Million pounds) | | | | | | |
| Production | 2,813 | 2,884 | 2,766 | 2,936 | 2,894 | 2,871 | 2,869 | 2,905 | 2,943 | 2,959 | 2,983 |
| Imports | 271 | 310 | 354 | 353 | 366 | 377 | 374 | 365 | 359 | 358 | 357 |
| Domestic use | 2,787 | 3,007 | 3,017 | 3,133 | 3,137 | 3,129 | 3,124 | 3,141 | 3,169 | 3,187 | 3,209 |
| Exports | 149 | 136 | 122 | 122 | 118 | 115 | 117 | 121 | 124 | 123 | 124 |
| Ending stocks | 443 | 494 | 475 | 509 | 515 | 518 | 521 | 529 | 537 | 545 | 552 |
| **Prices, returns and payments** | | | | | (Dollars) | | | | | | |
| Farm price/lb | 0.306 | 0.261 | 0.269 | 0.252 | 0.245 | 0.239 | 0.238 | 0.237 | 0.236 | 0.235 | 0.234 |
| Market net return/a. | 333.47 | 235.00 | 264.51 | 245.01 | 235.72 | 224.53 | 222.60 | 221.81 | 220.94 | 219.07 | 217.62 |
| Marketing loan benefits/a.* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Payments to participants | | | | | | | | | | | |
| PLC/base a.* | 0.00 | 0.00 | 0.00 | 0.10 | 1.25 | 2.77 | 1.42 | 0.67 | 0.45 | 0.34 | 0.20 |
| ARC/base a.* | 0.00 | 0.02 | 0.25 | 3.13 | 11.26 | 11.94 | 7.76 | 5.13 | 4.15 | 3.27 | 2.91 |

* Marketing loan benefits are averaged across all acres. ARC and PLC payments are per participating acre.
All projections are averages across 500 stochastic outcomes.

## Cottonseed production and prices

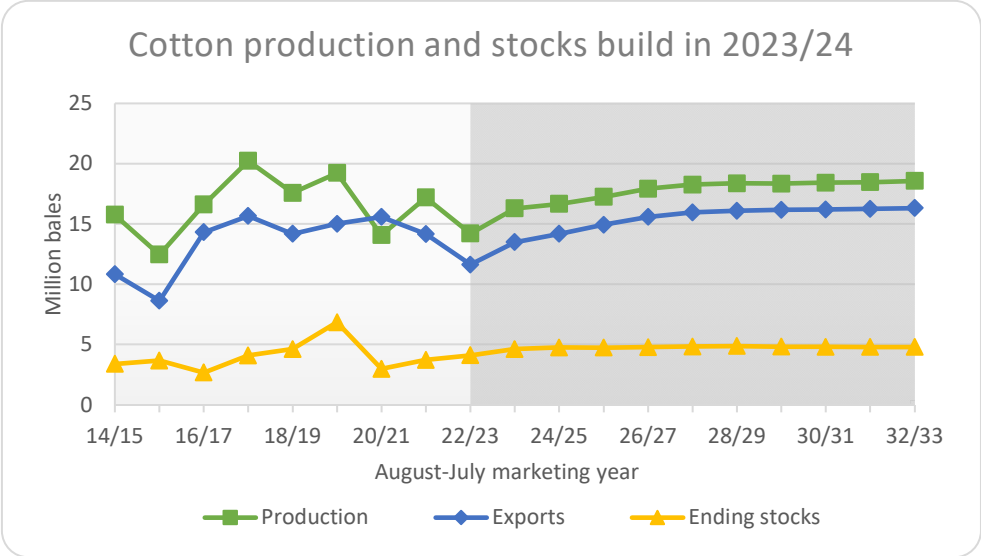
| Marketing year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Thousand tons, August-July year) | | | | | | |
| Production | 4,455 | 5,221 | 5,352 | 5,543 | 5,752 | 5,861 | 5,898 | 5,885 | 5,901 | 5,905 | 5,932 |
| | | | | | (Dollars per ton, August-July year) | | | | | | |
| Price | 331 | 257 | 235 | 226 | 219 | 215 | 212 | 210 | 208 | 205 | 202 |

All projections are averages across 500 stochastic outcomes.

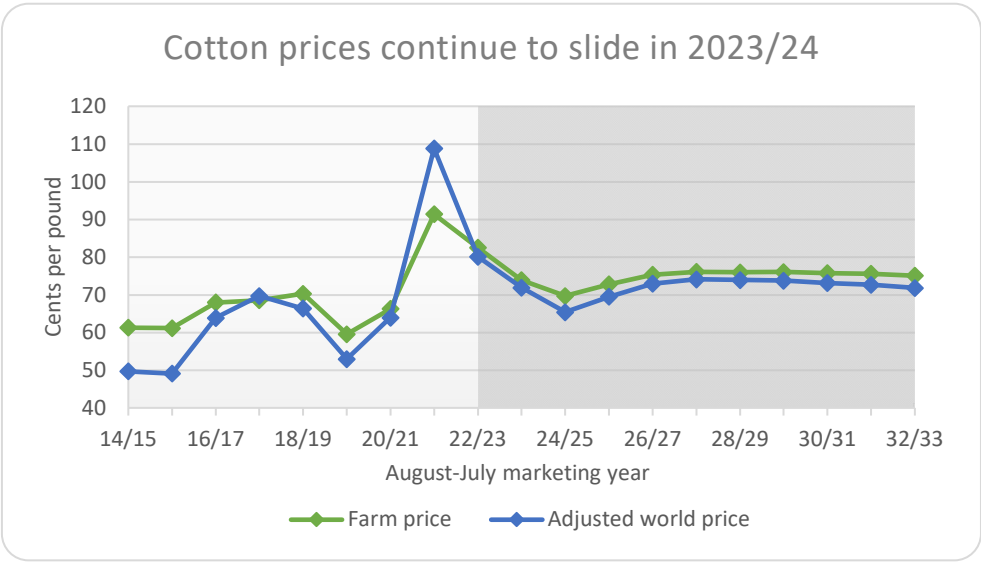
# Other crops

## Upland cotton and seed cotton

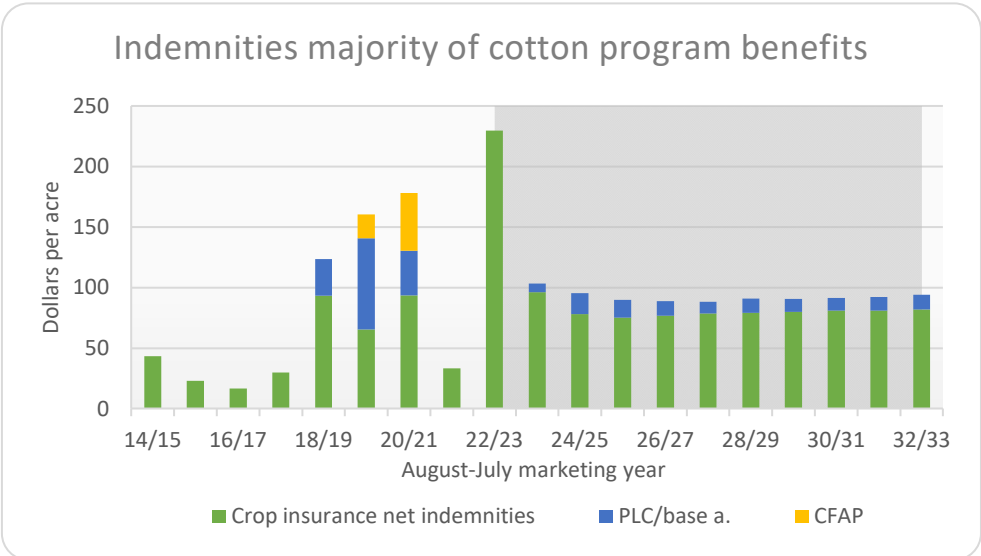
The extreme drought in 2022 impacted cotton production by increasing abandonment of planted acres (the highest in at least 70 years). Despite a decline in harvested area and production, ending stocks rose as less production met reduced exports and domestic mill use. A return of abandonment closer to historical averages improves production in 2023/24. Cotton production increases modestly throughout the baseline.

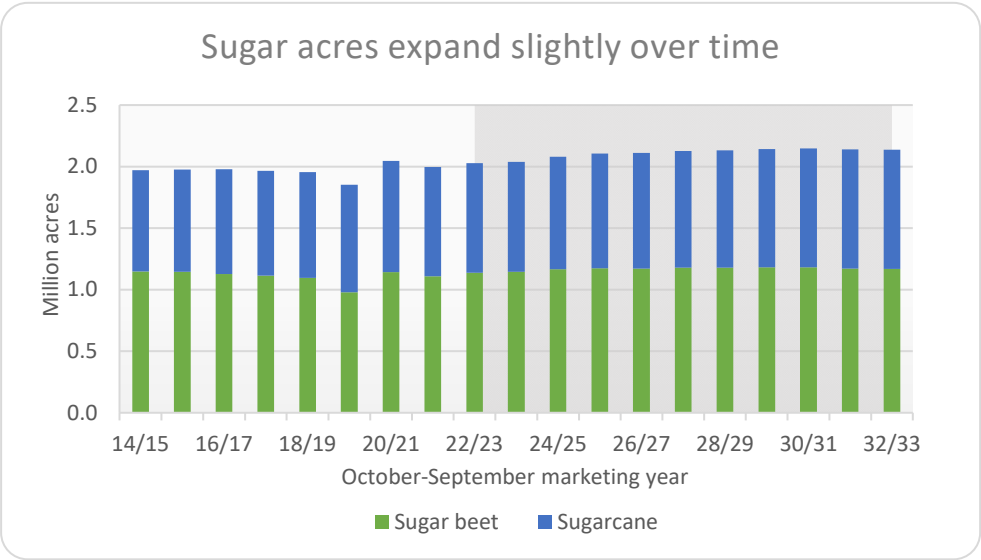



Upland cotton prices rose dramatically in 2021/22 with adjusted world prices hitting their highest point in 11 years. Despite weaker U.S. production in 2022/23, U.S. farm prices fell as total use declined. For 2023/24, farm prices continue to slide as increasing domestic mill use and exports are not enough to compensate for better U.S. production.



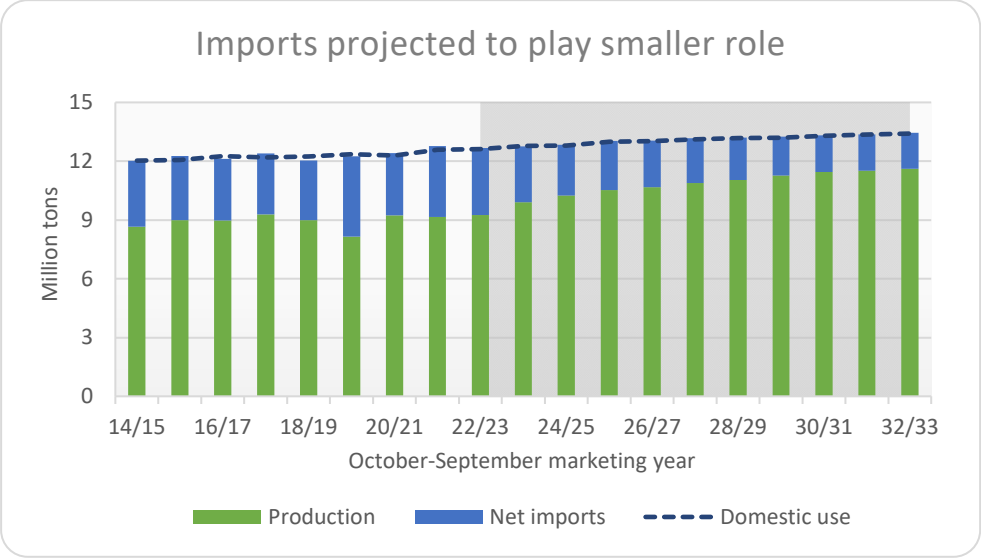

The widespread extreme drought in 2022 resulted in record large crop insurance benefits for 2022/23, although the higher seed cotton prices drove PLC payments to zero. For 2023/24 and later, crop insurance net indemnities average $80/acre. PLC payments average just $12/acre as projected average seed cotton prices are above the effective reference price in most years.



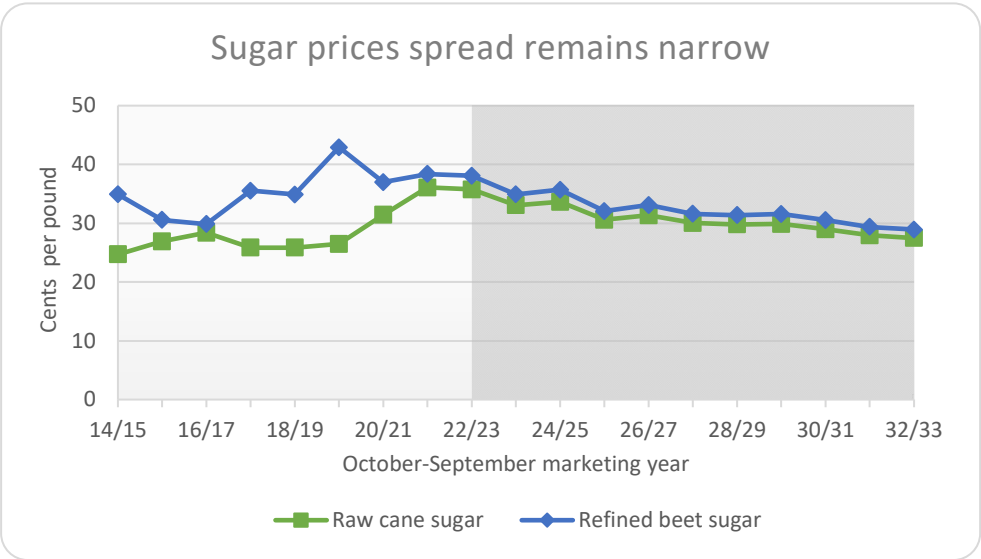



## Sugar

Areas harvested for sugarcane and sugar beets averaged 0.86 and 1.12 million acres, respectively, for the 10-year historical period from 2012/13 to 2021/22. Both crops are projected to increase areas harvested over the projection period with sugar beet acres topping out at just over 1.18 million acres in 2029/30 and sugarcane acres peaking at 0.99 million acres in 2032/33.



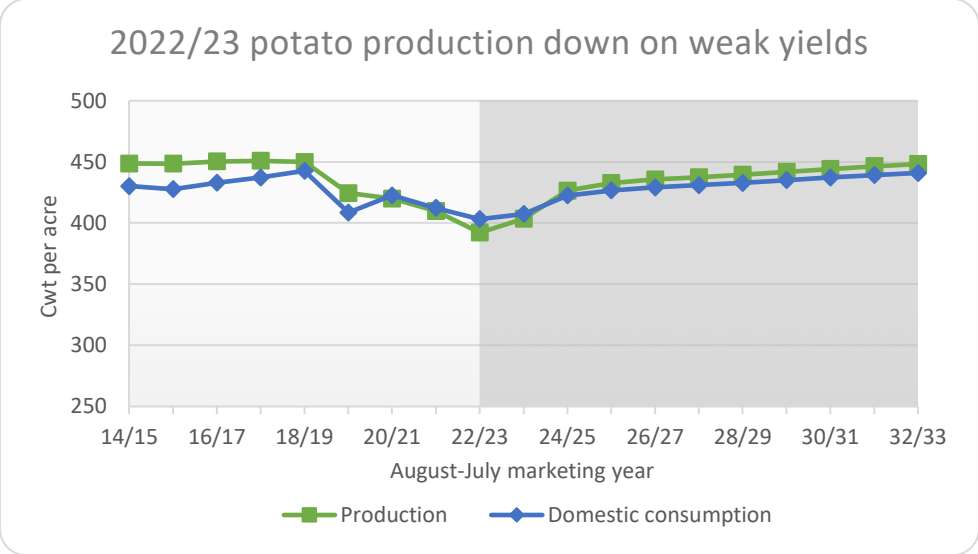

Projected domestic sugar use reaches 13.4 million tons by 2032/33 up from 12.6 million tons in 2022/23. This growth in demand is met primarily with additional domestic sugar production. As a result, the need for imported sugar beyond tariff rate quotas is projected to decline. Projected total imports fall from 3.5 million tons in 2022/23 to 1.9 million tons in 2032/33. The share of demand met with domestic supplies rises to just over 86% compared to the 10-year historical average of 73%.



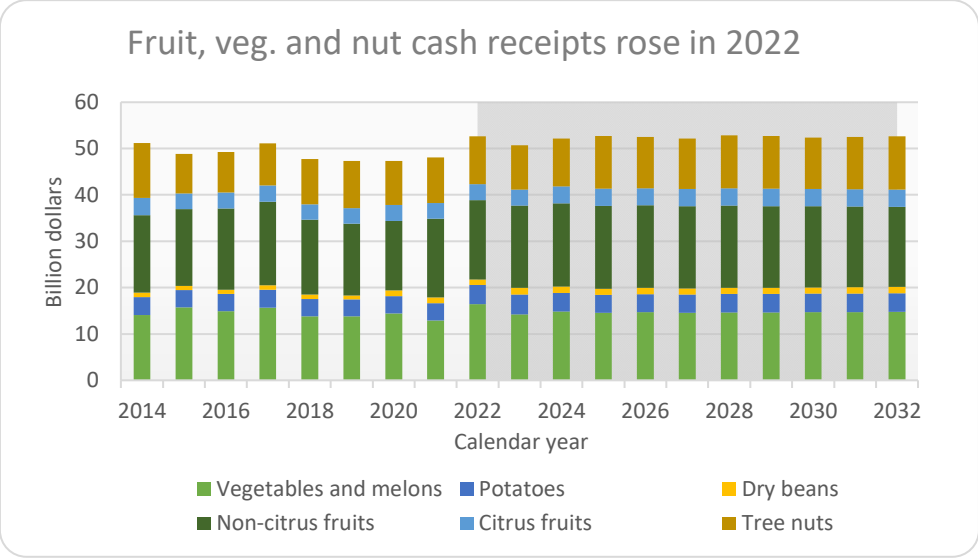

The projected price spread between raw sugar and refined sugar remains quite narrow compared to recent years, though not at unheard-of levels. The projected prices also decline somewhat over time, with raw prices ending at 27.4 cents/lb and refined prices at 28.9 cents/lb. These prices remain above the levels that would normally result in sugar program outlays.

## Potatoes, fresh vegetables, fruits and nuts

Another year of drought in key potato growing states in 2022 limited yield potential and reduced potato production again in 2022/23. Projected receipts in 2023/24 rebound as trend yields combine with more area to increase production. This assumes that the recent shift of the El Niño Southern Oscillation Index (ENSO) to neutral conditions this spring will lead to improved precipitation in key potato-producing states in 2023.

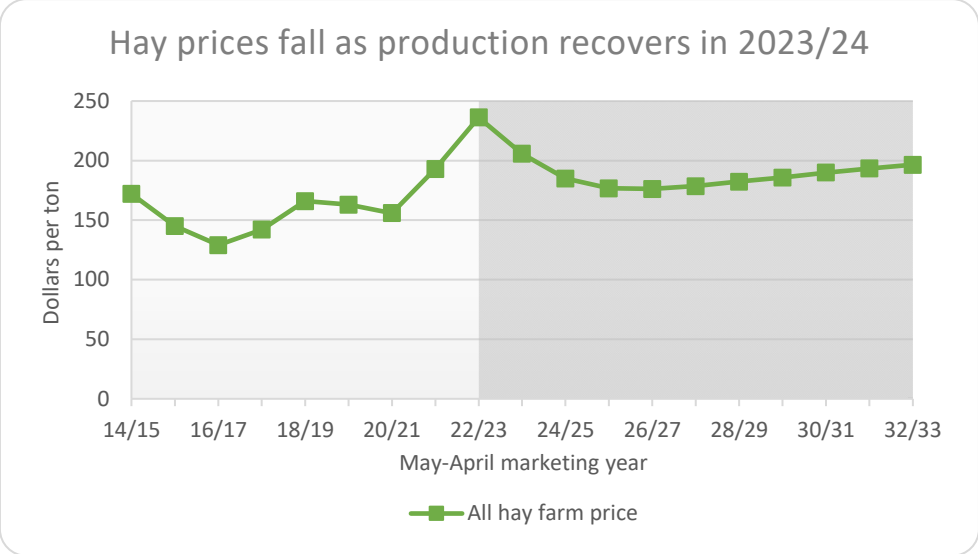



Total cash receipts for fruits, vegetables and tree nuts increased by 9% in 2022 compared to 2021. The drought across much of the Plains and Western United States limited production for multiple crops. Prices consequently rose in select categories on weaker domestic production. Projected receipts decrease 4% in 2023. Yield and production improve for multiple specialty crops as drought recedes in the West, which helps to reduce prices.




## Hay

Hay prices peak in 2022/23 because of drought-reduced production. The assumed return to trend yields and a recovery in area in 2023/24 contribute to a projected price decline. An increase in cattle numbers contributes to an increase in prices after 2025/26. The all hay price is made up of alfalfa prices and other hay prices, which are higher and lower than the all hay price, respectively.



# Upland cotton supply and use

| August-July year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Planted area | 13.58 | 10.52 | 11.04 | 11.31 | 11.59 | 11.71 | 11.73 | 11.74 | 11.74 | 11.71 | 11.68 |
| Harvested area | 7.26 | 9.14 | 9.31 | 9.51 | 9.75 | 9.85 | 9.82 | 9.70 | 9.65 | 9.60 | 9.59 |
| | | | | | (Pounds per harvested acre) | | | | | | |
| **Yield** | 939 | 853 | 858 | 870 | 880 | 888 | 897 | 906 | 915 | 922 | 927 |
| | | | | | (Million bales) | | | | | | |
| **Supply** | 17.93 | 20.40 | 21.28 | 22.00 | 22.65 | 23.03 | 23.19 | 23.20 | 23.23 | 23.26 | 23.34 |
| Beginning stocks | 3.73 | 4.11 | 4.62 | 4.76 | 4.74 | 4.78 | 4.83 | 4.87 | 4.82 | 4.81 | 4.79 |
| Production | 14.21 | 16.28 | 16.66 | 17.24 | 17.91 | 18.25 | 18.36 | 18.33 | 18.41 | 18.45 | 18.55 |
| Imports | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Use** | 13.82 | 15.77 | 16.52 | 17.26 | 17.87 | 18.21 | 18.32 | 18.38 | 18.42 | 18.47 | 18.56 |
| Domestic mill use | 2.20 | 2.29 | 2.35 | 2.34 | 2.30 | 2.25 | 2.23 | 2.22 | 2.22 | 2.23 | 2.24 |
| Exports | 11.62 | 13.49 | 14.17 | 14.92 | 15.58 | 15.96 | 16.09 | 16.16 | 16.20 | 16.25 | 16.32 |
| **Ending stocks** | 4.11 | 4.62 | 4.76 | 4.74 | 4.78 | 4.83 | 4.87 | 4.82 | 4.81 | 4.79 | 4.79 |
| **Prices, program provisions** | | | | | (Cents per pound) | | | | | | |
| Farm price | 82.53 | 73.93 | 69.73 | 72.82 | 75.33 | 76.09 | 76.00 | 76.09 | 75.76 | 75.60 | 75.11 |
| Adjusted world price | 80.11 | 71.92 | 65.41 | 69.53 | 73.00 | 74.11 | 73.97 | 73.78 | 73.14 | 72.67 | 71.85 |
| Loan rate | 52.00 | 52.00 | 52.00 | 52.00 | 51.98 | 51.96 | 51.99 | 51.99 | 52.00 | 51.98 | 51.99 |
| **Returns and payments** | | | | | (Dollars per ton) | | | | | | |
| Gross market revenue/a. | 978.03 | 774.78 | 731.02 | 762.32 | 789.24 | 800.35 | 806.12 | 813.65 | 816.80 | 820.19 | 818.44 |
| Variable expenses/a. | 549.61 | 566.37 | 540.78 | 525.40 | 532.34 | 546.55 | 555.64 | 560.41 | 564.26 | 570.07 | 577.50 |
| Market net return/a. | 428.41 | 208.42 | 190.24 | 236.92 | 256.90 | 253.79 | 250.48 | 253.23 | 252.54 | 250.12 | 240.95 |
| Marketing loan benefits/a.* | 0.00 | 3.99 | 8.62 | 5.68 | 3.96 | 2.92 | 4.11 | 2.23 | 3.78 | 3.78 | 2.73 |
| Insurance net indemnities/a. | 229.71 | 96.23 | 78.06 | 75.28 | 76.80 | 78.70 | 79.15 | 79.83 | 80.83 | 80.94 | 82.01 |

* Marketing loan benefits and insurance net indemnities are averaged across all acres. ARC and PLC payments are per participating acre.
All projections are averages across 500 stochastic outcomes.

# Seed cotton indicators

| October-September year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Cents per pound) | | | | | | |
| Marketing year average price | 45.16 | 38.96 | 36.50 | 37.55 | 38.44 | 38.64 | 38.53 | 38.51 | 38.32 | 38.22 | 37.94 |
| Effective reference price | 36.70 | 36.70 | 36.70 | 36.82 | 36.92 | 36.76 | 36.72 | 36.72 | 36.74 | 36.74 | 36.74 |
| | | | | | (Million acres) | | | | | | |
| Base area | 12.18 | 12.14 | 12.13 | 12.12 | 12.11 | 12.11 | 12.11 | 12.11 | 12.12 | 12.12 | 12.12 |
| | | | | | (Pounds per acre) | | | | | | |
| PLC program yield | 997 | 804 | 1,060 | 1,069 | 983 | 860 | 942 | 920 | 921 | 916 | 944 |
| | | | | | (Percent of base acres) | | | | | | |
| PLC participation rate | 60.9 | 54.8 | 71.5 | 72.0 | 66.4 | 56.1 | 61.9 | 60.0 | 60.1 | 59.2 | 61.2 |
| ARC participation rate | 39.1 | 45.2 | 28.5 | 28.0 | 33.6 | 43.9 | 38.1 | 40.0 | 39.9 | 40.8 | 38.8 |
| **Payments to participants** | | | | | (Dollars) | | | | | | |
| PLC/base a.* | 0.00 | 7.01 | 17.37 | 14.72 | 12.00 | 9.54 | 11.71 | 10.95 | 10.73 | 11.46 | 12.23 |
| ARC/base a.* | 14.75 | 2.63 | 6.20 | 8.43 | 8.51 | 13.28 | 9.85 | 9.84 | 10.37 | 11.47 | 11.46 |

All projections are averages across 500 stochastic outcomes.

# Sugar supply and use

| October-September year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Million acres) | | | | | | |
| Sugar cane harvested | 0.889 | 0.894 | 0.915 | 0.930 | 0.939 | 0.947 | 0.953 | 0.960 | 0.966 | 0.967 | 0.968 |
| Sugar beet planted | 1.160 | 1.173 | 1.194 | 1.203 | 1.201 | 1.208 | 1.207 | 1.210 | 1.210 | 1.201 | 1.198 |
| Sugar beet harvested | 1.137 | 1.145 | 1.166 | 1.174 | 1.172 | 1.178 | 1.178 | 1.181 | 1.181 | 1.172 | 1.169 |
| **Yield** | | | | | (Tons per harvested acre) | | | | | | |
| Cane sugar | 4.73 | 4.83 | 4.88 | 4.93 | 4.97 | 5.01 | 5.05 | 5.11 | 5.16 | 5.18 | 5.21 |
| Beet sugar | 4.44 | 4.87 | 4.96 | 5.05 | 5.13 | 5.21 | 5.29 | 5.38 | 5.47 | 5.55 | 5.62 |
| **Supply and use** | | | | | (Thousand tons) | | | | | | |
| Production | 9,251 | 9,896 | 10,251 | 10,518 | 10,672 | 10,886 | 11,049 | 11,263 | 11,443 | 11,511 | 11,615 |
| Cane sugar | 4,204 | 4,319 | 4,467 | 4,591 | 4,664 | 4,744 | 4,818 | 4,906 | 4,987 | 5,010 | 5,041 |
| Beet sugar | 5,046 | 5,577 | 5,784 | 5,927 | 6,008 | 6,142 | 6,231 | 6,357 | 6,456 | 6,501 | 6,574 |
| Imports | 3,461 | 2,883 | 2,611 | 2,551 | 2,403 | 2,319 | 2,204 | 2,027 | 1,924 | 1,900 | 1,881 |
| Domestic deliveries | 12,608 | 12,770 | 12,795 | 12,984 | 13,011 | 13,123 | 13,179 | 13,199 | 13,288 | 13,359 | 13,435 |
| Exports | 37 | 37 | 37 | 42 | 40 | 41 | 42 | 43 | 44 | 46 | 47 |
| Ending stocks | 1,885 | 1,856 | 1,886 | 1,929 | 1,953 | 1,994 | 2,026 | 2,074 | 2,109 | 2,115 | 2,130 |
| **Prices** | | | | | (Cents per pound) | | | | | | |
| N.Y. spot raw sugar | 35.73 | 33.07 | 33.63 | 30.59 | 31.35 | 30.06 | 29.79 | 29.88 | 28.96 | 27.93 | 27.47 |
| Refined beet sugar | 38.07 | 34.90 | 35.69 | 32.06 | 33.09 | 31.60 | 31.36 | 31.57 | 30.54 | 29.38 | 28.90 |

All projections are averages across 500 stochastic outcomes.

# Potato supply and use

| August-July year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Area** | | | | | (Thousand acres) | | | | | | |
| Planted area | 901 | 912 | 931 | 939 | 939 | 936 | 935 | 934 | 933 | 932 | 929 |
| Harvested area | 896 | 908 | 925 | 932 | 932 | 930 | 928 | 928 | 927 | 926 | 924 |
| | | | | | (Hundredweight per harvested acre) | | | | | | |
| **Yield** | 438 | 445 | 461 | 464 | 467 | 470 | 473 | 476 | 479 | 482 | 485 |
| **Supply and use** | | | | | (Million hundredweight) | | | | | | |
| Production | 392 | 403 | 427 | 433 | 436 | 437 | 439 | 442 | 444 | 446 | 448 |
| Imports | 68 | 69 | 69 | 70 | 71 | 71 | 72 | 73 | 73 | 74 | 74 |
| Domestic disappearance | 403 | 407 | 422 | 427 | 429 | 431 | 433 | 435 | 437 | 439 | 441 |
| Exports | 74 | 75 | 77 | 79 | 80 | 82 | 83 | 84 | 85 | 87 | 87 |
| **Prices** | | | | | (Dollars per hundredweight) | | | | | | |
| Farm price | 12.24 | 11.56 | 10.01 | 9.81 | 9.82 | 9.89 | 9.92 | 9.91 | 9.88 | 9.88 | 9.89 |
| | | | | | (Percent of acres) | | | | | | |
| **Crop insurance participation** | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 | 83 |
| | | | | | (Million dollars) | | | | | | |
| **Cash receipts** | 4,115 | 4,295 | 4,011 | 3,874 | 3,888 | 3,927 | 3,961 | 3,984 | 3,998 | 4,013 | 4,034 |
| **Returns and payments** | | | | | (Dollars) | | | | | | |
| Gross market revenue/a. | 5,362 | 5,142 | 4,618 | 4,556 | 4,592 | 4,651 | 4,696 | 4,722 | 4,738 | 4,765 | 4,803 |
| Variable expenses/a. | 3,354 | 3,259 | 2,921 | 2,677 | 2,697 | 2,809 | 2,856 | 2,884 | 2,905 | 2,942 | 2,994 |
| Market net return/a. | 2,008 | 1,883 | 1,697 | 1,879 | 1,895 | 1,842 | 1,839 | 1,837 | 1,833 | 1,823 | 1,809 |
| Premium subsidy/a. | 64 | 84 | 77 | 63 | 64 | 66 | 67 | 68 | 69 | 69 | 70 |

All projections are averages across 500 stochastic outcomes.

# Vegetable and melon supply and use

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Harvested area** | | | | | (Million acres) | | | | | | |
| Vegetable area | 3.80 | 3.83 | 3.81 | 3.81 | 3.80 | 3.80 | 3.80 | 3.79 | 3.79 | 3.79 | 3.79 |
| Melon area | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| **Yield** | | | | | (Tons per harvested acre) | | | | | | |
| Vegetable yield | 8.7 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 |
| Melon yield | 16.6 | 16.9 | 17.1 | 17.3 | 17.5 | 17.7 | 17.9 | 18.0 | 18.2 | 18.4 | 18.6 |
| **Vegetable supply and use** | | | | | (Million tons) | | | | | | |
| Production | 33.2 | 33.5 | 33.4 | 33.4 | 33.3 | 33.3 | 33.2 | 33.2 | 33.2 | 33.2 | 33.2 |
| Imports | 11.1 | 11.2 | 11.4 | 11.6 | 11.8 | 12.0 | 12.3 | 12.5 | 12.7 | 12.9 | 13.1 |
| Domestic use | 41.2 | 41.5 | 41.6 | 41.8 | 41.9 | 42.1 | 42.2 | 42.4 | 42.6 | 42.8 | 43.0 |
| Exports | 3.1 | 3.2 | 3.2 | 3.3 | 3.2 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| **Melon supply and use** | | | | | | | | | | | |
| Production | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Imports | 1.5 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.5 | 1.5 |
| Domestic use | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 |
| Exports | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| **Prices** | | | | | (Cents per pound) | | | | | | |
| Vegetable price | 18.89 | 20.19 | 19.72 | 20.66 | 20.20 | 20.46 | 20.25 | 20.43 | 20.38 | 20.47 | 20.49 |
| Dry bean price | 47.29 | 42.36 | 39.23 | 38.32 | 37.94 | 37.69 | 37.46 | 37.25 | 37.15 | 37.08 | 36.98 |
| Melons price | 19.07 | 18.85 | 19.76 | 19.34 | 19.79 | 19.70 | 20.02 | 20.07 | 20.31 | 20.42 | 20.66 |
| **Cash receipts** | | | | | (Million dollars) | | | | | | |
| Vegetable* | 15,585 | 13,341 | 13,919 | 13,635 | 13,772 | 13,630 | 13,725 | 13,688 | 13,735 | 13,746 | 13,790 |
| Dry bean | 1,177 | 1,421 | 1,346 | 1,314 | 1,315 | 1,323 | 1,332 | 1,341 | 1,351 | 1,362 | 1,373 |
| Melon | 885 | 889 | 933 | 920 | 942 | 940 | 955 | 957 | 969 | 974 | 985 |
| Total receipts | 17,647 | 15,651 | 16,199 | 15,869 | 16,029 | 15,892 | 16,011 | 15,986 | 16,054 | 16,082 | 16,148 |

Note: Vegetable category excludes dry beans, melons and potatoes.

# Fruit and tree nut supply and use

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Bearing area** | | | | | (Million acres) | | | | | | |
| Non-citrus fruit | 1.83 | 1.86 | 1.87 | 1.88 | 1.88 | 1.88 | 1.87 | 1.86 | 1.86 | 1.85 | 1.84 |
| Citrus fruit | 0.64 | 0.61 | 0.63 | 0.62 | 0.63 | 0.63 | 0.60 | 0.60 | 0.58 | 0.58 | 0.57 |
| Tree nut | 2.59 | 2.60 | 2.63 | 2.58 | 2.64 | 2.71 | 2.69 | 2.72 | 2.78 | 2.80 | 2.81 |
| **Yield** | | | | | (Tons per bearing acre) | | | | | | |
| Non-citrus fruit | 8.38 | 8.96 | 8.99 | 9.02 | 9.05 | 9.08 | 9.11 | 9.14 | 9.17 | 9.20 | 9.23 |
| Citrus fruit | 8.83 | 8.00 | 10.42 | 9.96 | 10.43 | 10.32 | 10.44 | 10.44 | 10.50 | 10.52 | 10.56 |
| Tree nut | 0.75 | 0.82 | 0.83 | 0.83 | 0.83 | 0.83 | 0.84 | 0.84 | 0.84 | 0.85 | 0.85 |
| **Non-citrus fruit supply and use** | | | | | (Million tons) | | | | | | |
| Production | 15.3 | 16.6 | 16.8 | 17.0 | 17.1 | 17.1 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 |
| Imports | 11.2 | 11.3 | 11.3 | 11.3 | 11.3 | 11.4 | 11.4 | 11.5 | 11.5 | 11.6 | 11.6 |
| Domestic use | 24.8 | 26.0 | 26.1 | 26.3 | 26.4 | 26.4 | 26.5 | 26.5 | 26.6 | 26.7 | 26.7 |
| Exports | 1.8 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.9 | 1.9 |
| **Citrus fruit supply and use** | | | | | | | | | | | |
| Production | 5.6 | 4.9 | 6.5 | 6.2 | 6.6 | 6.5 | 6.3 | 6.2 | 6.1 | 6.1 | 6.0 |
| Imports | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.7 | 1.8 |
| Domestic use | 6.8 | 6.2 | 7.7 | 7.4 | 7.7 | 7.6 | 7.4 | 7.4 | 7.3 | 7.3 | 7.3 |
| Exports | 0.6 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| **Tree nut supply and use** | | | | | | | | | | | |
| Production | 1.9 | 2.1 | 2.2 | 2.1 | 2.2 | 2.3 | 2.3 | 2.3 | 2.3 | 2.4 | 2.4 |
| Imports | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Domestic use | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 |
| Exports | 1.4 | 1.6 | 1.6 | 1.6 | 1.7 | 1.7 | 1.7 | 1.8 | 1.8 | 1.8 | 1.8 |
| **Prices** | | | | | (Cents per pound) | | | | | | |
| Non-citrus fruit | 56.03 | 53.36 | 53.54 | 52.88 | 52.38 | 52.21 | 52.03 | 51.80 | 51.52 | 51.18 | 50.82 |
| Citrus fruit | 30.57 | 35.64 | 27.87 | 29.85 | 28.07 | 28.69 | 29.93 | 29.95 | 30.52 | 30.73 | 30.91 |
| Tree nut | 263.86 | 220.29 | 236.44 | 262.23 | 250.51 | 237.17 | 251.25 | 246.47 | 233.99 | 236.61 | 239.22 |
| **Cash receipts** | | | | | (Million dollars) | | | | | | |
| Non-citrus fruit | 17,122 | 17,714 | 17,952 | 17,905 | 17,828 | 17,761 | 17,689 | 17,601 | 17,496 | 17,376 | 17,248 |
| Citrus fruit | 3,430 | 3,485 | 3,635 | 3,708 | 3,688 | 3,717 | 3,744 | 3,738 | 3,740 | 3,732 | 3,724 |
| Tree nut | 10,293 | 9,530 | 10,369 | 11,296 | 11,065 | 10,802 | 11,397 | 11,348 | 11,054 | 11,281 | 11,484 |
| Total receipts | 30,844 | 30,729 | 31,956 | 32,908 | 32,580 | 32,279 | 32,830 | 32,688 | 32,290 | 32,389 | 32,456 |

# Hay supply and use

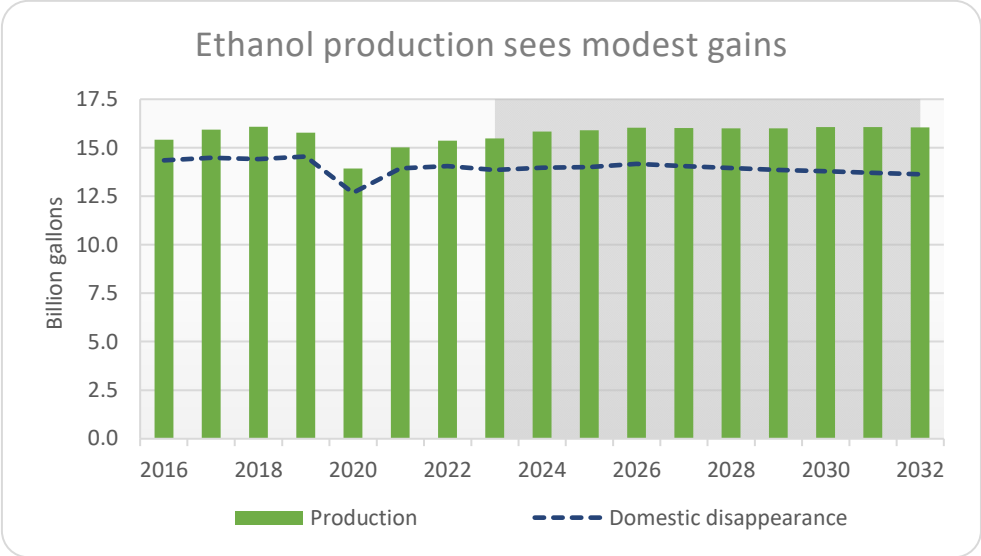
| May-April year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Million acres) | | | | | | |
| **Harvested area** | 49.5 | 50.2 | 50.1 | 49.7 | 49.5 | 49.6 | 49.9 | 50.3 | 50.6 | 51.0 | 51.3 |
| | | | | | (Tons per acre) | | | | | | |
| **Yield** | 2.28 | 2.41 | 2.43 | 2.44 | 2.45 | 2.46 | 2.47 | 2.47 | 2.48 | 2.49 | 2.49 |
| **Supply and use** | | | | | (Million tons) | | | | | | |
| Production | 112.8 | 121.0 | 121.6 | 121.2 | 121.4 | 122.1 | 123.1 | 124.2 | 125.5 | 126.8 | 127.8 |
| Domestic disappearance | 112.9 | 113.6 | 113.5 | 114.1 | 115.0 | 116.2 | 117.4 | 118.5 | 119.7 | 120.9 | 122.0 |
| Net exports | 4.8 | 5.1 | 5.4 | 5.6 | 5.7 | 5.7 | 5.7 | 5.6 | 5.6 | 5.6 | 5.6 |
| Ending stocks | 11.9 | 14.2 | 16.9 | 18.5 | 19.2 | 19.5 | 19.6 | 19.7 | 19.9 | 20.1 | 20.3 |
| | | | | | (Dollars per ton) | | | | | | |
| **All hay farm price** | 236.30 | 205.75 | 185.02 | 176.74 | 176.18 | 178.58 | 182.35 | 185.83 | 189.95 | 193.42 | 196.58 |

All projections are averages across 500 stochastic outcomes.

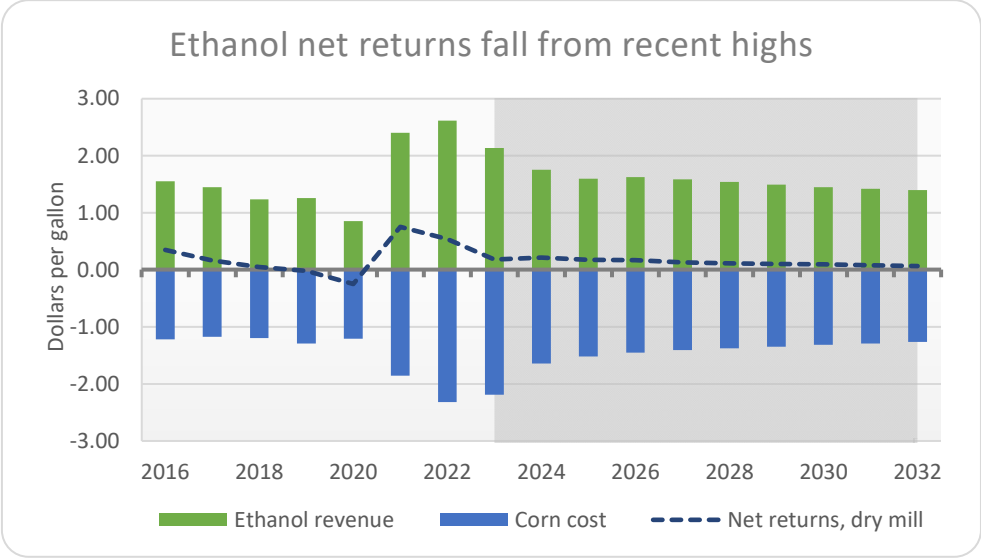
# Biofuels

## Ethanol

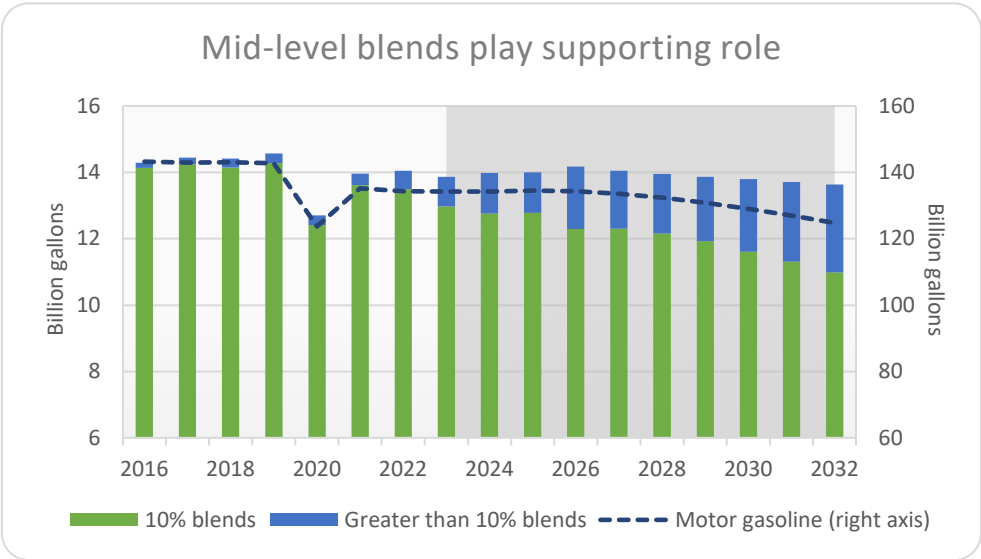
U.S. ethanol production is projected to rise from a little over 15.3 billion gallons in 2022 to just over 16 billion gallons by 2032. Nearly all domestic production comes from corn starch, with only minor quantities of cellulosic based fuel. Domestic use remains nearly flat in the projections.

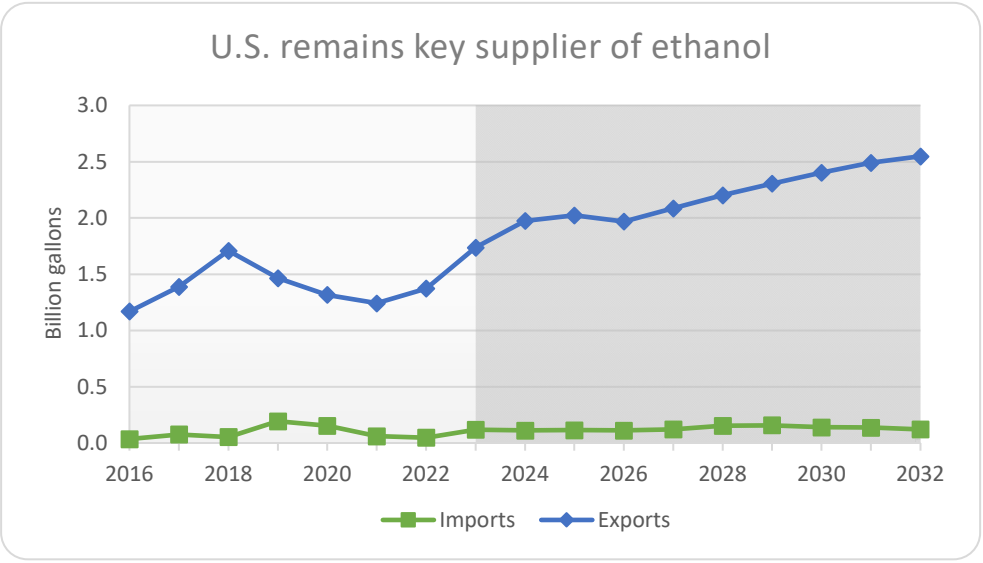



Dry-mill ethanol net returns maintained some of the strength of 2021 into 2022. Going forward, projected net returns fall to a lower but still sustainable level as both corn input costs and revenues from ethanol fall similarly.

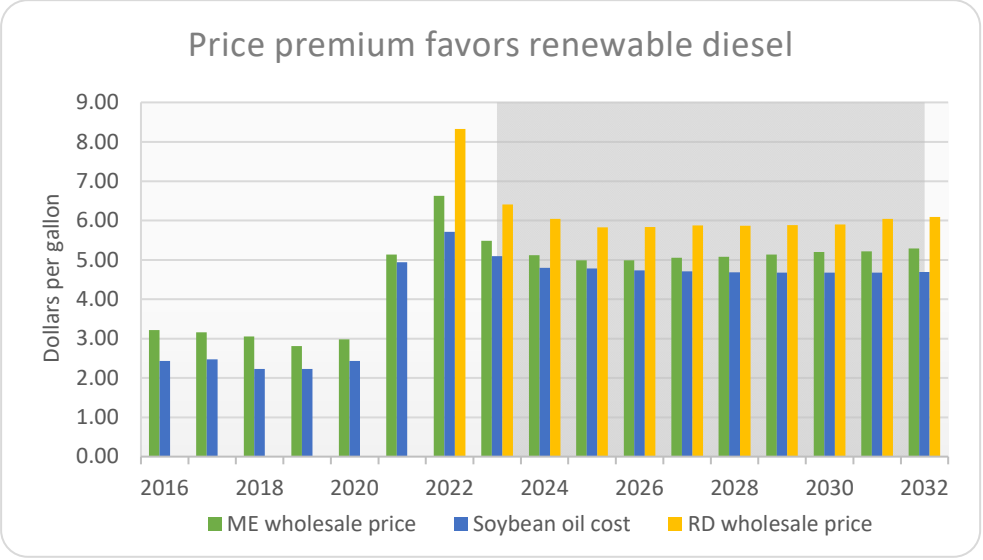



Motor gasoline use declines over the projection period due to improvements in vehicle fuel efficiency, among other factors. Projected ethanol use peaks at around 14.1 billon gallons in 2026 before trending down. The relative decline in ethanol use is less than the reduction in gasoline use as the mid-level blends (e.g., E15) expand their share in the fuel pool. Keep in mind that the projected pace of E15 adoption is based on price signals alone and does not include new rules or legislation related to the Reid vapor pressure waiver for E15.



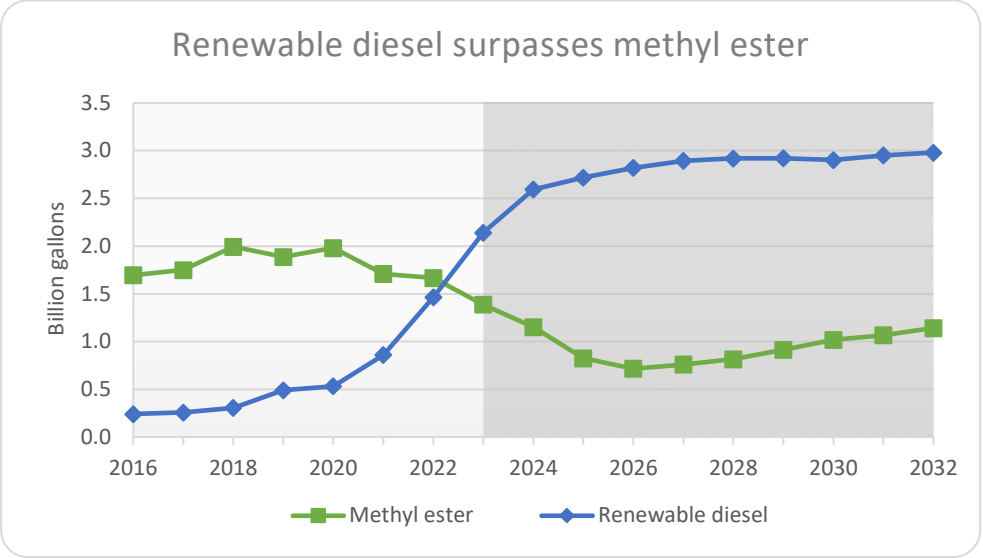



As petroleum prices and global incomes rise, projected international ethanol demand increases and pushes U.S. ethanol exports to near 2.5 billion gallons by 2032. U.S. imports of ethanol remain limited to small quantities brought in to help meet state-level Low Carbon Fuel Standard (LCFS) requirements.



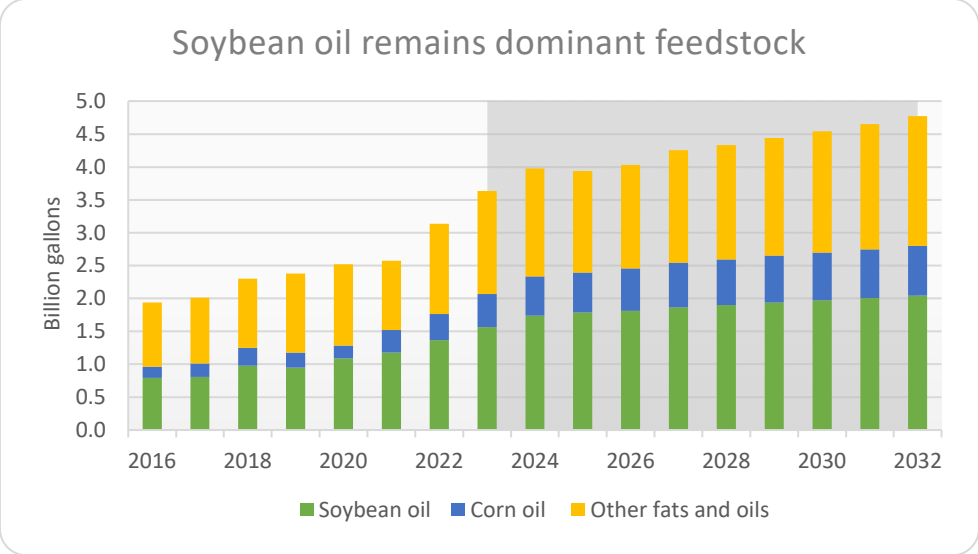

## Biomass-based diesel

High Renewable Identification Number (RIN) prices and production incentives in the Inflation Reduction Act give renewable diesel (RD) a distinct advantage over methyl ester (ME) biodiesel despite reduced LCFS credit prices. The spread between projected soybean oil prices (per gallon of renewable fuel produced) and ME prices averages $0.21/gallon, while the spread between projected soybean oil prices and RD prices averages $1.22/gallon.



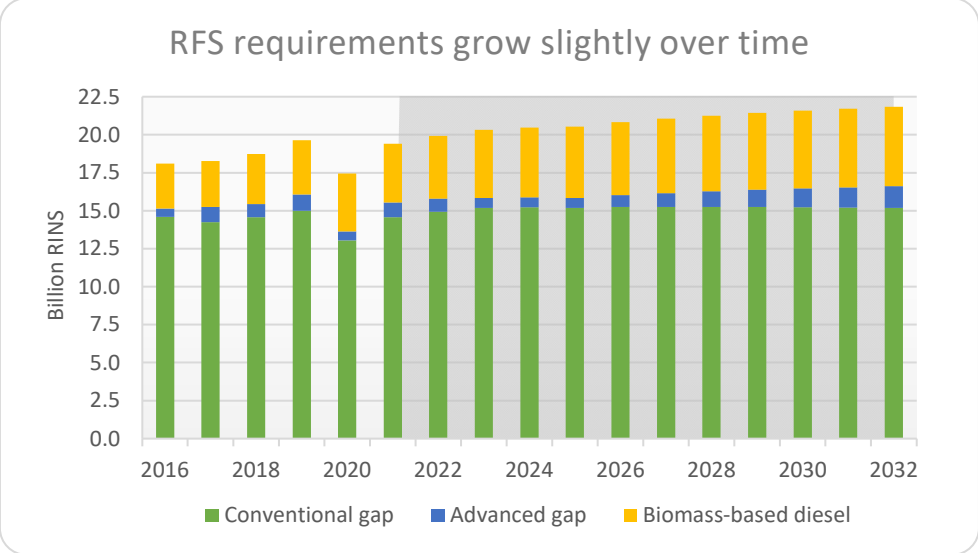

Projected domestic RD production increases rapidly in the near term and maintains modest growth beyond 2025. As ME biodiesel struggles to compete with renewable diesel, there is an initial downward trend to ME production before demand and policy incentives encourage a return to growth. Overall biomass-based diesel production is projected to rise from 3.1 billion gallons in 2022 to 4.1 billion gallons in 2032.

Projected use of soybean oil as a renewable fuel feedstock rises from 11.6 billion pounds in the 2022/23 marketing year to just over 16 billion pounds by the end of the period. This equates to around 2 billion gallons of biomass-based diesel. Distillers corn oil makes up an increasing share of feedstock use, reaching 16%, while the share of other fats and oils falls slightly from 43% in 2023 down to 41% by 2032.

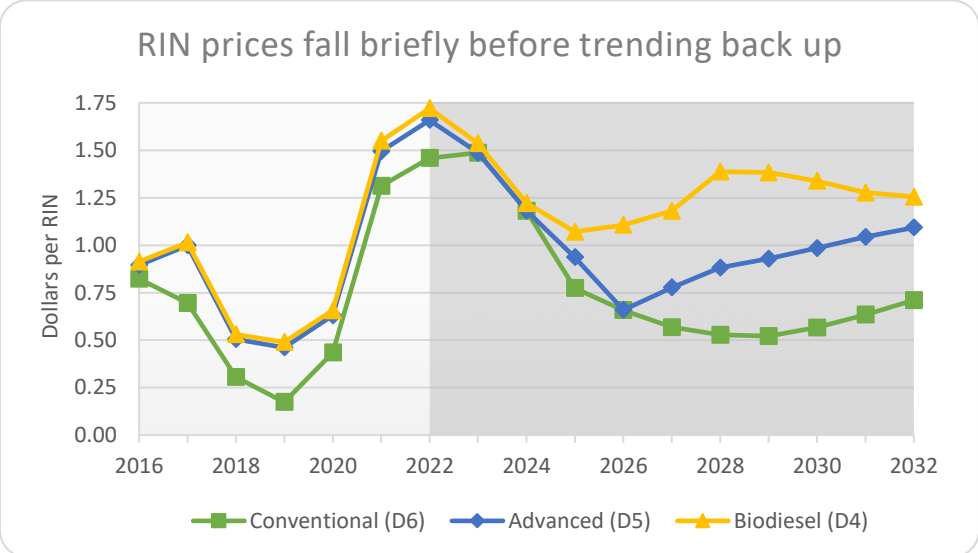



## Renewable fuel standard

EPA's proposed RFS requirements for 2023-25 are included in this outlook, and we assume a modest growth in requirements beyond 2025. As part of those requirements, the conventional gap was expanded to 15.25 billion gallons, and we keep it at that level for the projection period.




The prices for all RIN categories continued their upward trajectory in 2022 and reached a record high annual average. So far in 2023, these prices remain elevated averaging over $1.60/RIN for all types. Going forward, projected D6 (ethanol) RIN prices decline to around $0.50/RIN in 2029. D5 (advanced biofuel) RINs decline similarly until 2026 before rising again the following year while D4 (biodiesel) RINs begin rising again in 2026 after a couple years of decline.



# Ethanol supply and use

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Petroleum fuel prices** | | | | | (Dollars per barrel) | | | | | | |
| Petroleum, West Texas Interm. | 94.72 | 85.16 | 82.29 | 83.57 | 84.20 | 86.43 | 87.90 | 89.58 | 91.29 | 92.99 | 94.76 |
| Petroleum, refiners' acquisition | 95.07 | 86.32 | 83.38 | 85.12 | 86.24 | 88.65 | 89.99 | 91.58 | 93.40 | 95.25 | 97.13 |
| | | | | | (Dollars per gallon) | | | | | | |
| Unleaded gasoline, FOB Omaha | 3.17 | 2.88 | 2.63 | 2.65 | 2.65 | 2.73 | 2.78 | 2.83 | 2.89 | 2.96 | 3.02 |
| Unleaded gasoline, retail | 4.09 | 3.58 | 3.30 | 3.30 | 3.30 | 3.37 | 3.42 | 3.48 | 3.55 | 3.63 | 3.71 |
| | | | | | (Million gallons) | | | | | | |
| **Motor gasoline use*** | 134,297 | 134,206 | 134,227 | 134,455 | 134,309 | 133,529 | 132,336 | 130,789 | 128,991 | 126,985 | 124,809 |
| **Ethanol supply and use** | | | | | | | | | | | |
| Production | 15,357 | 15,481 | 15,843 | 15,908 | 16,033 | 16,016 | 16,002 | 16,010 | 16,063 | 16,071 | 16,060 |
| From corn | 15,333 | 15,458 | 15,808 | 15,871 | 15,972 | 15,934 | 15,904 | 15,902 | 15,945 | 15,943 | 15,922 |
| Other conventional | 23 | 22 | 33 | 36 | 59 | 80 | 95 | 106 | 115 | 124 | 135 |
| Cellulosic | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 |
| Imports | 48 | 119 | 113 | 115 | 112 | 122 | 155 | 159 | 141 | 138 | 123 |
| Domestic disappearance | 14,050 | 13,866 | 13,982 | 14,000 | 14,175 | 14,051 | 13,955 | 13,863 | 13,799 | 13,716 | 13,633 |
| Exports | 1,375 | 1,739 | 1,975 | 2,024 | 1,970 | 2,087 | 2,203 | 2,306 | 2,405 | 2,492 | 2,549 |
| Ending stocks | 904 | 899 | 897 | 896 | 895 | 895 | 894 | 894 | 894 | 894 | 894 |
| **Ethanol prices** | | | | | (Dollars per gallon) | | | | | | |
| Conventional rack, Omaha | 2.61 | 2.13 | 1.75 | 1.60 | 1.63 | 1.59 | 1.54 | 1.49 | 1.45 | 1.42 | 1.40 |
| Other advanced rack | 2.81 | 2.13 | 1.75 | 1.76 | 1.63 | 1.80 | 1.90 | 1.90 | 1.87 | 1.83 | 1.78 |
| Effective retail | 2.08 | 1.33 | 1.24 | 1.47 | 1.61 | 1.66 | 1.65 | 1.62 | 1.54 | 1.46 | 1.37 |
| Ethanol/gasoline retail | 51% | 37% | 38% | 45% | 49% | 49% | 48% | 46% | 43% | 40% | 37% |
| **RIN values** | | | | | | | | | | | |
| Conventional ethanol | 1.46 | 1.49 | 1.18 | 0.77 | 0.66 | 0.57 | 0.53 | 0.52 | 0.57 | 0.63 | 0.71 |
| Advanced ethanol | 1.66 | 1.49 | 1.18 | 0.94 | 0.66 | 0.78 | 0.88 | 0.93 | 0.99 | 1.04 | 1.09 |

* Includes fuel ethanol

All projections are averages across 500 stochastic outcomes.

# Renewable fuel standard

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Applicable standard** | | | | | | | | | | | |
| Overall | 11.59% | 11.92% | 12.55% | 13.05% | 13.55% | 14.05% | 14.56% | 15.06% | 15.56% | 16.06% | 16.56% |
| Advanced biofuels | 3.16% | 3.33% | 3.80% | 4.28% | 4.43% | 4.58% | 4.73% | 4.88% | 5.03% | 5.18% | 5.33% |
| Cellulosic biofuel | 0.35% | 0.41% | 0.82% | 1.23% | 1.27% | 1.30% | 1.34% | 1.37% | 1.41% | 1.44% | 1.48% |
| Biomass-based diesel | 2.33% | 2.54% | 2.60% | 2.67% | 2.74% | 2.80% | 2.87% | 2.93% | 3.00% | 3.06% | 3.13% |
| **Applied standard** | | | | | (Million gallons) | | | | | | |
| Overall | 20,532 | 21,060 | 21,923 | 22,722 | 23,024 | 23,259 | 23,474 | 23,659 | 23,822 | 23,964 | 24,092 |
| Advanced biofuels | 5,598 | 5,883 | 6,695 | 7,536 | 7,786 | 8,013 | 8,226 | 8,419 | 8,595 | 8,758 | 8,906 |
| Cellulosic biofuel | 609 | 730 | 1,458 | 2,187 | 2,198 | 2,209 | 2,221 | 2,232 | 2,244 | 2,255 | 2,267 |
| Biomass-based diesel | 4,128 | 4,488 | 4,580 | 4,701 | 4,807 | 4,899 | 4,982 | 5,055 | 5,118 | 5,174 | 5,222 |
| Gaps: Conventional | 14,934 | 15,177 | 15,229 | 15,186 | 15,238 | 15,246 | 15,248 | 15,240 | 15,227 | 15,206 | 15,185 |
| Advanced | 862 | 666 | 656 | 648 | 781 | 905 | 1,023 | 1,132 | 1,234 | 1,329 | 1,418 |

All projections are averages across 500 stochastic outcomes.

# Biomass-based diesel sector

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Biomass-based diesel supply** | | | | | (Million gallons) | | | | | | |
| Production | 3,137 | 3,634 | 3,980 | 3,939 | 4,032 | 4,257 | 4,333 | 4,440 | 4,540 | 4,651 | 4,772 |
| From soybean oil | 1,365 | 1,564 | 1,738 | 1,789 | 1,813 | 1,867 | 1,900 | 1,938 | 1,971 | 2,007 | 2,046 |
| From corn oil | 397 | 505 | 595 | 606 | 644 | 678 | 694 | 712 | 728 | 743 | 755 |
| From other fats and oils | 1,376 | 1,565 | 1,647 | 1,544 | 1,575 | 1,712 | 1,739 | 1,789 | 1,842 | 1,902 | 1,972 |
| From cellulosic diesel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Renewable diesel | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Net imports | 134 | 220 | 216 | 219 | 199 | 171 | 150 | 138 | 127 | 113 | 105 |
| **Biomass-based diesel use** | | | | | | | | | | | |
| Domestic disappearance | 3,327 | 3,830 | 4,182 | 4,152 | 4,227 | 4,424 | 4,480 | 4,576 | 4,666 | 4,762 | 4,876 |
| Ending stocks | 120 | 143 | 157 | 164 | 167 | 171 | 173 | 174 | 175 | 177 | 179 |
| **Fuel prices and tax credit** | | | | | (Dollars per gallon) | | | | | | |
| Biodiesel, rack | 6.62 | 5.49 | 5.12 | 4.99 | 4.99 | 5.05 | 5.08 | 5.14 | 5.20 | 5.22 | 5.29 |
| #2 diesel, refiner sales | 3.58 | 3.15 | 2.89 | 2.67 | 2.66 | 2.74 | 2.79 | 2.84 | 2.91 | 2.97 | 3.03 |
| #2 diesel, retail | 5.00 | 4.44 | 3.92 | 3.68 | 3.69 | 3.78 | 3.86 | 3.92 | 3.98 | 4.05 | 4.12 |
| Biodiesel tax credit | 1.00 | 1.00 | 1.00 | 0.60 | 0.60 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **RIN values** | | | | | | | | | | | |
| Per RIN gallon | 1.72 | 1.54 | 1.22 | 1.07 | 1.11 | 1.18 | 1.39 | 1.38 | 1.34 | 1.28 | 1.26 |
| Per physical gallon | 2.58 | 2.31 | 1.83 | 1.61 | 1.66 | 1.77 | 2.08 | 2.08 | 2.01 | 1.92 | 1.88 |

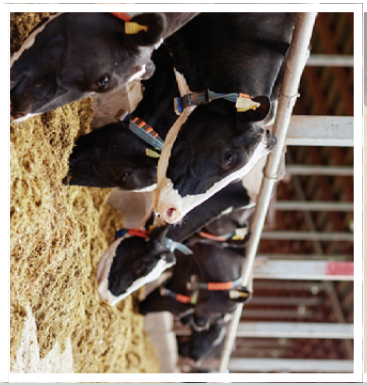
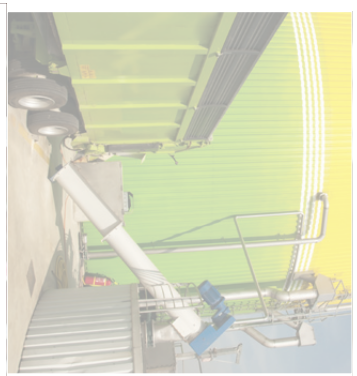
All projections are averages across 500 stochastic outcomes.

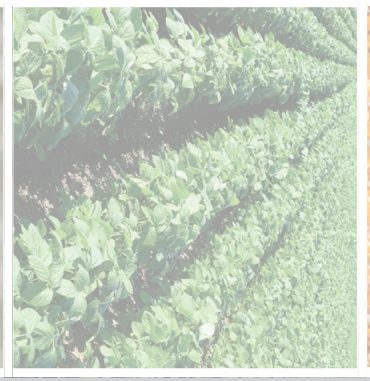
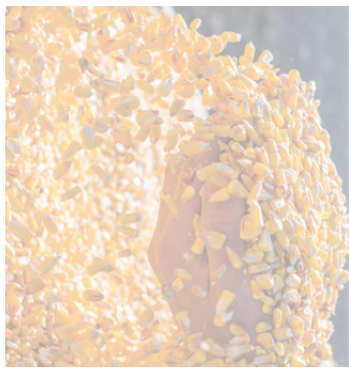
# Biofuel plant returns

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Biodiesel costs and returns** | | | | | (Dollars per gallon) | | | | | | |
| Biodiesel value | 6.62 | 5.49 | 5.12 | 4.99 | 4.99 | 5.05 | 5.08 | 5.14 | 5.20 | 5.22 | 5.29 |
| Glycerin value | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 |
| Soybean oil cost | -5.72 | -5.10 | -4.79 | -4.78 | -4.73 | -4.71 | -4.69 | -4.68 | -4.68 | -4.68 | -4.69 |
| Other operating costs | -0.64 | -0.65 | -0.65 | -0.66 | -0.67 | -0.68 | -0.68 | -0.69 | -0.70 | -0.71 | -0.71 |
| Net operating return | 0.44 | -0.09 | -0.16 | -0.28 | -0.24 | -0.16 | -0.12 | -0.06 | -0.01 | 0.01 | 0.06 |
| **Corn milling for ethanol** | | | | | (Million gallons) | | | | | | |
| Corn wet milled for ethanol | 386 | 481 | 544 | 570 | 587 | 594 | 594 | 592 | 590 | 587 | 585 |
| Corn dry milled for ethanol | 4,827 | 4,805 | 4,860 | 4,851 | 4,865 | 4,841 | 4,826 | 4,822 | 4,834 | 4,832 | 4,822 |
| (Share de-oiling DDGS) | 91% | 93% | 95% | 96% | 97% | 98% | 98% | 98% | 98% | 98% | 98% |
| **Dry mill ethanol costs, returns** | | | | | (Dollars per gallon) | | | | | | |
| Ethanol value | 2.61 | 2.13 | 1.75 | 1.60 | 1.63 | 1.59 | 1.54 | 1.49 | 1.45 | 1.42 | 1.40 |
| Distillers grains value | 0.68 | 0.66 | 0.55 | 0.51 | 0.49 | 0.48 | 0.47 | 0.47 | 0.46 | 0.45 | 0.45 |
| Corn oil value | 0.23 | 0.21 | 0.19 | 0.19 | 0.17 | 0.17 | 0.17 | 0.17 | 0.18 | 0.18 | 0.18 |
| Corn cost | -2.32 | -2.19 | -1.64 | -1.52 | -1.46 | -1.41 | -1.38 | -1.35 | -1.31 | -1.29 | -1.26 |
| Fuel and electricity cost | -0.26 | -0.22 | -0.21 | -0.18 | -0.23 | -0.25 | -0.25 | -0.23 | -0.22 | -0.22 | -0.23 |
| Other operating costs | -0.41 | -0.42 | -0.43 | -0.43 | -0.43 | -0.44 | -0.44 | -0.45 | -0.45 | -0.46 | -0.46 |
| Net operating return | 0.54 | 0.18 | 0.21 | 0.17 | 0.17 | 0.13 | 0.12 | 0.10 | 0.10 | 0.08 | 0.06 |

* Weighted by share of dry mills de-oiling DDGS

All projections are averages across 500 stochastic outcomes.

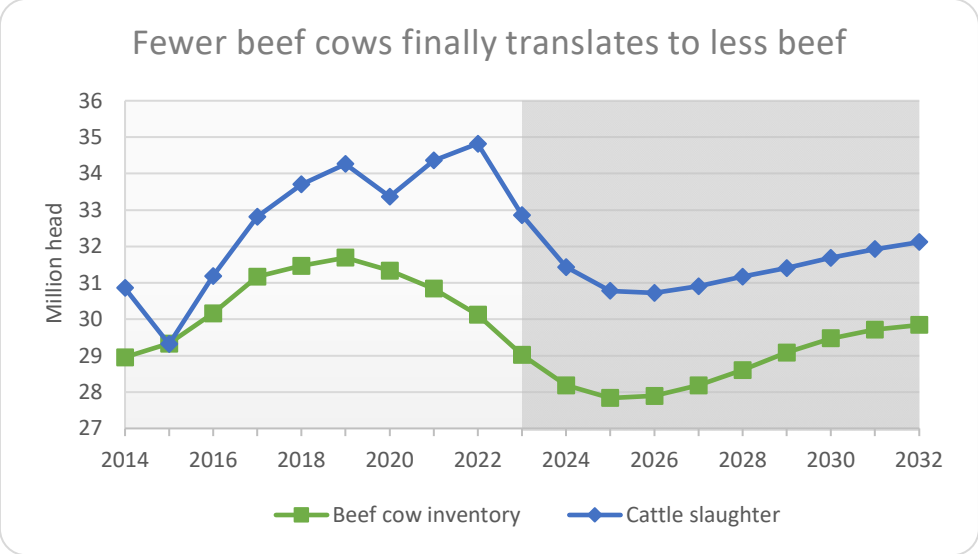




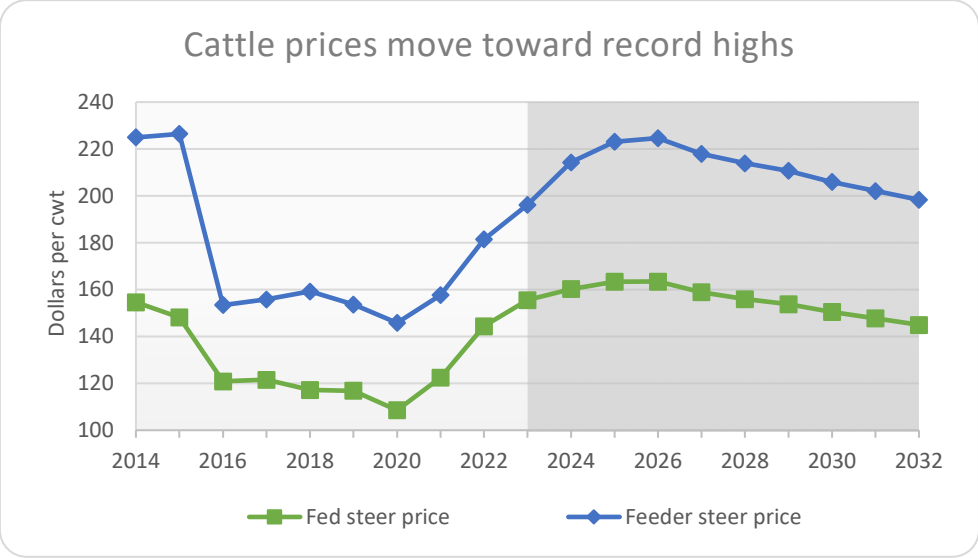
# Livestock & dairy

## Cattle and hogs

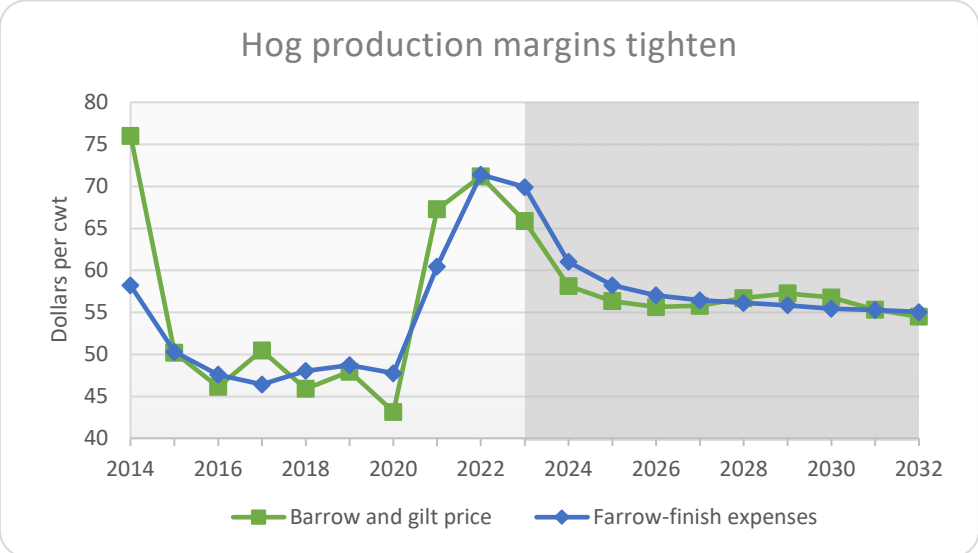
The beef cow herd continues to decline due to drought conditions in a large portion of important cow-calf production areas. Profitability levels are not yet strong enough to promote significant expansion in areas with sufficient forage and hay supplies. Large numbers of beef cows and heifers sent to slaughter have bolstered beef production since 2021 but cannot continue to make up for dwindling calf numbers. The extent to which drought continues this year will affect cow herd rebuilding and beef production.

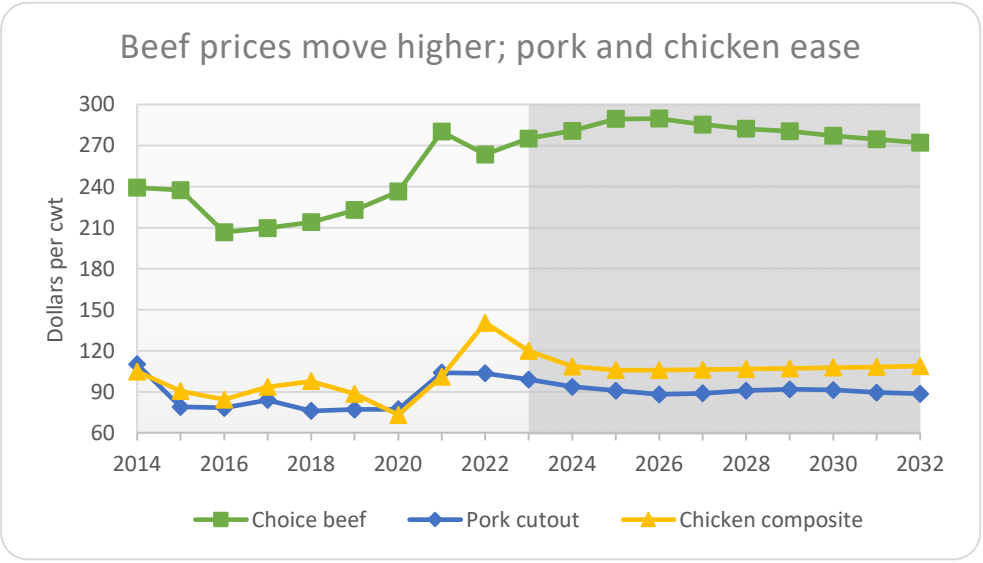



Fed steer prices could set a record high in 2023 as beef production declines, even if consumer demand for beef retreats from recently strong levels. Though feeder steer prices are also expected to increase, high feed costs limit the amount that feedlots are able to bid for feeder animals. Increasing cattle prices are likely to continue until the beef cow herd can be replenished following many years of decline.



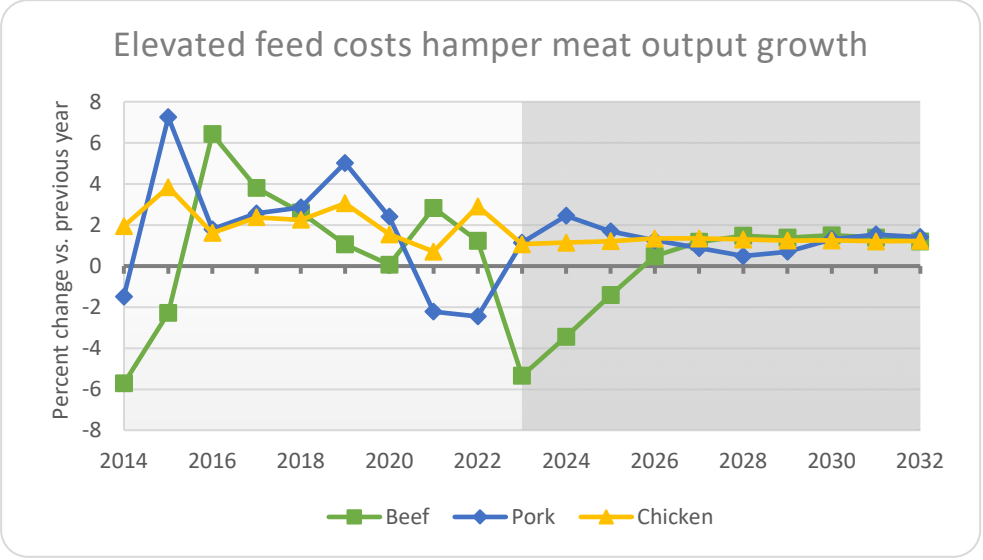

Hog producer profitability falls again in 2023 as hog prices decline at a faster rate than feed costs. Breeding herd numbers are likely to remain relatively stable for the next couple of years, leaving productivity growth as the biggest contributor to modest pork production increases. The growth in pork production per sow is expected to rebound toward historically average levels after declining in 2022.



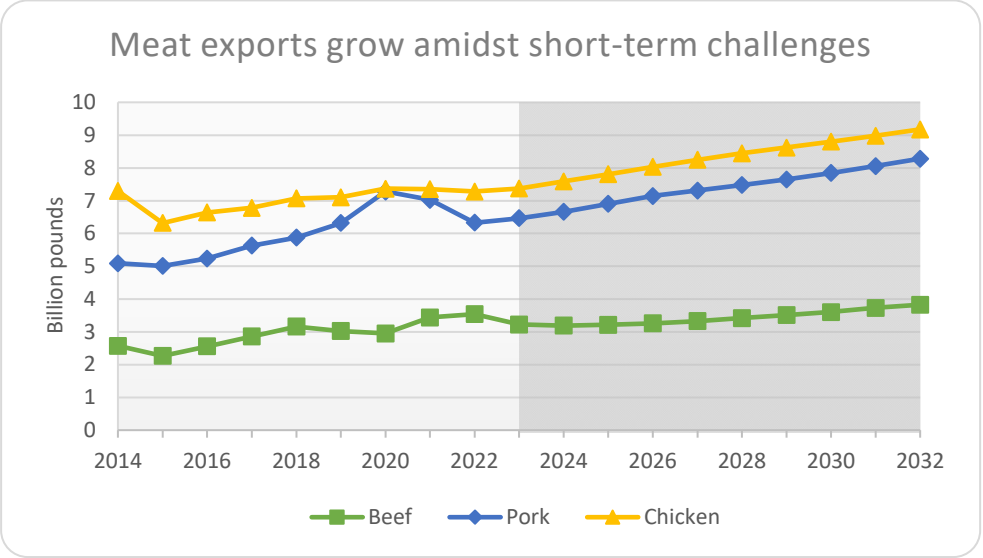



## Meat

Consumers have paid higher prices and purchased increasing amounts of meat in recent years. Per-capita meat availability in 2022 saw its eighth consecutive year of growth. That year also yielded record high wholesale prices for chicken and turkey, the second highest choice boxed beef price and the third highest pork cutout price. As meat demand has weakened in recent months, wholesale pork and poultry prices are expected to decline this year, while beef prices increase due to tighter supply.



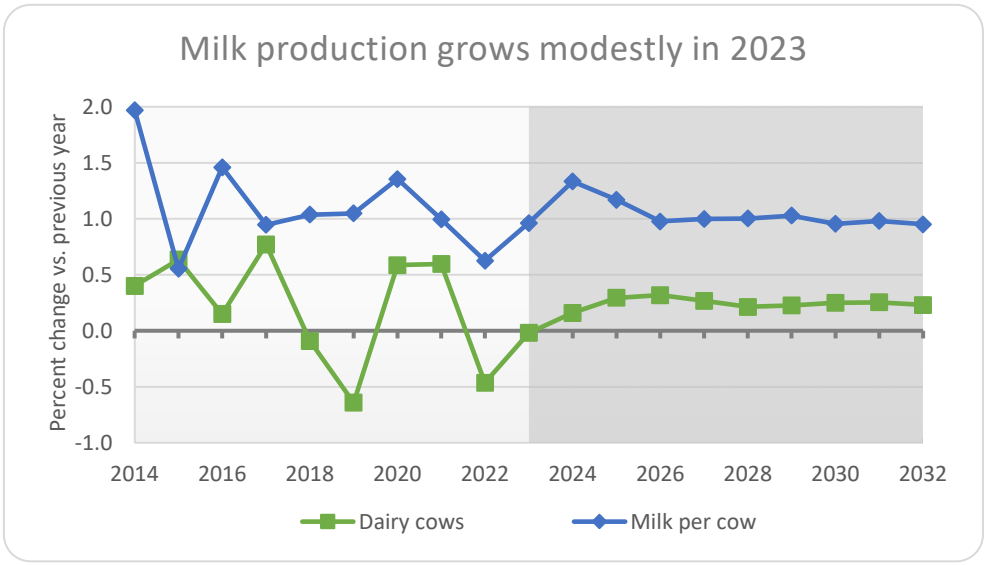

Total meat production is projected to grow at a much slower rate for the next few years as feed costs remain elevated. Beef production declines through 2025 given the multi-year decline in beef cow inventory. Less meat availability per U.S. resident keeps retail prices at or near record levels for many meat products.



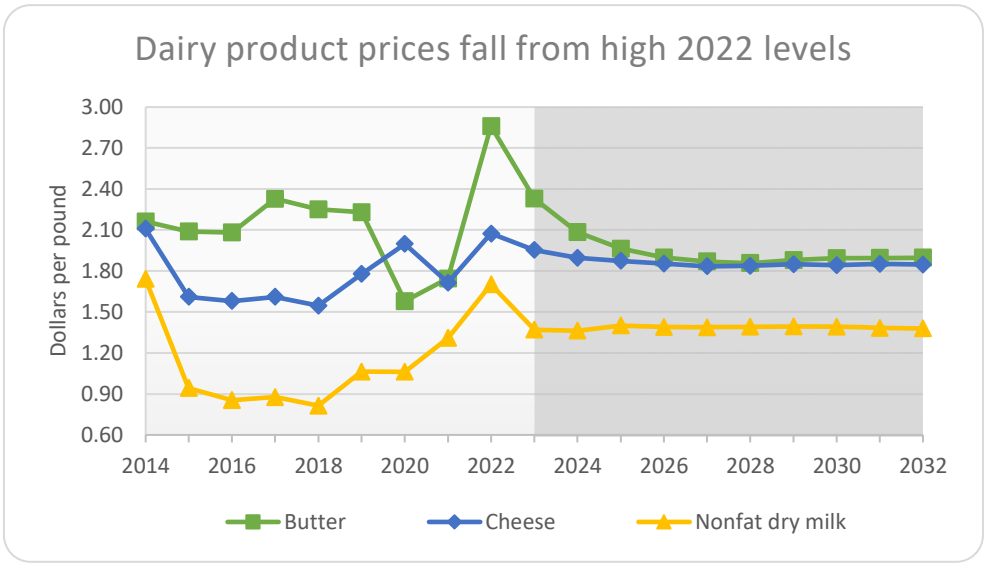

The volume of U.S. meat exports declined in 2022 for the first time since 2015. Export volumes have struggled due to China's recovery from African Swine Fever, a stronger U.S. dollar, and pandemic-related challenges to consumers in key markets. However, the total value of meat exports was at a record high. Export volumes continue to be challenged by many of these factors and weaker meat production growth in the years to come.

## Dairy

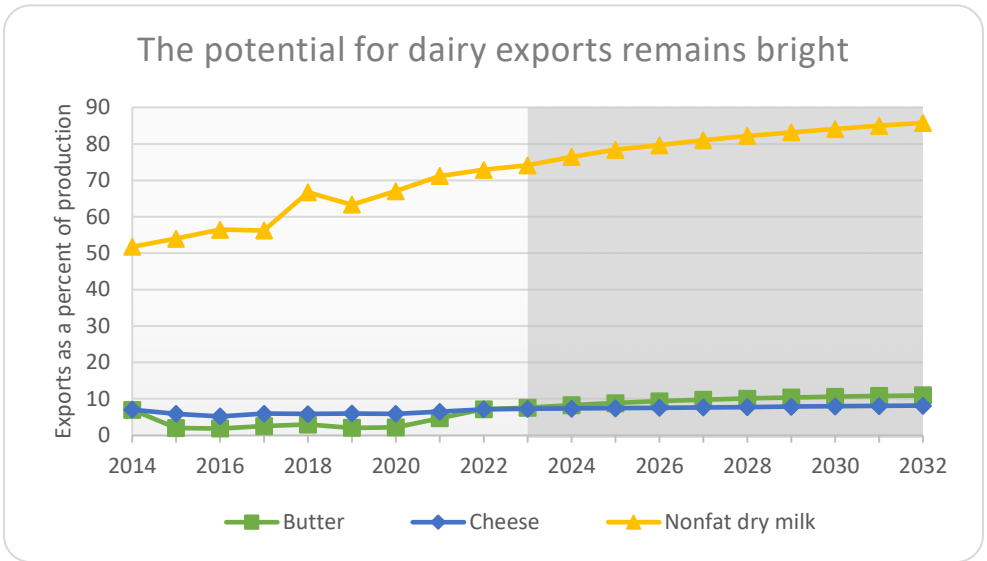
Monthly dairy cow numbers are largely unchanged since March 2022 despite record-high milk prices last spring. High input costs are pressuring margins and keeping producers cautious about expanding the milking herd. Last year, leap-year adjusted milk production per cow grew at the slowest rate since 2015. Modest productivity growth is projected for this year, leading to a milk production increase of just less than 1%.




Even with below-average milk production growth, dairy product prices should ease in 2023 as consumer demand weakens. Though prices decline from relatively high levels in 2022, they remain above 2010-19 average levels. Cheese prices decline less than butter and nonfat dry milk, bringing Class III and Class IV milk prices into close alignment following large gaps between these two prices in 2020 and 2022.




The value of U.S. dairy product exports in 2022 was 47% higher than just two years prior. There is further growth potential in the years to come as other large dairy exporting nations encounter increasing environmental regulations and other challenges. Though exports of butter and cheese make up a relatively small percentage of production, projected increases in exports provide new demand for industry growth.



# Cattle sector

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Million head) | | | | | | |
| Beef cows (Jan. 1) | 30.1 | 29.0 | 28.2 | 27.8 | 27.9 | 28.2 | 28.6 | 29.1 | 29.5 | 29.7 | 29.8 |
| Dairy cows (Jan. 1) | 9.4 | 9.4 | 9.4 | 9.4 | 9.5 | 9.5 | 9.5 | 9.5 | 9.6 | 9.6 | 9.6 |
| Cattle and calves (Jan. 1) | 91.9 | 89.1 | 87.5 | 87.0 | 87.1 | 87.4 | 87.8 | 88.4 | 89.1 | 89.8 | 90.4 |
| Cattle on feed (Jan. 1) | 14.7 | 14.3 | 13.6 | 13.3 | 13.2 | 13.2 | 13.3 | 13.4 | 13.5 | 13.6 | 13.7 |
| Calf crop | 34.6 | 33.5 | 33.0 | 32.8 | 33.0 | 33.3 | 33.7 | 34.1 | 34.4 | 34.6 | 34.7 |
| Calf death loss | 34.8 | 32.9 | 31.4 | 30.8 | 30.7 | 30.9 | 31.2 | 31.4 | 31.7 | 31.9 | 32.1 |
| Cattle imports | 1.6 | 1.8 | 1.9 | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Cattle exports | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| **Prices** | | | | | (Dollars per hundredweight) | | | | | | |
| Total all grades, 5 Area Direct Steers | 144.40 | 155.51 | 160.21 | 163.37 | 163.42 | 158.88 | 155.96 | 153.77 | 150.43 | 147.69 | 144.92 |
| 600-650#, Oklahoma City Feeder Steers | 181.51 | 196.28 | 214.38 | 223.14 | 224.72 | 217.98 | 213.97 | 210.73 | 205.96 | 202.13 | 198.36 |
| Utility cows, Sioux Falls | 76.07 | 82.84 | 87.49 | 90.91 | 91.20 | 87.50 | 84.82 | 82.63 | 79.68 | 77.26 | 74.89 |
| **Cow-calf returns** | | | | | (Dollars per cow) | | | | | | |
| Receipts | 897.42 | 961.60 | 1,034.39 | 1,065.96 | 1,063.28 | 1,032.95 | 1,013.07 | 994.52 | 972.78 | 952.78 | 933.96 |
| Feed expenses | 500.14 | 492.60 | 454.79 | 437.68 | 431.62 | 431.47 | 436.65 | 443.77 | 450.86 | 458.08 | 464.45 |
| Non-feed expenses | 292.72 | 329.82 | 338.19 | 330.43 | 329.36 | 330.46 | 333.58 | 336.88 | 339.39 | 342.70 | 346.32 |
| Net returns | 104.55 | 139.18 | 241.41 | 297.85 | 302.30 | 271.03 | 242.84 | 213.87 | 182.53 | 152.00 | 123.18 |

All projections are averages across 500 stochastic outcomes.

# Hog sector

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Million head) | | | | | | |
| Breeding herd (Dec. 1*) | 6.13 | 6.15 | 6.15 | 6.14 | 6.13 | 6.08 | 6.01 | 5.96 | 5.96 | 5.97 | 5.97 |
| Market hogs (Dec. 1*) | 68.3 | 67.0 | 68.7 | 69.5 | 70.0 | 70.4 | 70.4 | 70.3 | 70.6 | 71.3 | 71.9 |
| Sows farrowed | 11.90 | 12.04 | 12.08 | 12.10 | 12.08 | 11.99 | 11.89 | 11.86 | 11.89 | 11.93 | 11.94 |
| Pig crop | 131.8 | 134.7 | 136.5 | 138.1 | 139.2 | 139.4 | 139.5 | 140.3 | 142.0 | 143.7 | 145.1 |
| Barrow and gilt slaughter | 122.0 | 123.0 | 125.5 | 127.0 | 128.2 | 128.8 | 128.9 | 129.3 | 130.5 | 132.0 | 133.4 |
| Hog imports | 6.6 | 6.4 | 6.3 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 |
| Hog exports | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Price** | | | | | (Dollars per hundredweight) | | | | | | |
| Natl. base 51-52% lean equivalent Barrows and Gilts | 71.21 | 65.89 | 58.16 | 56.35 | 55.67 | 55.81 | 56.73 | 57.27 | 56.80 | 55.33 | 54.50 |
| **Farrow-finish returns** | | | | | | | | | | | |
| Receipts | 77.21 | 71.32 | 62.72 | 60.39 | 59.69 | 59.84 | 60.77 | 61.32 | 60.84 | 59.35 | 58.51 |
| Feed expenses | 46.07 | 44.89 | 36.97 | 34.56 | 33.31 | 32.47 | 31.93 | 31.43 | 30.81 | 30.41 | 29.90 |
| Non-feed expenses | 25.34 | 25.02 | 24.06 | 23.69 | 23.74 | 23.98 | 24.22 | 24.43 | 24.64 | 24.89 | 25.15 |
| Net returns | 5.80 | 1.40 | 1.69 | 2.15 | 2.65 | 3.39 | 4.62 | 5.46 | 5.39 | 4.05 | 3.46 |

* Preceding year

All projections are averages across 500 stochastic outcomes.

# Meat sector

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Beef** | | | | | (Million pounds) | | | | | | |
| Production | 28,360 | 26,845 | 25,921 | 25,555 | 25,682 | 25,984 | 26,369 | 26,734 | 27,136 | 27,513 | 27,842 |
| Imports | 3,376 | 3,450 | 3,509 | 3,548 | 3,543 | 3,520 | 3,484 | 3,459 | 3,439 | 3,409 | 3,398 |
| Domestic use | 28,170 | 27,126 | 26,282 | 25,903 | 25,958 | 26,163 | 26,421 | 26,668 | 26,952 | 27,175 | 27,396 |
| Exports | 3,542 | 3,226 | 3,189 | 3,217 | 3,257 | 3,325 | 3,417 | 3,511 | 3,606 | 3,732 | 3,830 |
| Ending stocks | 700 | 643 | 602 | 585 | 594 | 609 | 625 | 639 | 655 | 671 | 685 |
| **Pork** | | | | | | | | | | | |
| Production | 27,010 | 27,318 | 27,989 | 28,463 | 28,819 | 29,073 | 29,216 | 29,421 | 29,806 | 30,264 | 30,692 |
| Imports | 1,344 | 1,175 | 1,164 | 1,148 | 1,137 | 1,129 | 1,135 | 1,141 | 1,145 | 1,145 | 1,145 |
| Domestic use | 21,966 | 22,010 | 22,456 | 22,687 | 22,798 | 22,884 | 22,868 | 22,903 | 23,086 | 23,331 | 23,537 |
| Exports | 6,334 | 6,466 | 6,662 | 6,905 | 7,142 | 7,308 | 7,478 | 7,651 | 7,849 | 8,060 | 8,283 |
| Ending stocks | 500 | 516 | 552 | 571 | 586 | 596 | 601 | 608 | 623 | 641 | 658 |
| **Broiler** | | | | | | | | | | | |
| Production | 45,714 | 46,199 | 46,729 | 47,294 | 47,931 | 48,577 | 49,207 | 49,820 | 50,441 | 51,050 | 51,675 |
| Domestic use | 38,466 | 39,022 | 39,289 | 39,642 | 40,056 | 40,490 | 40,920 | 41,360 | 41,803 | 42,231 | 42,665 |
| Exports | 7,282 | 7,372 | 7,590 | 7,810 | 8,033 | 8,247 | 8,449 | 8,624 | 8,803 | 8,983 | 9,175 |
| Ending stocks | 850 | 835 | 849 | 856 | 864 | 871 | 877 | 882 | 888 | 893 | 899 |
| **Turkey** | | | | | | | | | | | |
| Production | 5,222 | 5,494 | 5,683 | 5,750 | 5,801 | 5,843 | 5,872 | 5,894 | 5,912 | 5,926 | 5,939 |
| Domestic use | 4,906 | 5,169 | 5,293 | 5,327 | 5,356 | 5,384 | 5,407 | 5,424 | 5,439 | 5,449 | 5,458 |
| Exports | 405 | 408 | 436 | 462 | 483 | 497 | 505 | 511 | 515 | 519 | 523 |
| Ending stocks | 165 | 202 | 232 | 242 | 249 | 255 | 260 | 264 | 267 | 270 | 273 |
| **Wholesale prices** | | | | | (Dollars per hundredweight) | | | | | | |
| Boxed beef cutout | 263.53 | 275.21 | 280.80 | 289.53 | 289.73 | 285.44 | 282.35 | 280.56 | 277.15 | 274.61 | 272.04 |
| Pork cutout value | 103.61 | 99.11 | 93.71 | 90.86 | 88.11 | 88.89 | 90.90 | 91.80 | 91.41 | 89.54 | 88.59 |
| | | | | | (Cents per pound) | | | | | | |
| National wholesale broiler | 140.50 | 119.95 | 108.55 | 105.94 | 105.91 | 106.31 | 106.64 | 107.17 | 107.80 | 108.26 | 108.85 |
| National wholesale turkey hens | 154.50 | 137.59 | 119.83 | 117.24 | 117.47 | 117.85 | 118.05 | 118.58 | 118.88 | 119.11 | 119.62 |
| **Retail prices** | | | | | (Dollars per pound) | | | | | | |
| Beef | 7.59 | 7.77 | 7.87 | 8.02 | 8.05 | 8.00 | 7.93 | 7.90 | 7.85 | 7.82 | 7.79 |
| Pork | 4.90 | 4.87 | 4.76 | 4.67 | 4.64 | 4.69 | 4.77 | 4.84 | 4.83 | 4.80 | 4.78 |
| Broiler | 2.43 | 2.40 | 2.32 | 2.28 | 2.29 | 2.30 | 2.33 | 2.36 | 2.39 | 2.42 | 2.45 |
| **Per-capita consumption** | | | | | (Pounds) | | | | | | |
| Beef | 59.2 | 56.8 | 54.7 | 53.7 | 53.5 | 53.7 | 54.0 | 54.2 | 54.5 | 54.7 | 54.9 |
| Pork | 51.2 | 51.1 | 51.9 | 52.1 | 52.1 | 52.1 | 51.8 | 51.6 | 51.8 | 52.1 | 52.3 |
| Broiler | 99.2 | 100.2 | 100.4 | 100.8 | 101.4 | 102.0 | 102.5 | 103.1 | 103.7 | 104.3 | 104.9 |
| Turkey | 14.7 | 15.5 | 15.8 | 15.8 | 15.8 | 15.8 | 15.8 | 15.7 | 15.7 | 15.7 | 15.6 |
| Total | 224.3 | 223.5 | 222.8 | 222.4 | 222.8 | 223.5 | 224.0 | 224.7 | 225.7 | 226.7 | 227.6 |

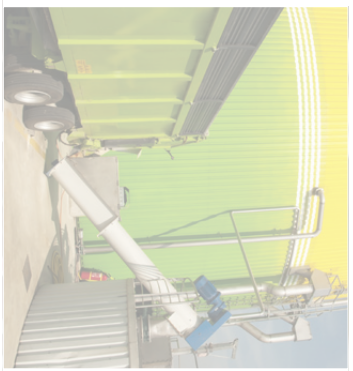
All projections are averages across 500 stochastic outcomes.

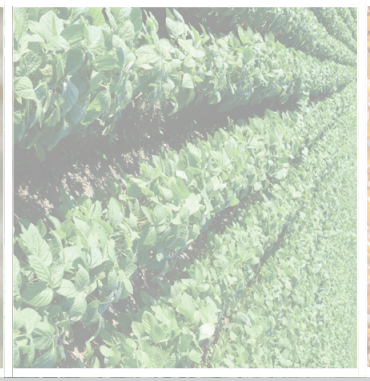
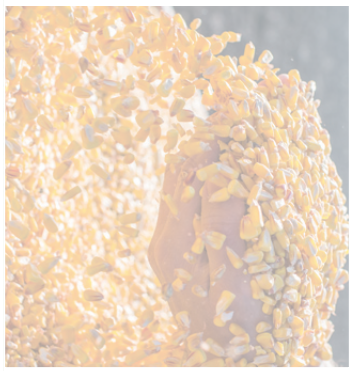
# Dairy sector

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Milk supply** | | | | | | | | | | | |
| Dairy cows (thousand head) | 9,404 | 9,403 | 9,418 | 9,445 | 9,476 | 9,501 | 9,521 | 9,543 | 9,567 | 9,591 | 9,613 |
| California | 1,723 | 1,726 | 1,722 | 1,719 | 1,718 | 1,715 | 1,712 | 1,710 | 1,709 | 1,709 | 1,710 |
| Wisconsin | 1,272 | 1,272 | 1,274 | 1,274 | 1,274 | 1,273 | 1,271 | 1,270 | 1,269 | 1,267 | 1,266 |
| New York | 624 | 621 | 621 | 620 | 619 | 618 | 617 | 616 | 615 | 615 | 614 |
| Idaho | 656 | 662 | 670 | 680 | 691 | 701 | 710 | 719 | 728 | 735 | 742 |
| Pennsylvania | 468 | 463 | 459 | 455 | 452 | 448 | 445 | 441 | 438 | 435 | 432 |
| Minnesota | 453 | 447 | 444 | 442 | 439 | 437 | 434 | 431 | 429 | 427 | 425 |
| Texas | 646 | 666 | 682 | 696 | 709 | 721 | 731 | 740 | 749 | 756 | 763 |
| Michigan | 428 | 428 | 432 | 436 | 439 | 441 | 443 | 445 | 447 | 449 | 450 |
| New Mexico | 288 | 276 | 271 | 270 | 270 | 269 | 269 | 268 | 268 | 268 | 269 |
| Ohio | 250 | 246 | 243 | 242 | 241 | 240 | 238 | 237 | 236 | 234 | 233 |
| Rest of U.S. | 2,597 | 2,596 | 2,601 | 2,612 | 2,625 | 2,638 | 2,651 | 2,665 | 2,680 | 2,696 | 2,711 |
| Milk yield (lbs per cow) | 24,098 | 24,329 | 24,721 | 24,942 | 25,186 | 25,438 | 25,763 | 25,957 | 26,205 | 26,462 | 26,787 |
| Milk production (billion lbs) | 226.6 | 228.8 | 232.8 | 235.6 | 238.6 | 241.7 | 245.3 | 247.7 | 250.7 | 253.8 | 257.5 |
| **Minimum FMMO class prices** | | | | | (Dollars per hundredweight) | | | | | | |
| Class I mover | 23.66 | 20.02 | 19.15 | 18.96 | 18.63 | 18.46 | 18.45 | 18.59 | 18.57 | 18.58 | 18.55 |
| Class II | 25.27 | 20.03 | 18.93 | 18.74 | 18.38 | 18.23 | 18.21 | 18.33 | 18.36 | 18.31 | 18.29 |
| Class III | 21.96 | 19.27 | 18.64 | 18.45 | 18.17 | 17.95 | 17.97 | 18.12 | 18.06 | 18.13 | 18.08 |
| Class IV | 24.47 | 19.33 | 18.23 | 18.04 | 17.68 | 17.53 | 17.51 | 17.63 | 17.66 | 17.61 | 17.59 |
| **All milk price** | 25.55 | 21.62 | 20.77 | 20.57 | 20.25 | 20.07 | 20.07 | 20.21 | 20.19 | 20.21 | 20.17 |
| **Actual dairy prod. margin** | 10.73 | 7.85 | 9.08 | 9.61 | 9.79 | 9.87 | 9.98 | 10.19 | 10.26 | 10.31 | 10.33 |
| **Wholesale prices** | | | | | (Dollars per pound) | | | | | | |
| Butter, CME | 2.86 | 2.33 | 2.08 | 1.96 | 1.90 | 1.87 | 1.86 | 1.88 | 1.89 | 1.90 | 1.90 |
| Cheese, American, 40#, CME | 2.07 | 1.95 | 1.90 | 1.87 | 1.85 | 1.83 | 1.84 | 1.85 | 1.84 | 1.85 | 1.85 |
| Nonfat dry milk, AA | 1.70 | 1.37 | 1.36 | 1.40 | 1.39 | 1.39 | 1.39 | 1.39 | 1.39 | 1.38 | 1.38 |
| **Dairy product production** | | | | | (Million pounds) | | | | | | |
| American cheese | 5,551 | 5,615 | 5,723 | 5,810 | 5,906 | 6,000 | 6,109 | 6,192 | 6,284 | 6,382 | 6,491 |
| Other cheese | 8,406 | 8,530 | 8,717 | 8,854 | 8,996 | 9,135 | 9,293 | 9,416 | 9,549 | 9,691 | 9,856 |
| Butter | 2,054 | 2,095 | 2,165 | 2,210 | 2,260 | 2,309 | 2,369 | 2,393 | 2,439 | 2,483 | 2,543 |
| Nonfat dry milk | 2,491 | 2,510 | 2,655 | 2,758 | 2,879 | 2,972 | 3,045 | 3,105 | 3,168 | 3,235 | 3,300 |
| **Dairy product exports** | | | | | | | | | | | |
| American cheese | 261 | 277 | 288 | 298 | 309 | 319 | 331 | 342 | 353 | 364 | 375 |
| Other cheese | 731 | 746 | 773 | 793 | 816 | 837 | 861 | 883 | 906 | 929 | 952 |
| Butter | 148 | 158 | 179 | 195 | 212 | 226 | 238 | 248 | 258 | 268 | 279 |
| Nonfat dry milk | 1,816 | 1,860 | 2,029 | 2,163 | 2,293 | 2,409 | 2,503 | 2,583 | 2,664 | 2,748 | 2,830 |
| **Per-capita consumption** | | | | | (Pounds) | | | | | | |
| Butter | 6.0 | 6.1 | 6.2 | 6.3 | 6.4 | 6.4 | 6.5 | 6.6 | 6.6 | 6.7 | 6.8 |
| Nonfat dry milk | 2.0 | 1.9 | 1.9 | 1.8 | 1.7 | 1.6 | 1.6 | 1.5 | 1.4 | 1.4 | 1.3 |
| Total cheese | 39.9 | 40.2 | 40.7 | 41.1 | 41.5 | 41.9 | 42.3 | 42.7 | 43.0 | 43.4 | 43.9 |
| American | 16.0 | 16.0 | 16.2 | 16.4 | 16.5 | 16.7 | 16.9 | 17.0 | 17.2 | 17.3 | 17.5 |
| Other | 23.9 | 24.2 | 24.5 | 24.7 | 25.0 | 25.2 | 25.5 | 25.6 | 25.8 | 26.1 | 26.4 |
| Total fluid milk | 148.6 | 147.0 | 144.7 | 142.3 | 139.8 | 137.5 | 135.1 | 133.0 | 130.8 | 128.6 | 126.5 |

All projections are averages across 500 stochastic outcomes.



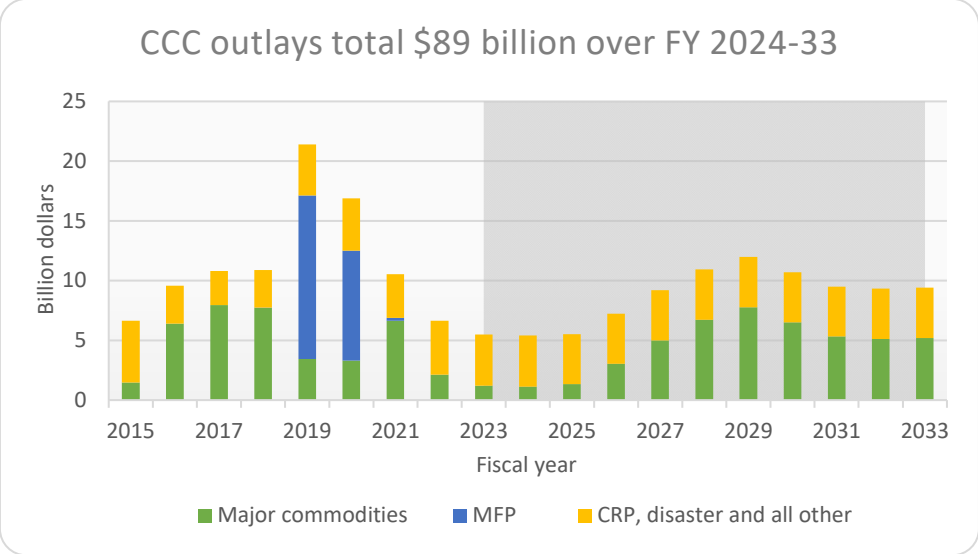


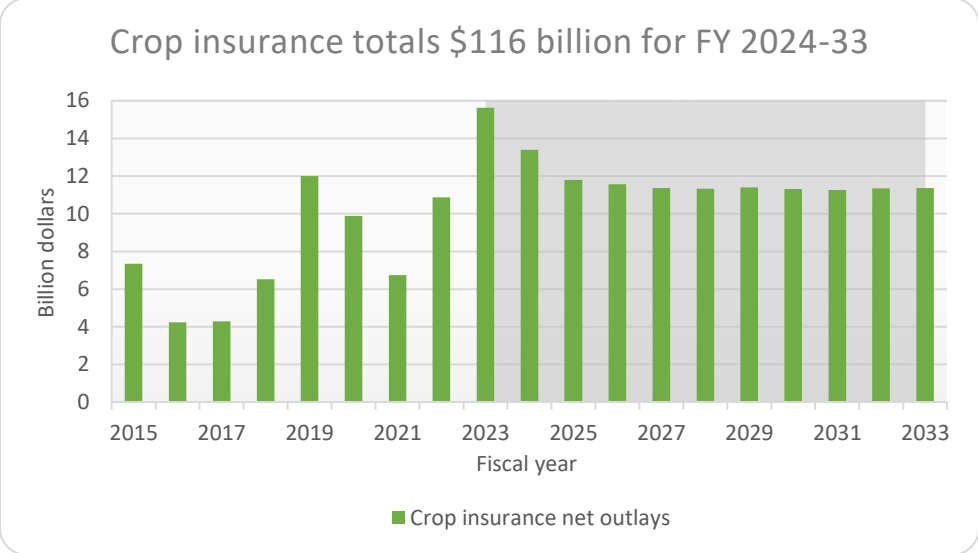
# Aggregate indicators

## Government costs

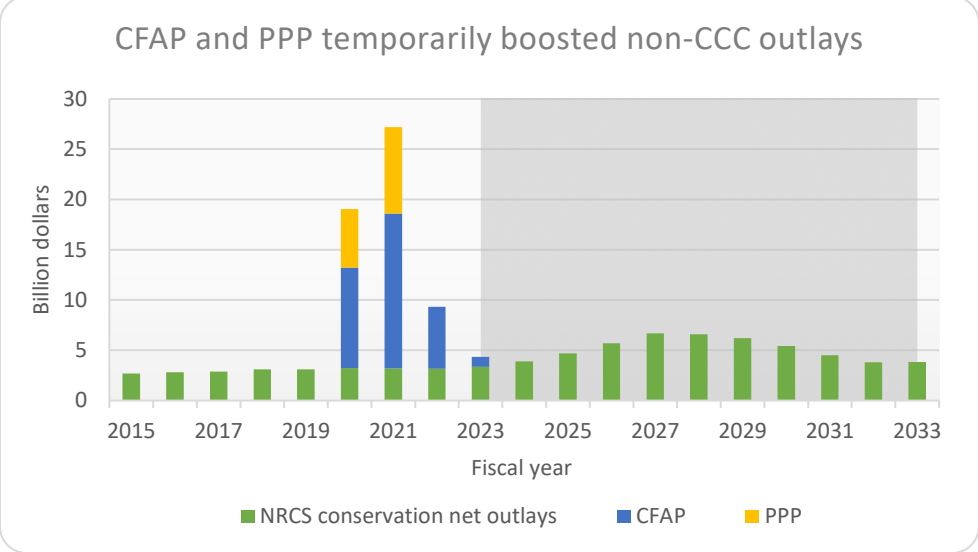
Net Commodity Credit Corporation (CCC) outlays peaked in FY 2019 because of $13.7 billion in market facilitation program (MFP) payments. Net CCC outlays drop to $5.5 billion in FY 2023, given modest ARC and PLC payments for crops harvested in 2022. Between FY 2024 and FY 2033, net CCC outlays total $89.2 billion, with major commodity programs accounting for $47 billion.

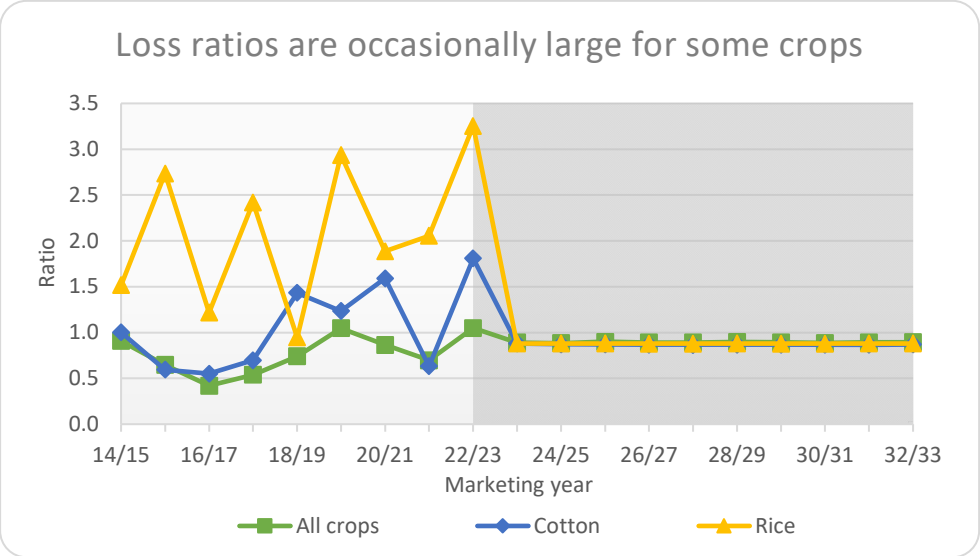



In FY 2023, higher market prices increased the value of crops insured and thus the value of premium subsidies and other program costs. When combined with drought-induced production declines, this spiked net outlays. Baseline assumptions of more normal variability following FY 2023, particularly in yields, result in a projected average loss ratio of about 0.9, although this is still subject to large swings due to weather and other factors. Program fiscal costs total $116 billion between FY 2024 and FY 2033.



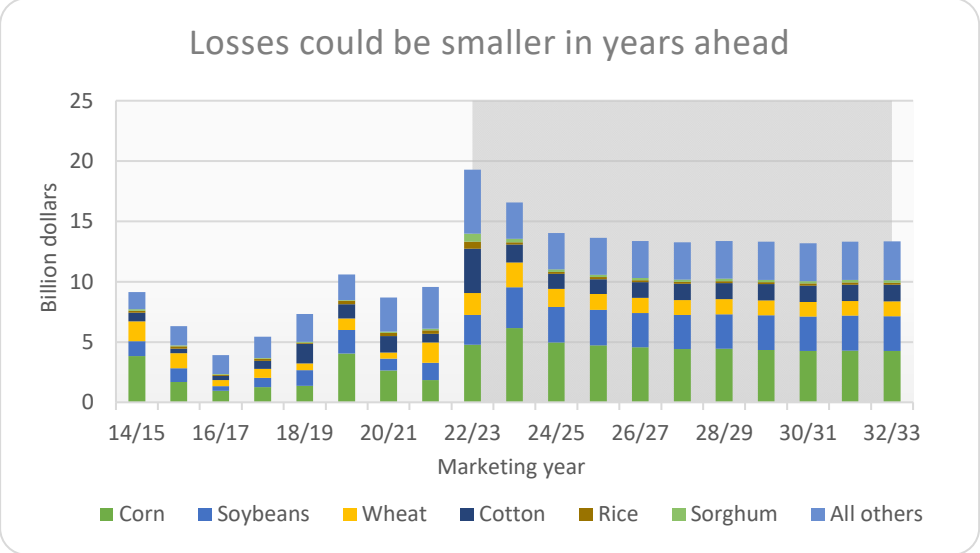

Coronavirus food assistance program (CFAP) is not treated as part of CCC outlays, and paycheck protection program (PPP) was not operated by USDA, but both provided substantial benefits to farmers. The Natural Resources Conservation Service (NRCS) operates several mandatory conservation programs. Spending on those programs total $51 billion over FY 2024 to 2033. The conservation reserve program (CRP) is managed by the Farm Service Agency, and its outlays are included in the CCC accounts.



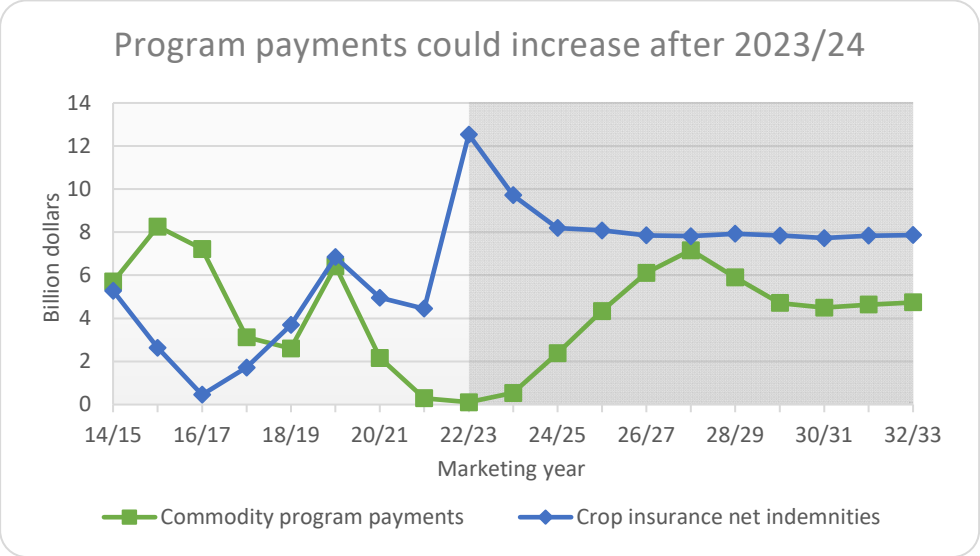



## Crop insurance

Larger losses across a few major crops led to higher total losses for the crop insurance program in 2022. The loss ratio (indemnity payments divided by total premiums, including both producer-paid and government subsidized premiums) was greater than 1.0 again in 2022. In the projection period, the distribution of yields, indemnities and premiums results in an average loss ratio of near 0.9, though individual years may be much lower or higher.




Higher prices and larger crop losses lead to total indemnities approaching $20 billion for the crop insurance program in 2022/23. Possible lower prices ahead could lead to lower total indemnities as the value of insured crops shrink. Indemnities in future years could be larger or smaller than shown here depending on prices, yields, occurrence of loss events and other factors. After 2023/24, total indemnities are projected to average $13.4 billion dollars.

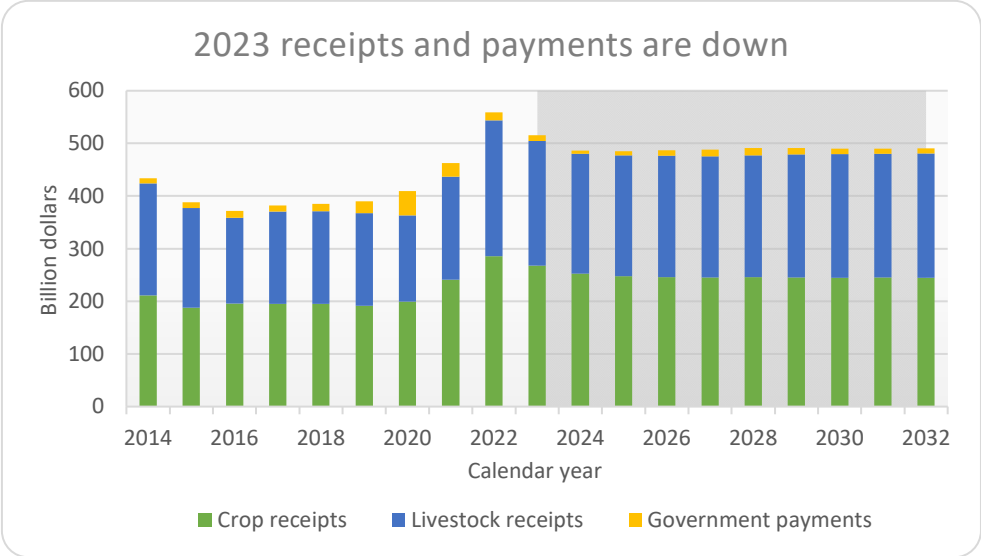



In some years commodity program payments can be similar in dollar value to crop insurance net indemnities. However, in recent years crop insurance net indemnities have exceeded commodity program payments as market prices and revenues generally stayed above the levels which trigger program payments.

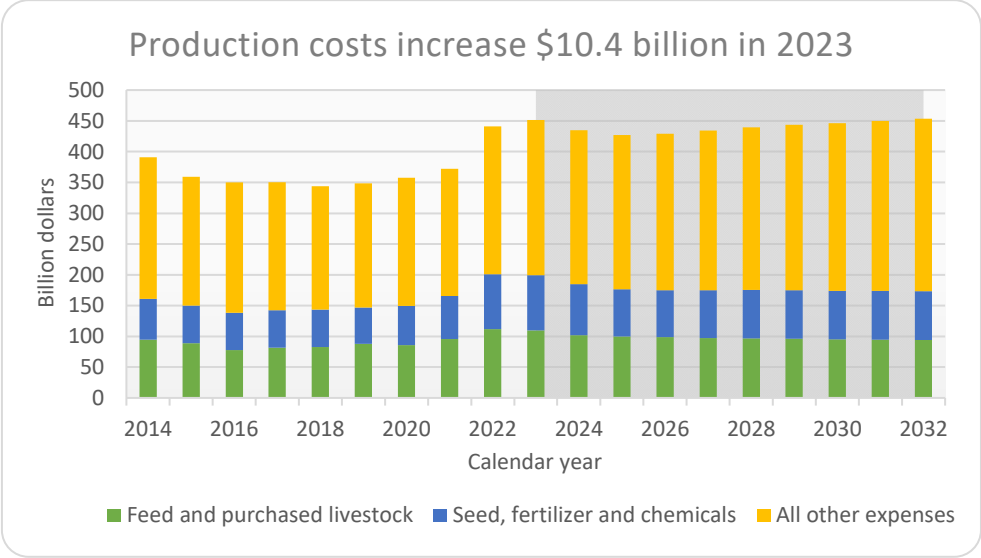
In the future, as market prices fall and policy trigger levels adjust higher, total ARC and PLC program payments could again approach similar levels as crop insurance net indemnities.

## Farm income, expenses

In 2022, farm cash receipts from both livestock sales and crop receipts increased, more than compensating for lower government payments, thereby increasing combined revenue. Crop and livestock receipts decrease by a total of $39 billion in 2023, and projected government payments decline by $5 billion in the assumed absence of new programs. In later years, receipts increase at a modest pace, while payments are relatively stable.

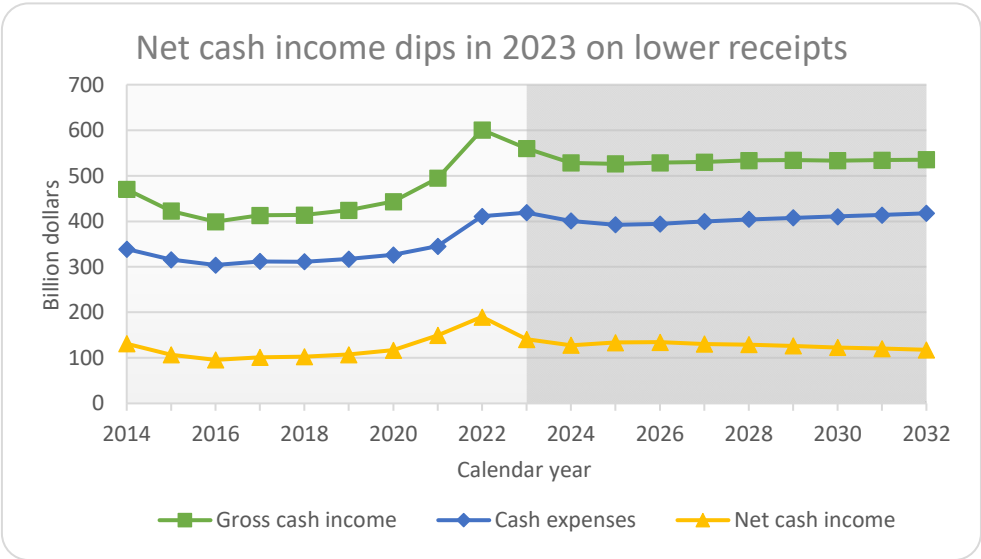


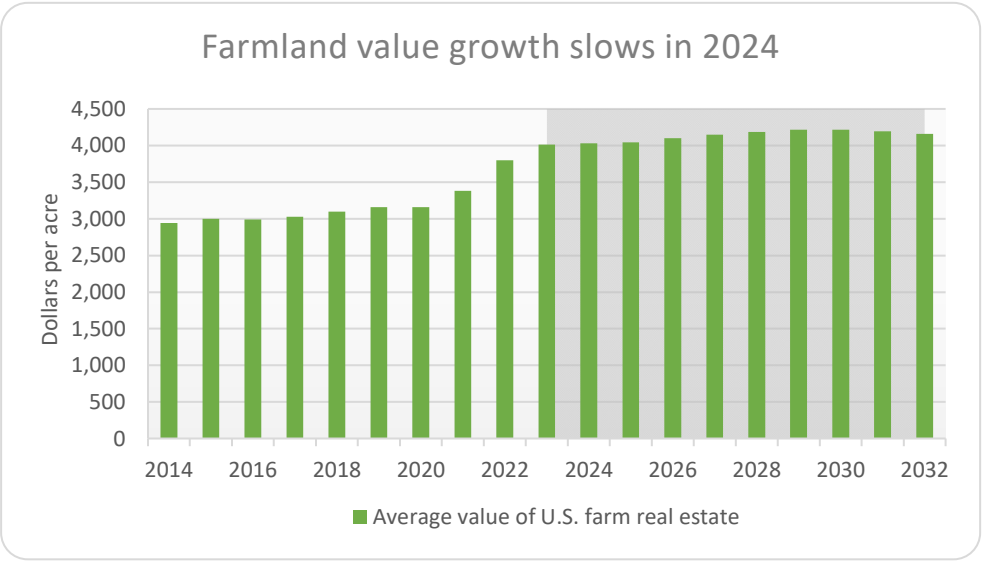

Farm production expenses rose in in 2022, largely because of higher feed, fertilizer and fuel prices. In 2023 total expenses increase by $10.4 billion (2%) with higher costs for interest, labor and seed more than offsetting a decline in feed, fertilizer and fuel expenses. Projected production expenses increase by an average of 0.2%/year from 2023 to 2032, reflecting increasing production expenses following a decline in costs in 2024 and 2025.




Net cash income for the farm sector increased in 2022, despite a decline in government payments as both crop receipts and livestock receipts increased. Net cash income declines in 2023, as the reduction in government payments and the increase in production expenses combine with a decrease in cash receipts. Net cash income drops again in 2024 due to a further decline in payments and receipts that more than compensate for a decline in expenses.

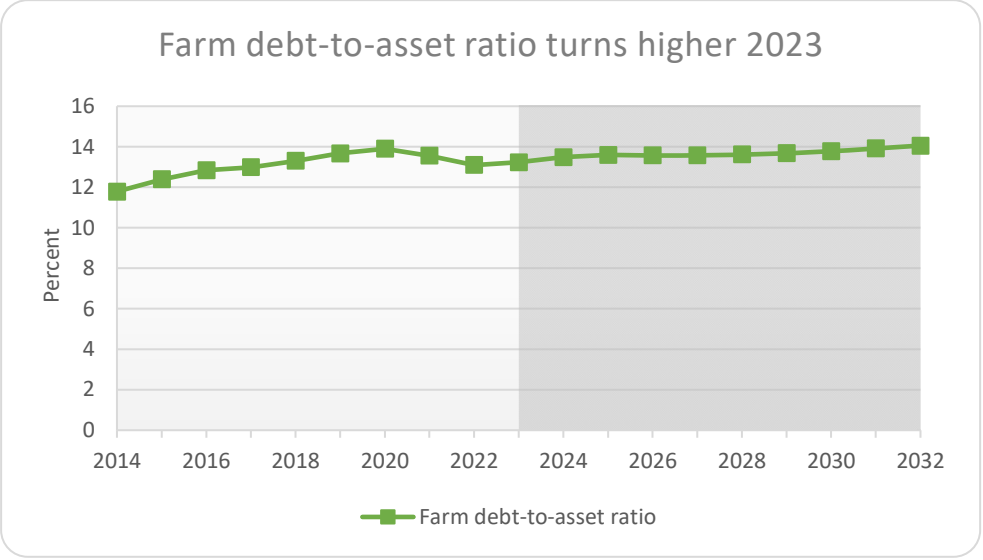
*Net farm income is an alternative measure that accounts for non-monetary income, depreciation and inventory value changes.*



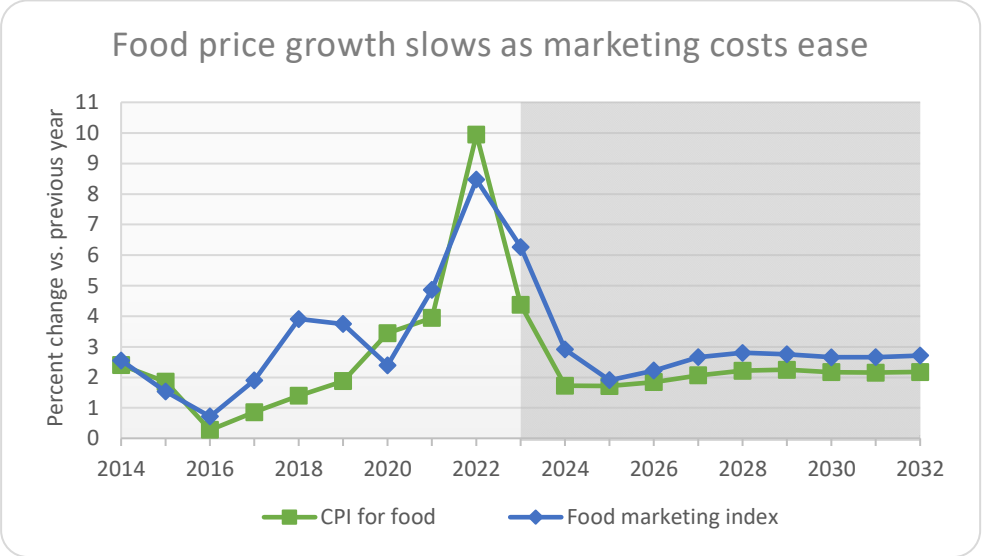



## Farm assets and debt

Reports suggest farmland values in many parts of the country continue to rise. Increases in farm income again in 2022 and historically strong farm income in 2023 support a 5% projected increase in farm real estate value in 2023. Declining farm income, combined with increases in interest rates and interest expense, limits upward support for farmland value moving forward.




The national average farm debt-to-asset ratio dropped to its lowest level in decades in 2012, but then increased in every year through 2020. The projected increase in farm asset values in 2021 and 2022 allowed the debt-to-asset ratio to stabilize, and actually dip slightly. Beginning again in 2023, greater farm debt causes the ratio to resume its increase, suggesting that long-term concerns about the status of farm finances could grow.




## Consumer food prices

Commodity prices combined with an index of producer prices for labor, fuel and other portions of the food supply chain correlates well with historical changes in the CPI for food. Though farm-level costs for most food commodities are projected to decline in 2023 and 2024, continued growth in the cost of marketing food will keep food inflation higher than what farm commodity price moves alone would suggest.

# Net government outlays

| Fiscal year | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Feed grains** | | | | | (Million dollars) | | | | | | |
| Corn | 15 | 38 | 60 | 1,104 | 2,285 | 3,319 | 4,032 | 3,098 | 2,319 | 2,099 | 2,139 |
| Sorghum | 4 | 7 | 21 | 67 | 125 | 149 | 150 | 129 | 103 | 112 | 126 |
| Barley | 9 | 1 | 5 | 31 | 61 | 78 | 97 | 109 | 104 | 112 | 126 |
| Oats | 1 | 0 | 0 | 1 | 2 | 4 | 4 | 4 | 3 | 3 | 3 |
| **Food grains** | | | | | | | | | | | |
| Wheat | 49 | 39 | 47 | 266 | 545 | 941 | 1,120 | 1,033 | 873 | 892 | 928 |
| Rice | 52 | 4 | 148 | 187 | 217 | 217 | 226 | 211 | 198 | 201 | 190 |
| **Oilseeds** | | | | | | | | | | | |
| Soybeans | 12 | 35 | 57 | 296 | 661 | 950 | 1,085 | 891 | 712 | 667 | 660 |
| Peanuts | 180 | 32 | 188 | 247 | 289 | 310 | 307 | 300 | 297 | 300 | 310 |
| Other oilseeds | 2 | 0 | 0 | 1 | 6 | 25 | 26 | 15 | 11 | 9 | 7 |
| **Other selected commodities** | | | | | | | | | | | |
| Upland cotton/seed cotton | 68 | 146 | 164 | 252 | 224 | 189 | 200 | 186 | 189 | 190 | 200 |
| Dairy | 795 | 810 | 634 | 595 | 585 | 537 | 518 | 527 | 525 | 544 | 516 |
| **Subtotal, selected commodities** | 1,188 | 1,112 | 1,324 | 3,048 | 4,999 | 6,721 | 7,765 | 6,504 | 5,332 | 5,128 | 5,205 |
| **Conservation reserve** | 1,896 | 1,884 | 1,871 | 1,876 | 1,891 | 1,889 | 1,882 | 1,866 | 1,848 | 1,876 | 1,876 |
| **Other CCC** | | | | | | | | | | | |
| Disaster payments, NAP | 814 | 785 | 766 | 755 | 761 | 761 | 761 | 761 | 761 | 761 | 761 |
| All other (incl. Charter Act use) | 1,607 | 1,621 | 1,567 | 1,556 | 1,557 | 1,561 | 1,563 | 1,561 | 1,562 | 1,563 | 1,565 |
| **Net CCC outlays** | 5,505 | 5,401 | 5,527 | 7,235 | 9,209 | 10,932 | 11,971 | 10,692 | 9,503 | 9,328 | 9,406 |
| **NRCS conservation** | 3,346 | 3,878 | 4,680 | 5,682 | 6,672 | 6,587 | 6,217 | 5,422 | 4,481 | 3,797 | 3,837 |
| **Crop insurance** | 15,625 | 13,389 | 11,802 | 11,560 | 11,357 | 11,330 | 11,400 | 11,316 | 11,249 | 11,336 | 11,367 |
| **Selected other non-CCC** | | | | | | | | | | | |
| Pandemic assistance | 983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other non-CCC emergency | 4,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total mandatory outlays** | 29,458 | 22,668 | 22,009 | 24,478 | 27,239 | 28,849 | 29,588 | 27,429 | 25,233 | 24,461 | 24,610 |

Note: "NRCS Conservation" denotes mandatory spending on conservation programs authorized by the 2002, 2008, 2014 and 2018 farm bills that is not included in reported CCC outlays. "NAP" is the Noninsured Crop Disaster Assistance Program.
Fiscal years begin on October 1 of the previous calendar year (FY 2023: Oct. 1, 2022-Sep. 30, 2023).
All projections are averages across 500 stochastic outcomes.

# Selected direct government payments

| Marketing year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (Million dollars) | | | | | |
| ARC payments | 98 | 113 | 1,365 | 2,928 | 4,272 | 5,086 | 3,607 | 2,620 | 2,347 | 2,289 | 2,211 |
| PLC payments | 11 | 397 | 928 | 1,338 | 1,769 | 2,005 | 2,206 | 2,006 | 2,036 | 2,220 | 2,420 |
| Marketing loans | 0 | 24 | 82 | 75 | 73 | 78 | 90 | 92 | 120 | 132 | 112 |
| **Total** | 1,092 | 535 | 2,374 | 4,341 | 6,114 | 7,168 | 5,903 | 4,717 | 4,504 | 4,642 | 4,742 |

Note: Includes selected payments for feed grains, food grains, oilseeds and cotton.

All projections are averages across 500 stochastic outcomes.

# Crop insurance

| Year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (Million dollars, crop year) | | | | | |
| **Total premiums** | 18,394 | 18,630 | 15,959 | 15,306 | 15,109 | 14,997 | 15,026 | 15,025 | 14,985 | 15,002 | 15,005 |
| Producer-paid premiums | 6,762 | 6,865 | 5,903 | 5,666 | 5,587 | 5,541 | 5,552 | 5,553 | 5,538 | 5,545 | 5,547 |
| Premium subsidies | 11,632 | 11,765 | 10,056 | 9,640 | 9,522 | 9,456 | 9,474 | 9,473 | 9,447 | 9,457 | 9,458 |
| **Total indemnities** | 19,301 | 16,585 | 14,094 | 13,747 | 13,443 | 13,355 | 13,483 | 13,397 | 13,266 | 13,383 | 13,416 |
| | | | | | | (Ratio of indemnities to total premiums) | | | | | |
| **Loss ratio** | 1.05 | 0.89 | 0.88 | 0.90 | 0.89 | 0.89 | 0.90 | 0.89 | 0.89 | 0.89 | 0.89 |
| | | | | | | (Million dollars, crop year) | | | | | |
| **Net indemnities** | 12,539 | 9,720 | 8,191 | 8,082 | 7,856 | 7,813 | 7,931 | 7,844 | 7,728 | 7,838 | 7,869 |
| Corn | 2,367 | 3,616 | 2,917 | 2,901 | 2,752 | 2,654 | 2,726 | 2,628 | 2,541 | 2,571 | 2,568 |
| Soybeans | 991 | 1,984 | 1,729 | 1,739 | 1,661 | 1,671 | 1,686 | 1,685 | 1,664 | 1,699 | 1,699 |
| Wheat | 1,222 | 1,225 | 898 | 805 | 771 | 774 | 776 | 764 | 737 | 752 | 753 |
| Upland cotton | 3,120 | 1,012 | 862 | 852 | 890 | 921 | 928 | 938 | 949 | 948 | 958 |
| All other | 4,839 | 1,883 | 1,784 | 1,785 | 1,782 | 1,792 | 1,814 | 1,830 | 1,838 | 1,870 | 1,891 |
| | | | | | | (Million dollars, fiscal year) | | | | | |
| **Net outlays** | 10,867 | 15,625 | 13,389 | 11,802 | 11,560 | 11,357 | 11,330 | 11,400 | 11,316 | 11,249 | 11,336 |

All projections are averages across 500 stochastic outcomes.

# Farm cash receipts

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Billion dollars) | | | | | | |
| Feed grains | 103.58 | 96.53 | 85.48 | 81.62 | 80.35 | 79.20 | 78.32 | 77.48 | 76.88 | 76.38 | 75.61 |
| Food grains | 17.89 | 16.72 | 15.52 | 14.87 | 14.32 | 14.15 | 14.02 | 13.94 | 13.85 | 13.87 | 13.80 |
| Oilseeds | 67.27 | 60.19 | 55.67 | 54.65 | 54.01 | 53.90 | 54.00 | 54.09 | 54.12 | 54.18 | 54.04 |
| Cotton | 8.53 | 7.16 | 7.08 | 7.29 | 7.77 | 8.09 | 8.19 | 8.19 | 8.19 | 8.17 | 8.14 |
| Sugar | 3.15 | 3.12 | 3.20 | 3.13 | 3.12 | 3.13 | 3.11 | 3.16 | 3.17 | 3.10 | 3.05 |
| Other crops | 85.32 | 83.90 | 85.49 | 86.24 | 86.55 | 86.73 | 88.03 | 88.47 | 88.73 | 89.49 | 90.27 |
| Cattle | 86.80 | 88.43 | 90.84 | 92.97 | 93.88 | 92.12 | 91.49 | 91.22 | 90.30 | 89.63 | 88.85 |
| Hogs | 29.38 | 27.96 | 25.27 | 24.88 | 24.88 | 25.17 | 25.70 | 26.12 | 26.24 | 25.96 | 25.94 |
| Dairy products | 57.73 | 49.12 | 47.95 | 48.07 | 47.91 | 48.07 | 48.79 | 49.60 | 50.14 | 50.82 | 51.46 |
| Poultry, eggs | 76.34 | 63.98 | 56.51 | 55.72 | 56.16 | 56.93 | 57.71 | 58.61 | 59.51 | 60.35 | 61.27 |
| Other livestock | 7.45 | 7.38 | 7.37 | 7.48 | 7.61 | 7.73 | 7.87 | 8.02 | 8.15 | 8.27 | 8.41 |
| **Total cash receipts** | 543.43 | 504.49 | 480.38 | 476.94 | 476.57 | 475.21 | 477.22 | 478.89 | 479.26 | 480.22 | 480.84 |

All projections are averages across 500 stochastic outcomes.

# Farm production expenses

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Billion dollars) | | | | | | |
| Feed | 76.59 | 72.34 | 62.48 | 59.00 | 57.61 | 57.01 | 56.77 | 56.60 | 56.45 | 56.43 | 56.22 |
| Purchased livestock | 35.42 | 37.17 | 39.70 | 41.04 | 41.39 | 40.39 | 39.90 | 39.57 | 38.94 | 38.43 | 37.89 |
| Seed | 21.98 | 23.42 | 24.36 | 24.78 | 24.94 | 24.99 | 25.04 | 25.11 | 25.18 | 25.27 | 25.38 |
| Fertilizer | 42.50 | 42.11 | 35.50 | 30.57 | 29.28 | 30.77 | 31.37 | 31.09 | 30.52 | 30.28 | 30.42 |
| Chemicals | 24.36 | 24.46 | 22.68 | 21.18 | 21.53 | 21.88 | 22.24 | 22.61 | 22.97 | 23.34 | 23.72 |
| Fuels and electricity | 27.14 | 26.45 | 22.69 | 22.34 | 22.75 | 23.41 | 24.00 | 24.46 | 24.93 | 25.52 | 26.17 |
| Interest | 27.64 | 33.57 | 35.53 | 35.51 | 35.90 | 36.53 | 37.08 | 37.50 | 37.83 | 38.10 | 38.30 |
| Contract and hired labor | 39.20 | 40.60 | 42.29 | 43.62 | 44.86 | 46.04 | 47.51 | 48.77 | 50.04 | 51.49 | 53.03 |
| Capital consumption | 27.26 | 29.11 | 30.01 | 30.52 | 30.96 | 31.37 | 31.74 | 32.07 | 32.33 | 32.50 | 32.59 |
| Rent to landlords | 19.83 | 20.80 | 21.05 | 20.76 | 20.83 | 21.05 | 21.24 | 21.38 | 21.36 | 21.22 | 21.04 |
| All other | 99.40 | 101.65 | 98.45 | 97.88 | 99.13 | 101.11 | 102.92 | 104.43 | 105.81 | 107.34 | 109.02 |
| **Total production expenses** | 441.32 | 451.68 | 434.74 | 427.19 | 429.16 | 434.54 | 439.80 | 443.58 | 446.36 | 449.91 | 453.79 |

All projections are averages across 500 stochastic outcomes.

# Farm income indicators

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Billion dollars) | | | | | | |
| **1. Farm receipts** | 585.42 | 549.50 | 522.65 | 518.50 | 518.24 | 517.23 | 519.83 | 522.01 | 522.83 | 524.47 | 525.78 |
| Crops | 285.73 | 267.63 | 252.45 | 247.81 | 246.12 | 245.20 | 245.67 | 245.33 | 244.93 | 245.18 | 244.91 |
| Livestock | 257.70 | 236.86 | 227.94 | 229.13 | 230.45 | 230.02 | 231.55 | 233.56 | 234.33 | 235.04 | 235.93 |
| Farm-related | 41.99 | 45.01 | 42.26 | 41.56 | 41.67 | 42.02 | 42.61 | 43.12 | 43.57 | 44.25 | 44.94 |
| **2. Government payments** | 15.61 | 10.40 | 5.83 | 7.91 | 10.47 | 12.84 | 13.82 | 12.27 | 10.59 | 9.76 | 9.48 |
| **3. Gross cash income** (1 + 2) | 601.03 | 559.90 | 528.47 | 526.40 | 528.71 | 530.07 | 533.65 | 534.28 | 533.42 | 534.23 | 535.26 |
| **4. Non-money income** | 23.52 | 24.03 | 23.47 | 22.91 | 22.62 | 22.43 | 22.27 | 22.10 | 21.87 | 21.63 | 21.40 |
| **5. Value of inventory** Change | -20.50 | -0.93 | -1.73 | -1.50 | -1.18 | -1.46 | -1.21 | -0.94 | -0.97 | -1.12 | -1.28 |
| **6. Gross farm income** (3 + 4 + 5) | 604.06 | 583.00 | 550.21 | 547.81 | 550.15 | 551.04 | 554.72 | 555.44 | 554.32 | 554.74 | 555.38 |
| **7. Cash expenses** | 411.12 | 419.32 | 400.85 | 392.68 | 394.34 | 399.43 | 404.38 | 407.86 | 410.42 | 413.85 | 417.68 |
| **8. Total expenses** | 441.32 | 451.68 | 434.74 | 427.19 | 429.16 | 434.54 | 439.80 | 443.58 | 446.36 | 449.91 | 453.79 |
| **9. Net cash income** (3 - 7) | 189.92 | 140.58 | 127.62 | 133.72 | 134.37 | 130.64 | 129.27 | 126.42 | 123.00 | 120.38 | 117.59 |
| **10. Realized net farm income** (3 + 4 - 8) | 183.24 | 132.26 | 117.20 | 122.12 | 122.16 | 117.96 | 116.13 | 112.80 | 108.93 | 105.95 | 102.87 |
| **11. Net farm income** (6 - 8) | 162.74 | 131.33 | 115.48 | 120.62 | 120.99 | 116.50 | 114.92 | 111.86 | 107.97 | 104.82 | 101.59 |
| Deflated (2023 $) | 168.66 | 131.33 | 112.93 | 115.57 | 111.85 | 103.92 | 98.91 | 92.90 | 86.52 | 81.05 | 75.79 |

All projections are averages across 500 stochastic outcomes.

# Land rental rates and real estate values

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rental rates** | | | | | (Dollars per acre) | | | | | | |
| Cropland | 148.00 | 157.97 | 160.24 | 157.90 | 158.63 | 160.66 | 162.55 | 163.93 | 163.93 | 162.90 | 161.46 |
| Pasture | 14.00 | 15.03 | 15.03 | 14.71 | 14.61 | 14.55 | 14.42 | 14.29 | 14.12 | 13.90 | 13.66 |
| **Value of farm real estate** | 3,800 | 4,011 | 4,028 | 4,042 | 4,097 | 4,148 | 4,187 | 4,216 | 4,217 | 4,194 | 4,161 |

All projections are averages across 500 stochastic outcomes.

# Land use for major crops and the conservation reserve

| Marketing year | 22/23 | 23/24 | 24/25 | 25/26 | 26/27 | 27/28 | 28/29 | 29/30 | 30/31 | 31/32 | 32/33 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Planted area** | | | | | (Million acres) | | | | | | |
| Corn | 88.58 | 92.25 | 92.86 | 92.50 | 92.14 | 90.83 | 90.02 | 89.42 | 88.79 | 88.32 | 87.86 |
| Soybeans | 87.45 | 87.22 | 87.16 | 87.39 | 87.25 | 87.94 | 88.19 | 88.36 | 88.54 | 88.59 | 88.67 |
| Wheat | 45.74 | 49.42 | 47.77 | 47.01 | 46.75 | 46.72 | 46.60 | 46.39 | 46.25 | 46.23 | 46.16 |
| Upland cotton | 13.58 | 10.52 | 11.04 | 11.31 | 11.59 | 11.71 | 11.73 | 11.74 | 11.74 | 11.71 | 11.68 |
| Sorghum | 6.33 | 6.18 | 6.01 | 6.08 | 6.12 | 6.15 | 6.15 | 6.15 | 6.15 | 6.15 | 6.16 |
| Barley | 2.95 | 2.83 | 3.04 | 2.85 | 2.77 | 2.71 | 2.67 | 2.65 | 2.61 | 2.58 | 2.55 |
| Oats | 2.58 | 2.51 | 2.65 | 2.73 | 2.81 | 2.87 | 2.91 | 2.95 | 2.98 | 3.01 | 3.04 |
| Rice | 2.22 | 2.55 | 2.55 | 2.58 | 2.57 | 2.56 | 2.56 | 2.57 | 2.59 | 2.61 | 2.61 |
| Canola | 2.21 | 2.11 | 2.15 | 2.26 | 2.30 | 2.33 | 2.36 | 2.39 | 2.42 | 2.45 | 2.48 |
| Sunflowers | 1.69 | 1.79 | 1.70 | 1.79 | 1.76 | 1.73 | 1.72 | 1.72 | 1.73 | 1.74 | 1.74 |
| Peanuts | 1.45 | 1.55 | 1.54 | 1.53 | 1.52 | 1.51 | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |
| Sugar beets | 1.16 | 1.17 | 1.19 | 1.20 | 1.20 | 1.21 | 1.21 | 1.21 | 1.21 | 1.20 | 1.20 |
| Sugar cane (harvested) | 0.94 | 0.95 | 0.97 | 0.99 | 0.99 | 1.00 | 1.01 | 1.02 | 1.02 | 1.02 | 1.03 |
| **13 crop planted area** | 256.88 | 261.04 | 260.64 | 260.23 | 259.77 | 259.24 | 258.63 | 258.07 | 257.54 | 257.11 | 256.67 |
| **Hay (harvested)** | 49.55 | 50.16 | 50.11 | 49.69 | 49.51 | 49.63 | 49.90 | 50.26 | 50.62 | 50.99 | 51.31 |
| **13 crops + hay** | 306.42 | 311.20 | 310.75 | 309.92 | 309.28 | 308.88 | 308.53 | 308.33 | 308.16 | 308.09 | 307.98 |
| **Conservation reserve program (CRP)** | 22.03 | 23.01 | 24.44 | 25.40 | 25.95 | 26.24 | 26.16 | 26.01 | 25.86 | 25.73 | 25.62 |
| **13 crops + hay + CRP** | 328.45 | 334.21 | 335.19 | 335.32 | 335.23 | 335.11 | 334.69 | 334.35 | 334.02 | 333.82 | 333.60 |
| **Double-crop soybeans** | 3.52 | 4.54 | 4.08 | 3.99 | 3.94 | 3.91 | 3.88 | 3.86 | 3.84 | 3.83 | 3.82 |
| **13 crops + hay + CRP - double-crop soybeans** | 324.94 | 329.67 | 331.11 | 331.32 | 331.29 | 331.20 | 330.81 | 330.49 | 330.18 | 329.99 | 329.78 |

All projections are averages across 500 stochastic outcomes.

# Balance sheet of the farm sector

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Billion dollars) | | | | | | |
| **Assets** | 3,848 | 4,008 | 4,001 | 4,005 | 4,049 | 4,091 | 4,122 | 4,141 | 4,137 | 4,116 | 4,086 |
| Real estate | 3,188 | 3,356 | 3,368 | 3,379 | 3,420 | 3,458 | 3,487 | 3,509 | 3,509 | 3,492 | 3,467 |
| Other assets | 660 | 652 | 633 | 626 | 629 | 633 | 635 | 632 | 627 | 623 | 619 |
| **Debts** | 504 | 530 | 540 | 545 | 549 | 555 | 561 | 566 | 570 | 573 | 574 |
| Real estate | 349 | 367 | 381 | 390 | 396 | 401 | 405 | 409 | 411 | 413 | 413 |
| Other debts | 155 | 163 | 159 | 155 | 154 | 155 | 156 | 158 | 159 | 160 | 162 |
| **Debt/asset ratio** | 13.1% | 13.2% | 13.5% | 13.6% | 13.6% | 13.6% | 13.6% | 13.7% | 13.8% | 13.9% | 14.1% |

All projections are averages across 500 stochastic outcomes.

# Consumer price indices for food

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (1982-84 = 100) | | | | | | |
| **Total food** | 305.4 | 318.7 | 324.3 | 329.8 | 335.9 | 342.8 | 350.4 | 358.3 | 366.1 | 374.0 | 382.1 |
| (Inflation rate) | 9.9% | 4.4% | 1.7% | 1.7% | 1.8% | 2.1% | 2.2% | 2.2% | 2.2% | 2.2% | 2.2% |
| **Food at home** | 288.5 | 298.1 | 300.9 | 304.6 | 309.3 | 314.8 | 321.0 | 327.3 | 333.5 | 339.8 | 346.4 |
| Cereal and bakery | 326.7 | 344.2 | 344.5 | 347.6 | 353.2 | 360.3 | 368.6 | 376.9 | 385.1 | 393.7 | 402.7 |
| Meat | 313.7 | 315.9 | 319.4 | 324.5 | 330.4 | 336.0 | 342.0 | 348.5 | 354.5 | 360.5 | 367.0 |
| Dairy | 259.2 | 268.1 | 270.5 | 273.3 | 276.9 | 281.8 | 287.7 | 293.9 | 299.9 | 306.1 | 312.6 |
| Fruit and vegetables | 341.7 | 352.5 | 356.2 | 360.0 | 364.3 | 369.5 | 375.3 | 381.2 | 387.1 | 393.1 | 399.2 |
| Other food at home | 251.8 | 264.0 | 266.9 | 270.0 | 273.8 | 278.8 | 284.3 | 289.9 | 295.5 | 301.2 | 307.0 |
| Sugar and sweets | 258.8 | 269.3 | 273.9 | 278.0 | 281.3 | 287.5 | 293.6 | 300.1 | 306.8 | 313.3 | 319.7 |
| Fats and oils | 284.5 | 304.1 | 309.2 | 313.2 | 318.7 | 325.5 | 333.1 | 340.8 | 348.4 | 356.4 | 364.8 |
| Other prepared items | 267.4 | 280.5 | 282.7 | 285.7 | 290.3 | 295.8 | 302.1 | 308.4 | 314.6 | 321.1 | 327.8 |
| Non-alcoholic beverages | 201.9 | 211.2 | 214.4 | 216.9 | 219.2 | 222.7 | 226.3 | 230.0 | 233.8 | 237.5 | 241.2 |
| **Food away from home** | 330.8 | 348.6 | 357.4 | 365.2 | 373.0 | 381.7 | 391.1 | 400.8 | 410.5 | 420.3 | 430.4 |

All projections are averages across 500 stochastic outcomes.

# Consumer expenditures for food

| Calendar year | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (Dollars per person) | | | | | | |
| **Total food per capita** | 6,996 | 7,305 | 7,448 | 7,607 | 7,808 | 8,034 | 8,273 | 8,515 | 8,756 | 8,999 | 9,247 |
| Food at home | 3,089 | 3,177 | 3,208 | 3,261 | 3,329 | 3,407 | 3,492 | 3,579 | 3,665 | 3,752 | 3,842 |
| Food away from home | 3,907 | 4,127 | 4,240 | 4,345 | 4,479 | 4,626 | 4,781 | 4,936 | 5,090 | 5,246 | 5,406 |
| Multiply by population for: | | | | | (Billion dollars) | | | | | | |
| **Total U.S. food expenditures** | 2,330 | 2,443 | 2,503 | 2,569 | 2,650 | 2,740 | 2,836 | 2,933 | 3,031 | 3,130 | 3,232 |

All projections are averages across 500 stochastic outcomes.