

# Corn Outlook

September 20, 2022

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Department of Agricultural and Resource Economics

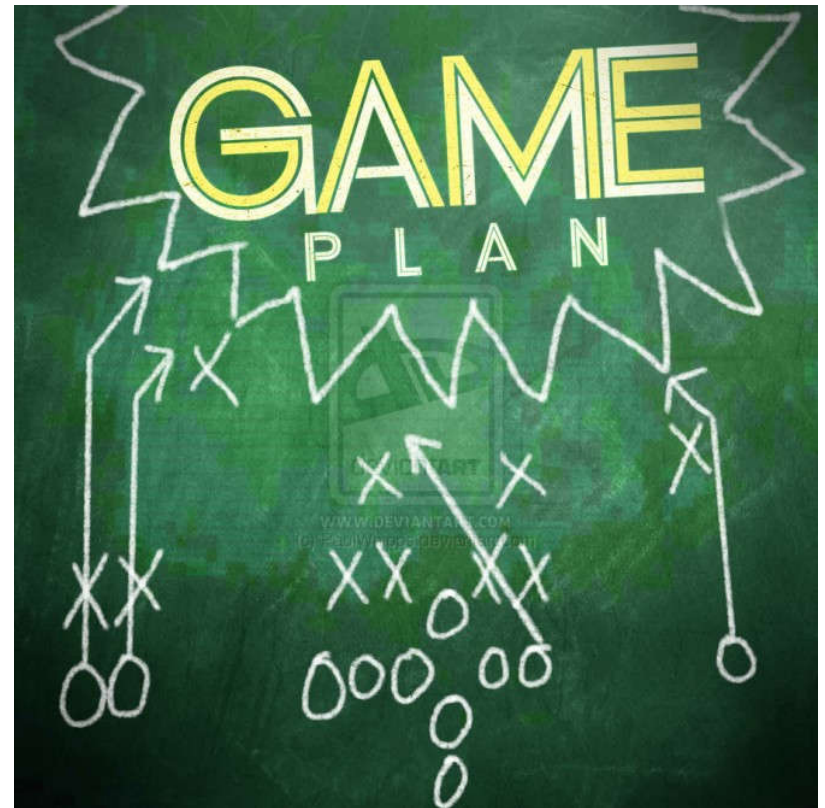
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Web Page: <https://cropeconomics.tennessee.edu>

# Overview

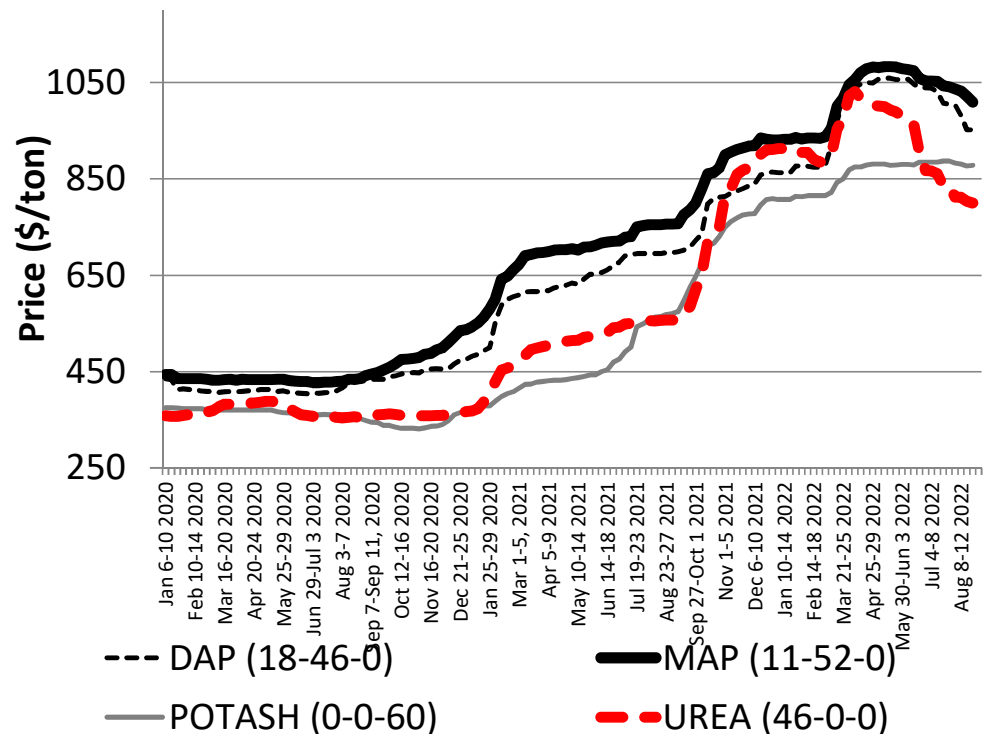
- Weather Variability
- Macro-Economic Influences
- Supply and Demand
- Prices



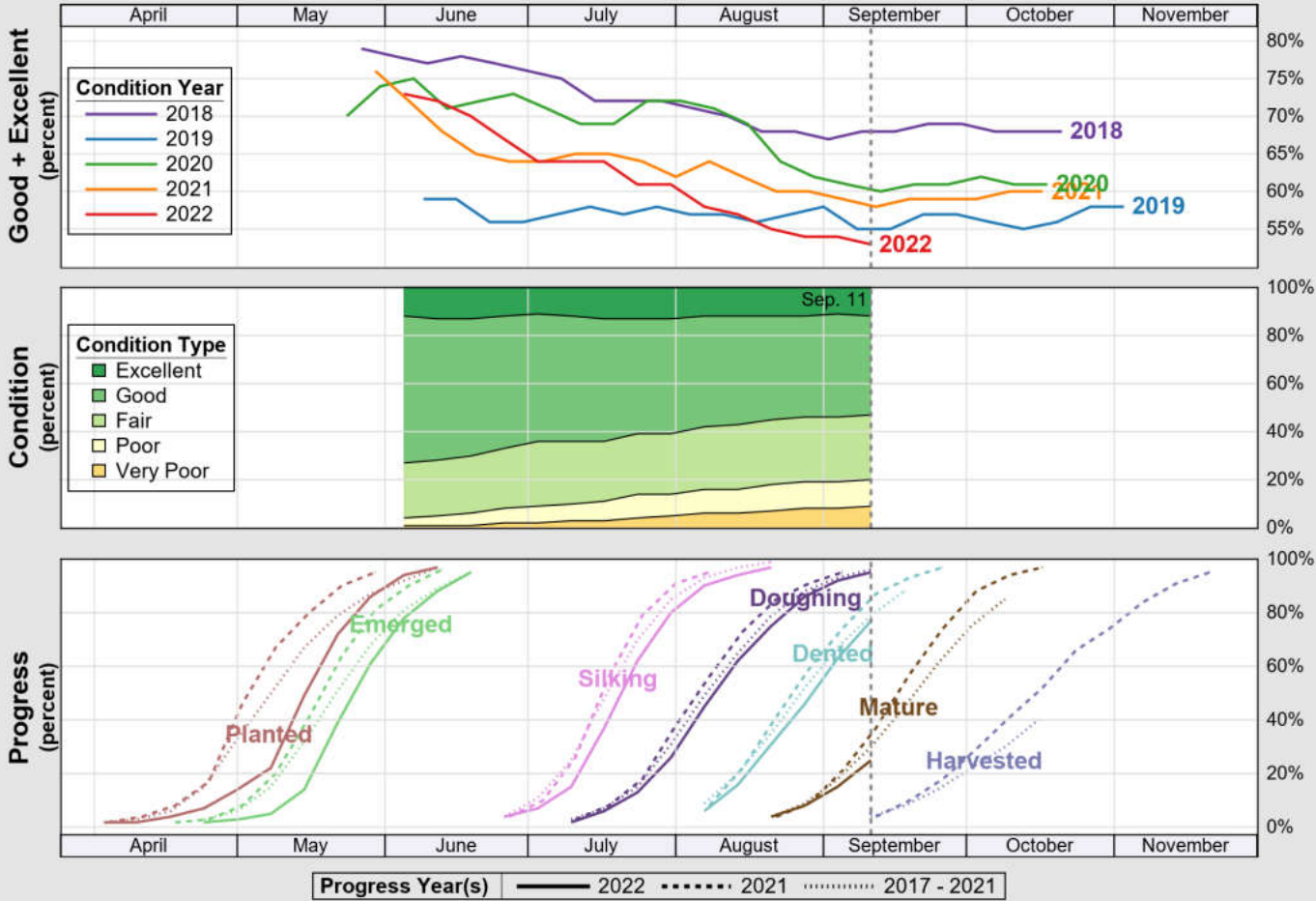
# Start of the Year

- Acreage was very competitive in spring 2022.
- It was expensive to plant corn in 2022!
- Cost of production up 20-46%.
  - Fertilizer and fuel.
  - Input availability.

Fertilizer Price, 2020-2022



**USDA** **Crop Progress and Condition: Corn in United States , 2022** **NASS**

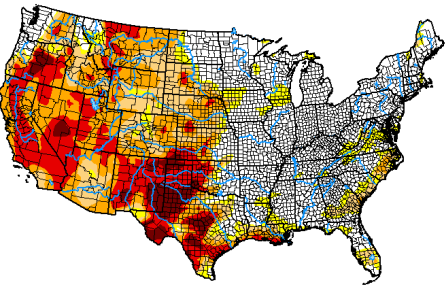


Source: National Agricultural Statistics Service (NASS), Crop Progress Report

- 88.6 million acres planted, down 4.7 million compared to 2021.
- 3.15 million acres of corn prevent planted
  - 1.2 in North Dakota
  - 0.540 in South Dakota
  - 0.274 in Arkansas
  - 0.272 in Minnesota

**U.S. Drought Monitor  
CONUS**

**May 10, 2022**  
(Released Thursday, May, 12, 2022)  
Valid 8 a.m. EDT



**Intensity:**  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

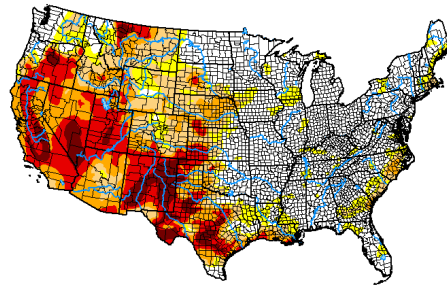
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

**Author:**  
David Simeral  
Western Regional Climate Center



**U.S. Drought Monitor  
CONUS**

**June 7, 2022**  
(Released Thursday, Jun. 9, 2022)  
Valid 8 a.m. EDT



**Intensity:**  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

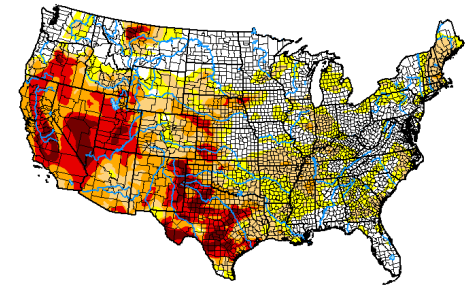
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

**Author:**  
Brad Pugh  
CPC/NOAA



**U.S. Drought Monitor  
CONUS**

**July 12, 2022**  
(Released Thursday, Jul. 14, 2022)  
Valid 8 a.m. EDT



**Intensity:**  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

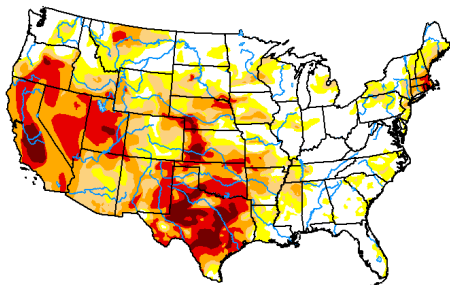
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

**Author:**  
Brian Fuchs  
National Drought Mitigation Center



**U.S. Drought Monitor  
CONUS**

**August 16, 2022**  
(Released Thursday, Aug. 18, 2022)  
Valid 8 a.m. EDT



**Intensity:**  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

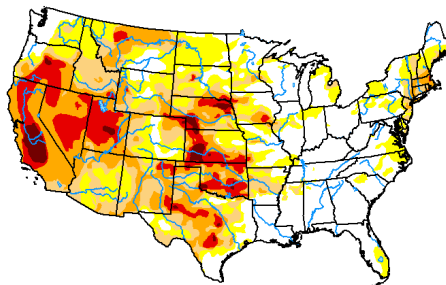
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

**Author:**  
Richard Tinker  
CPC/NOAA/NWS/NCEP



**U.S. Drought Monitor  
CONUS**

**September 13, 2022**  
(Released Thursday, Sep. 15, 2022)  
Valid 8 a.m. EDT



**Intensity:**  
 None  
 D0 Abnormally Dry  
 D1 Moderate Drought  
 D2 Severe Drought  
 D3 Extreme Drought  
 D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

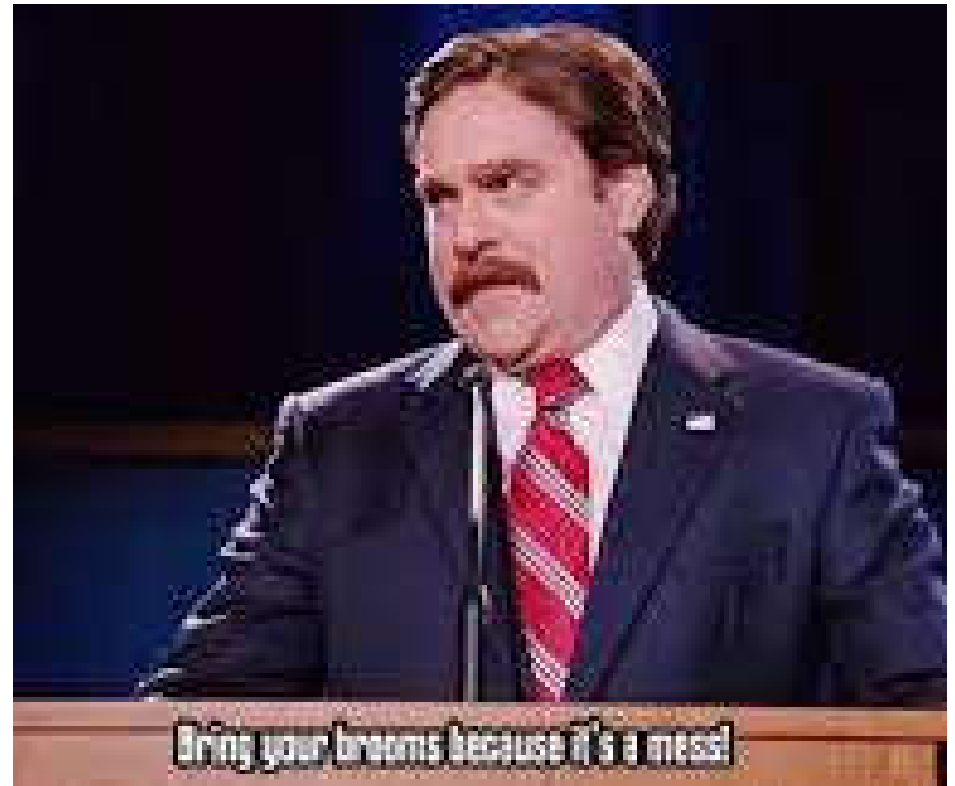
**Author:**  
David Simeral  
Western Regional Climate Center



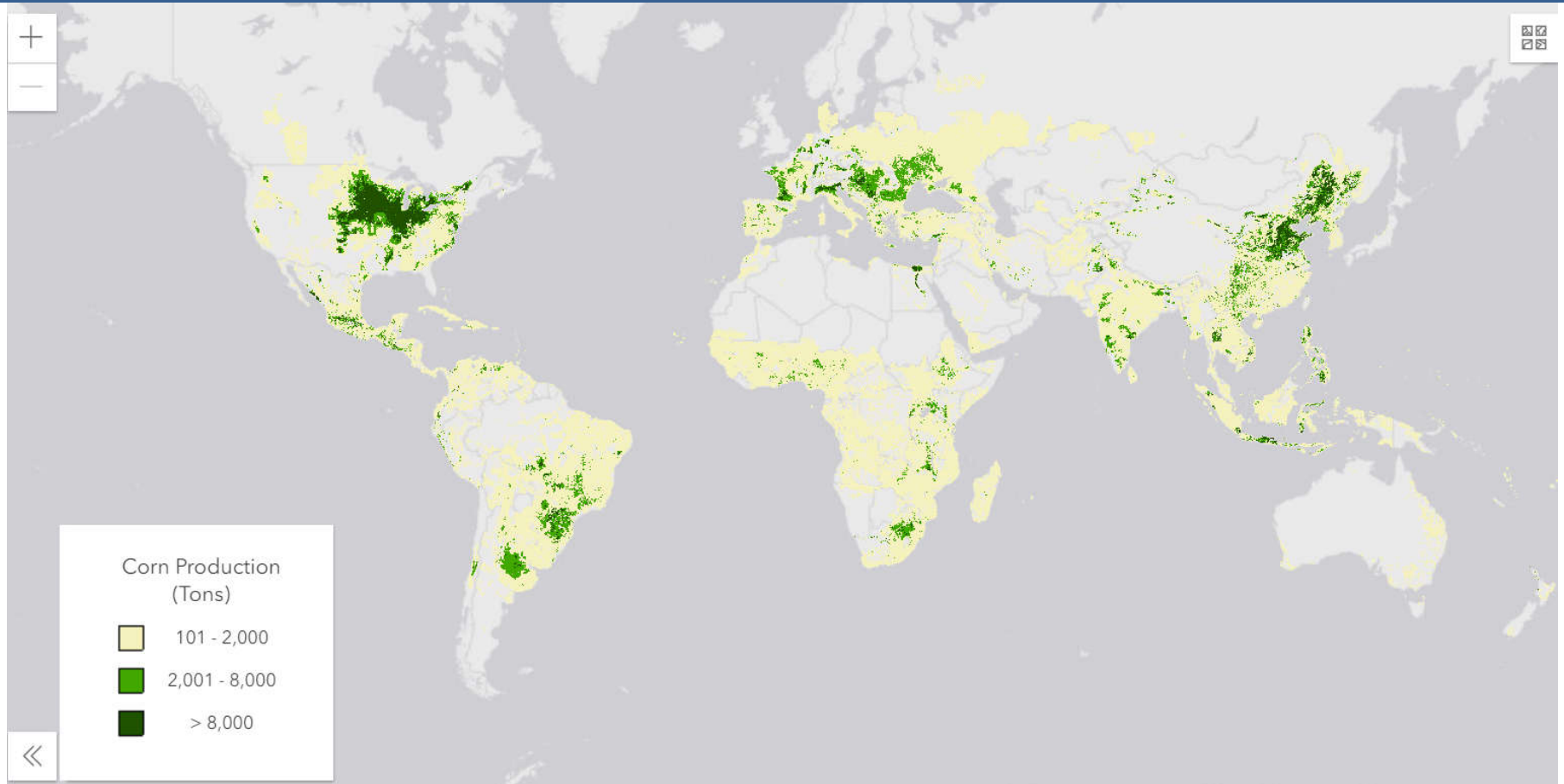
Wet and Cold / Hot and Dry  
2022 had a bit of everything!

# Macro Economic Factors

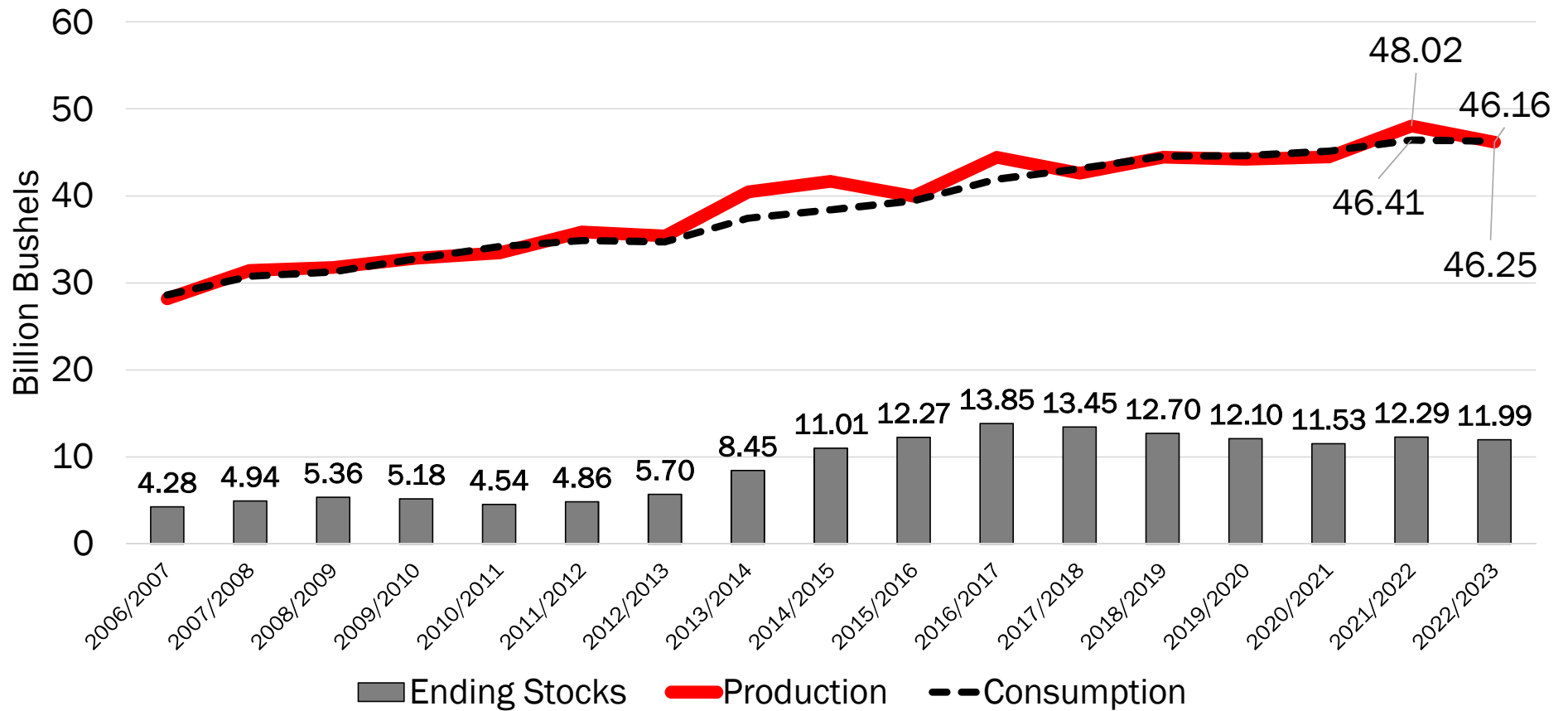
- USD index at 20-year highs.
- Inflation 8.3% in August, set 40-year highs.
- Prime rate 5.5%, up 2.25% with additional increases likely in 2022.
- Stock markets down 15-26% YTD.
- GDP contraction in Q1 and Q2.
- Labor force participation rate 62.4%, down 1% from pre-pandemic levels (~2.6 million).
- \$1.4 trillion deficit (3<sup>rd</sup> highest).
- Supply chain disruptions.



# Global Corn Production

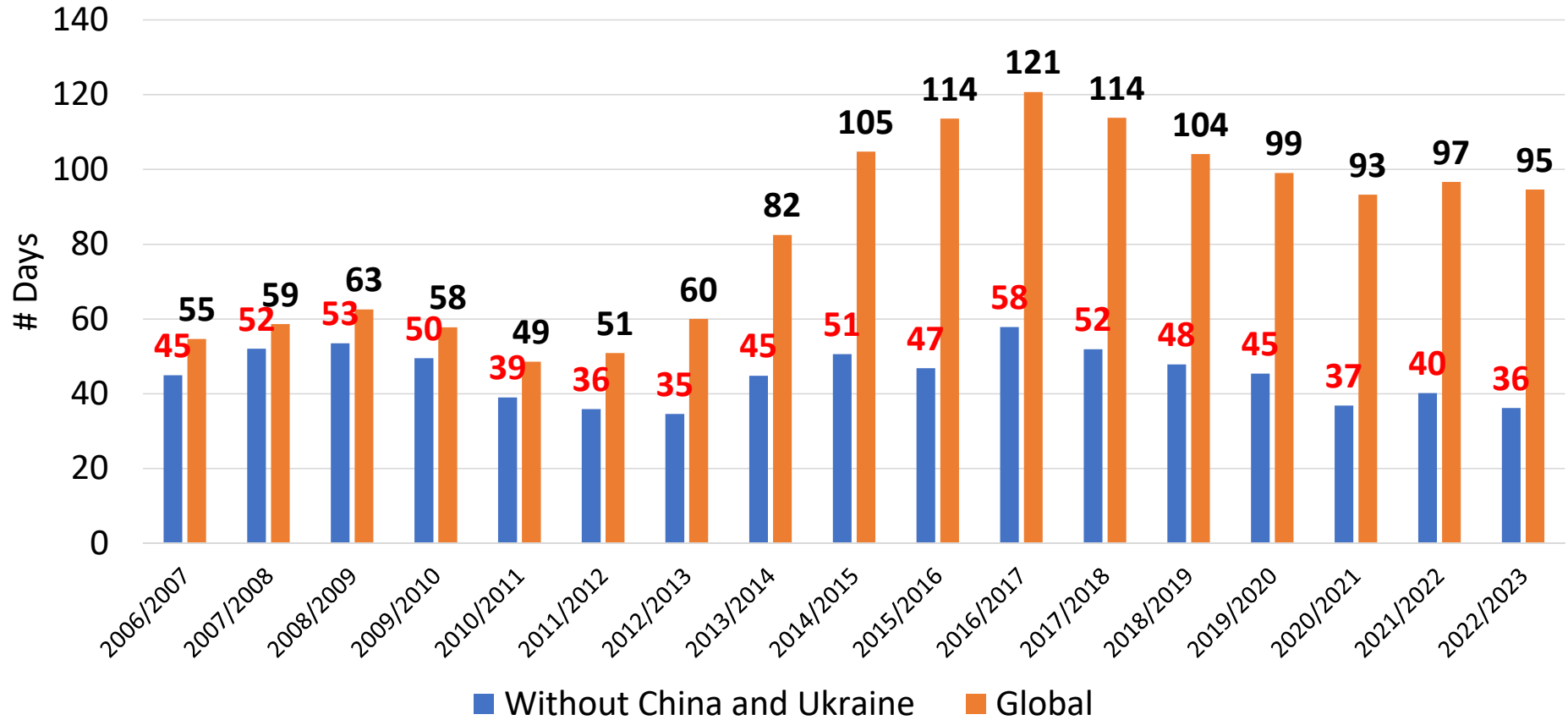


# Global Supply and Demand





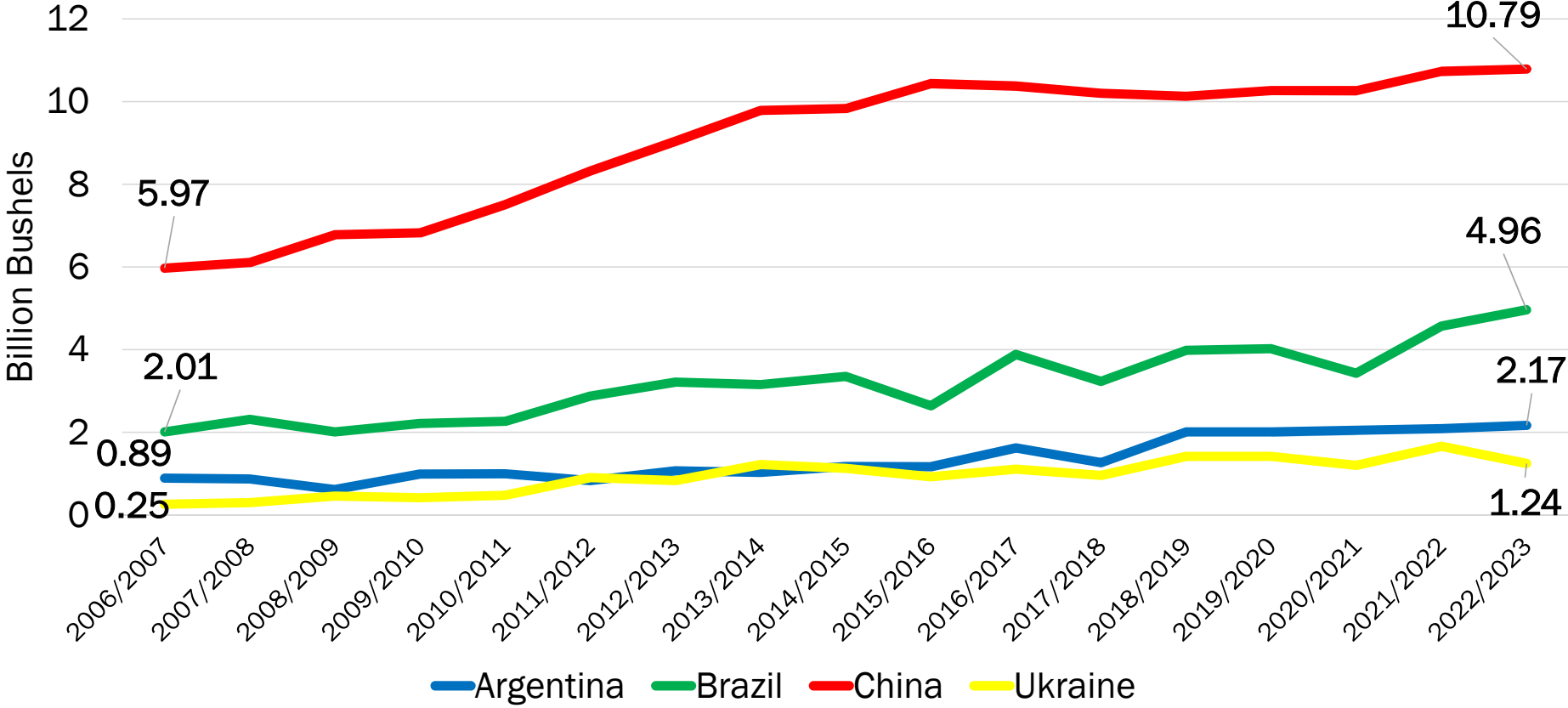
# Global Days On-Hand



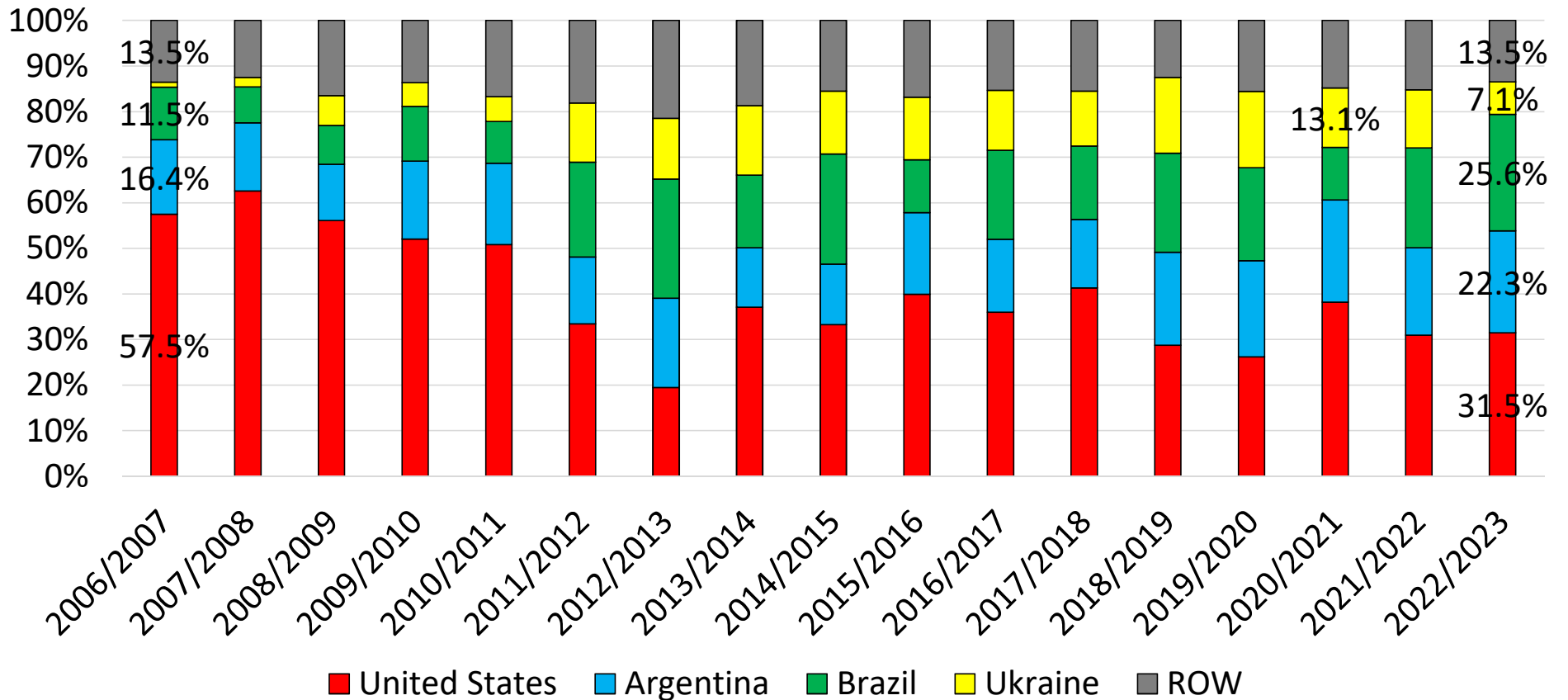
# World Corn Supply and Use (Million Bushels) 2022/23 Marketing Year

<u>Country / Region</u>	<u>Beginning Stocks</u>	<u>Production</u>	<u>Imports</u>	<u>Domestic Feed</u>	<u>Domestic Total</u>	<u>Exports</u>	<u>Ending Stocks</u>
<b>World</b>	<b>12,288</b>	<b>46,162</b>	<b>7,017</b>	<b>29,252</b>	<b>46,461</b>	<b>7,227</b>	<b>11,989</b>
<b>United States</b>	<b>1,525</b>	<b>13,944</b>	<b>25</b>	<b>5,225</b>	<b>12,000</b>	<b>2,275</b>	<b>1,218</b>
<b>Total Foreign</b>	<b>10,764</b>	<b>32,218</b>	<b>6,993</b>	<b>24,027</b>	<b>34,462</b>	<b>4,952</b>	<b>10,770</b>
Argentina	59	2,165	0	394	551	1,614	59
<b>Brazil</b>	<b>183</b>	<b>4,960</b>	<b>51</b>	<b>2,579</b>	<b>3,031</b>	<b>1,850</b>	<b>313</b>
Russia	37	591	2	394	441	157	31
South Africa	76	681	0	287	524	146	87
<b>Ukraine</b>	<b>219</b>	<b>1,240</b>	<b>0</b>	<b>453</b>	<b>500</b>	<b>512</b>	<b>448</b>
Egypt	63	293	362	547	646	0	72
E.U.	380	2,315	748	2,244	3,047	106	290
Japan	54	0	598	461	598	0	55
Mexico	121	1,087	697	1,035	1,752	24	129
S.E. Asia	139	1,231	720	1,606	1,933	23	134
South Korea	81	3	453	362	455	0	82
Canada	87	571	59	362	567	63	87
China	8,277	10,787	709	8,425	11,614	1	8,158
ROW	989	6,295	2,592	4,879	8,803	456	827

# Corn Production, 2006-2022

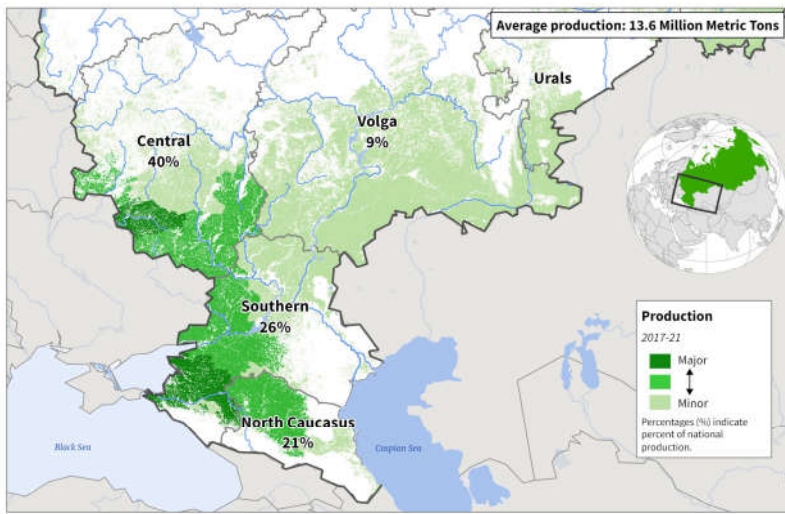


# Share of Global Corn Export Market, 2006-2022



# Ukraine-Russia

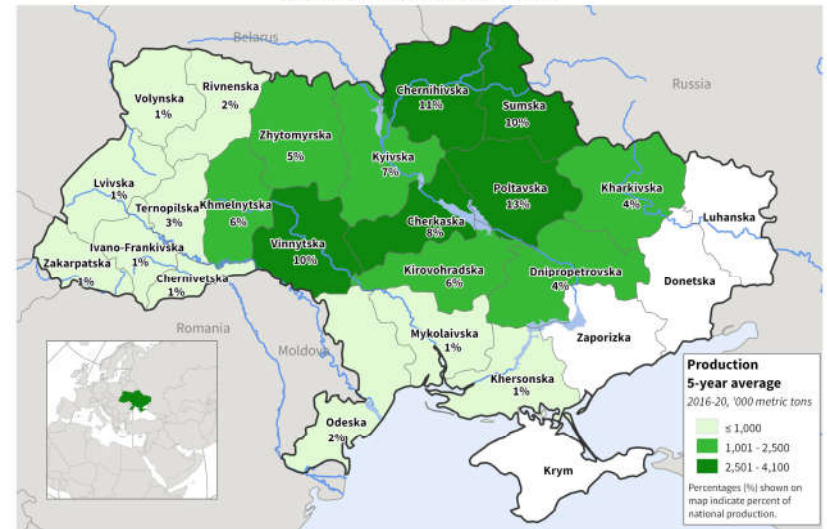
**Russia: Corn Production**



USDA Foreign Agricultural Service  
U.S. DEPARTMENT OF AGRICULTURE

Sources: Rosstat, Average Crop Production 2017-2021;  
GFSAD 30 m crop cover (2015)

**Ukraine: Corn Production**



USDA Foreign Agricultural Service  
U.S. DEPARTMENT OF AGRICULTURE

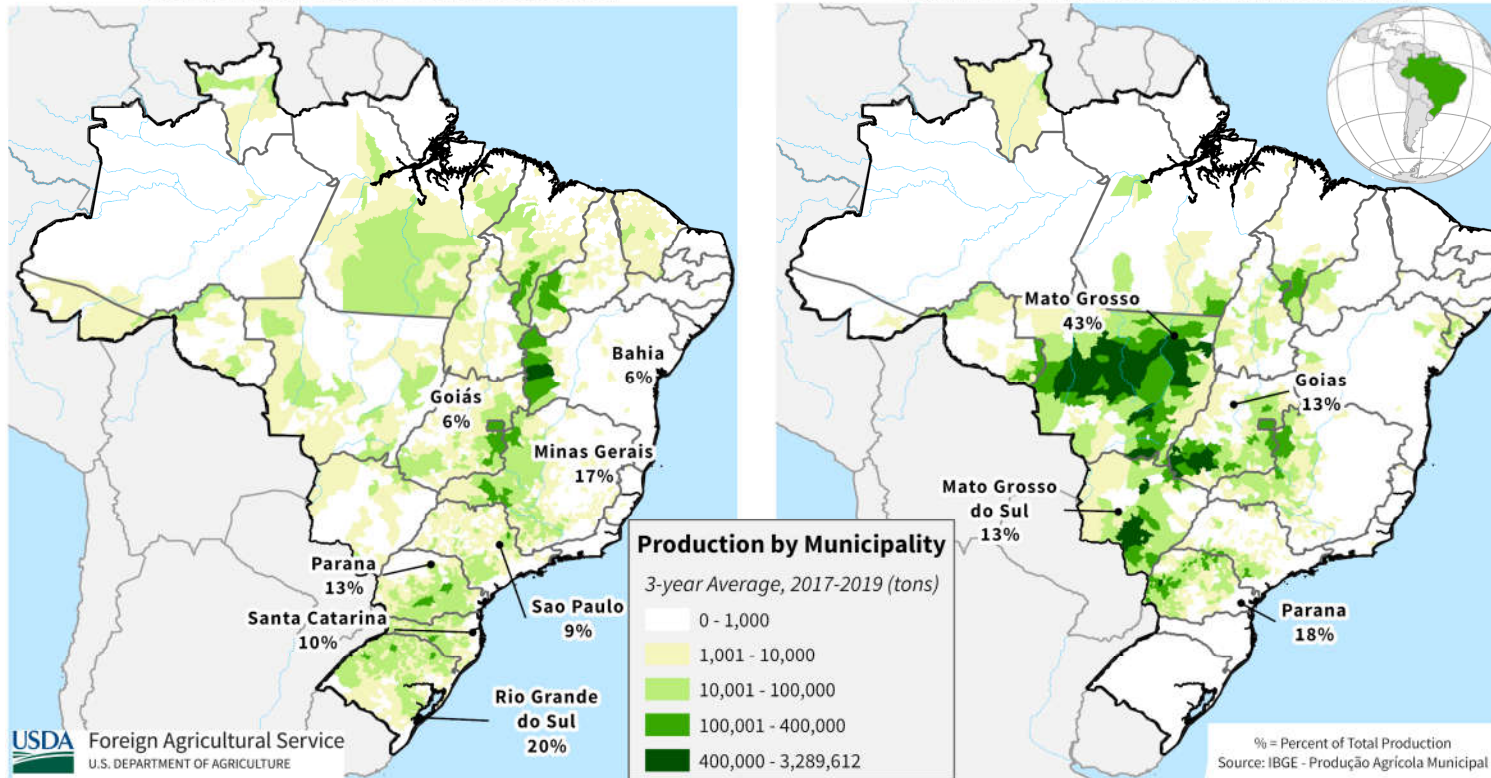
Source: State Statistics Service of Ukraine (Rosstat for Crimea Oblast)  
Average Corn Production 2016-2020

Russia's invasion of Ukraine continues to provide uncertainty for grain and oilseed, production, transportation, and trade.

# Brazil Production

Brazil: First Season Corn Production

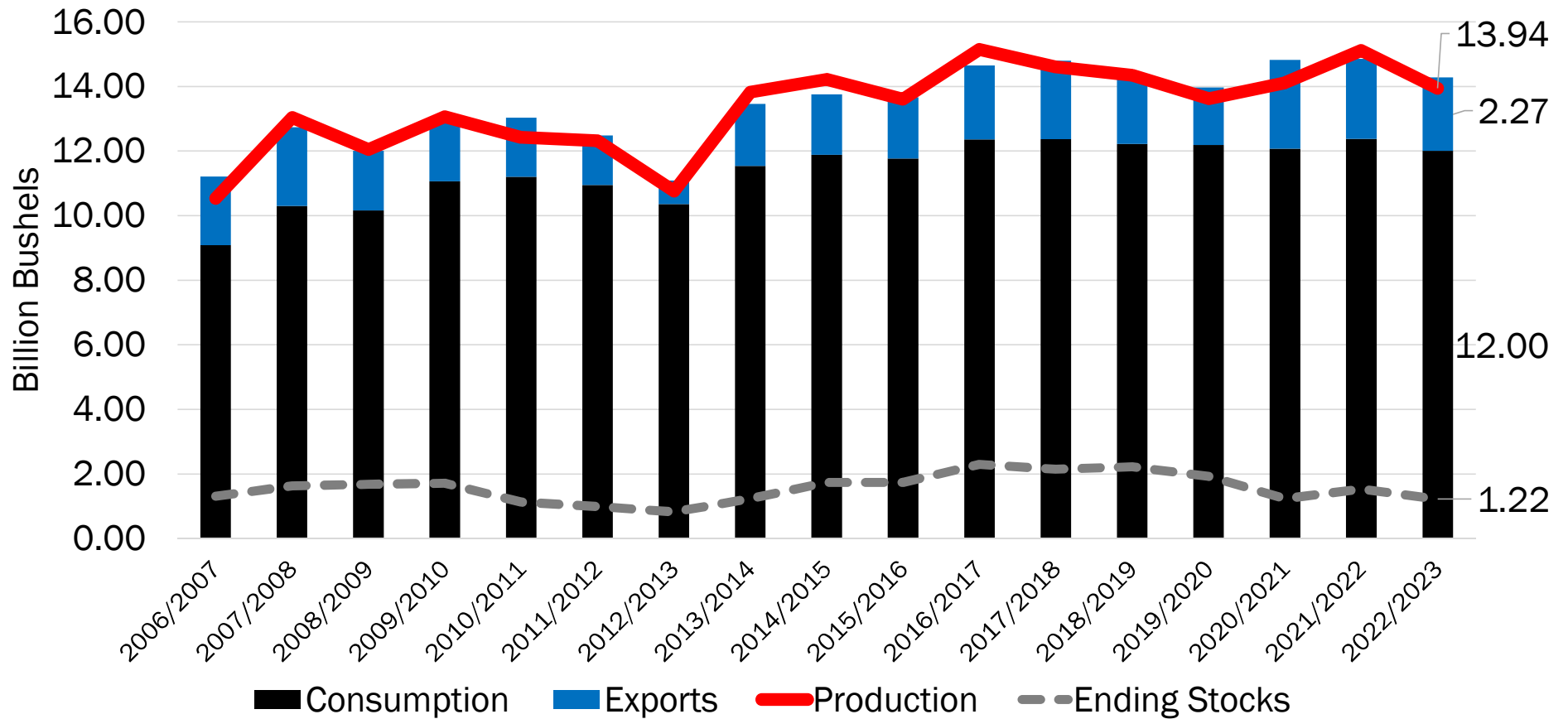
Brazil: Second Season Corn Production



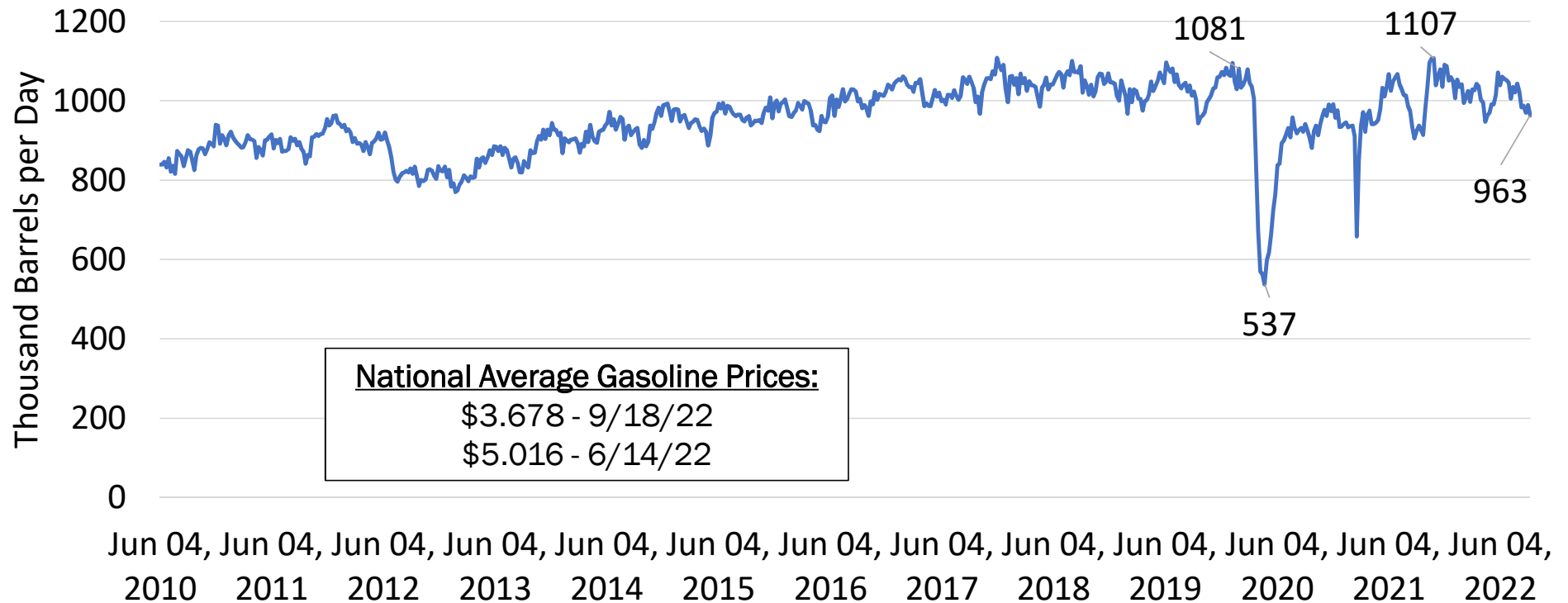
- Second crop corn is now the dominant crop in Brazil.
- 2<sup>nd</sup> Crop harvested June-Sept
- 1<sup>st</sup> Crop harvested Feb-April.

USDA Foreign Agricultural Service  
U.S. DEPARTMENT OF AGRICULTURE

# U.S. Supply and Demand, 2006-2022

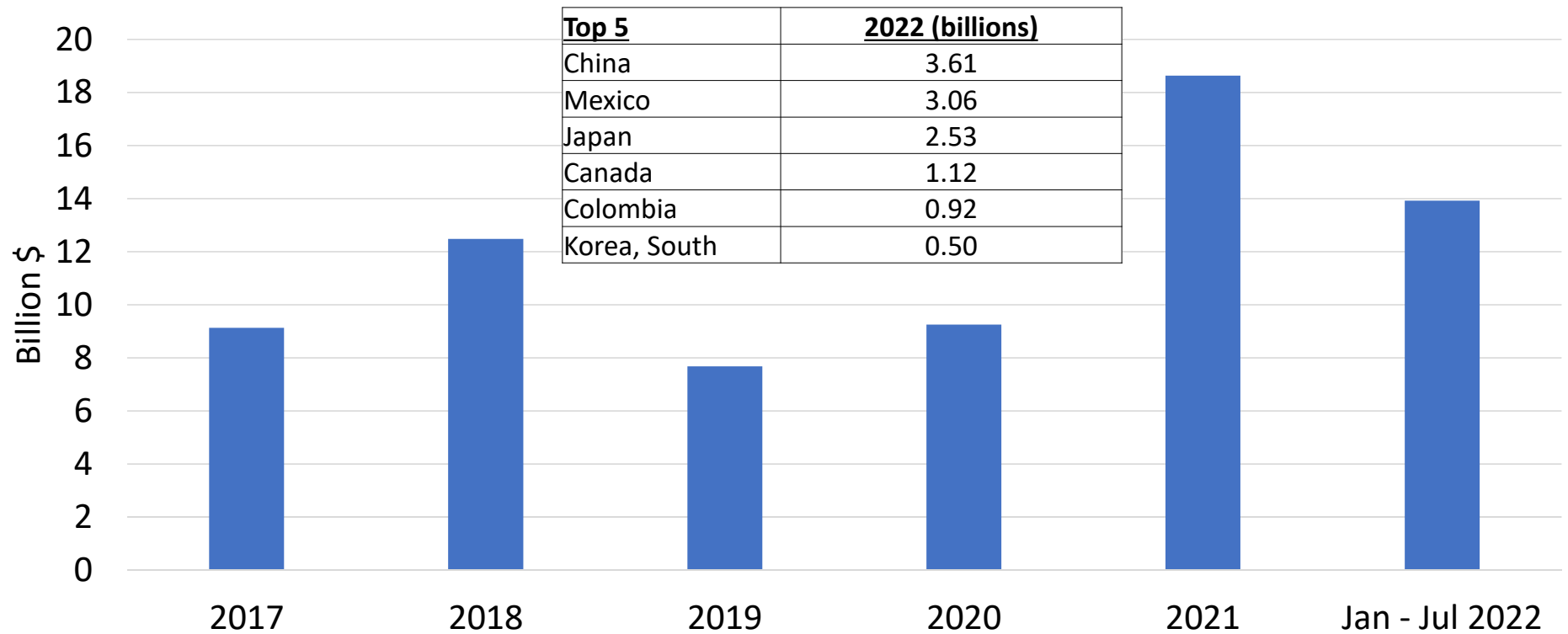


# Weekly Ethanol Production, 2010-2022





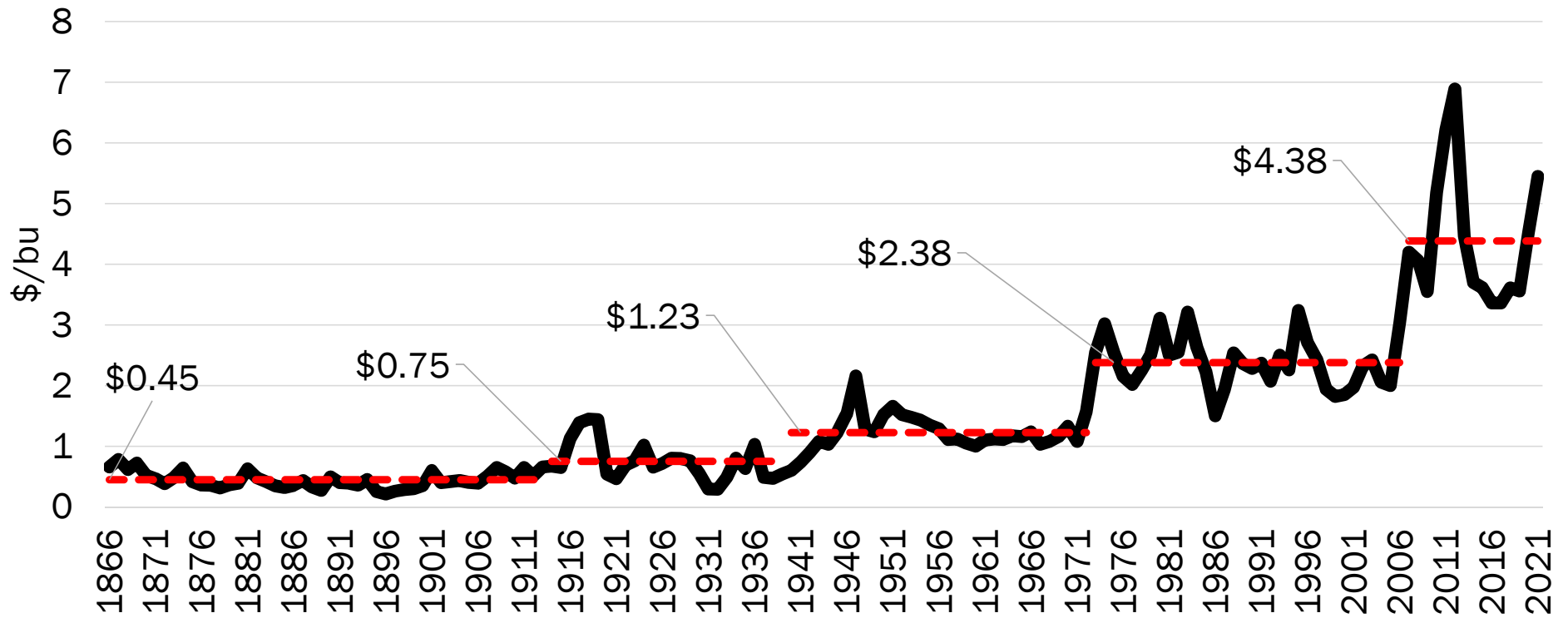
# U.S. Exports, 2017-2022



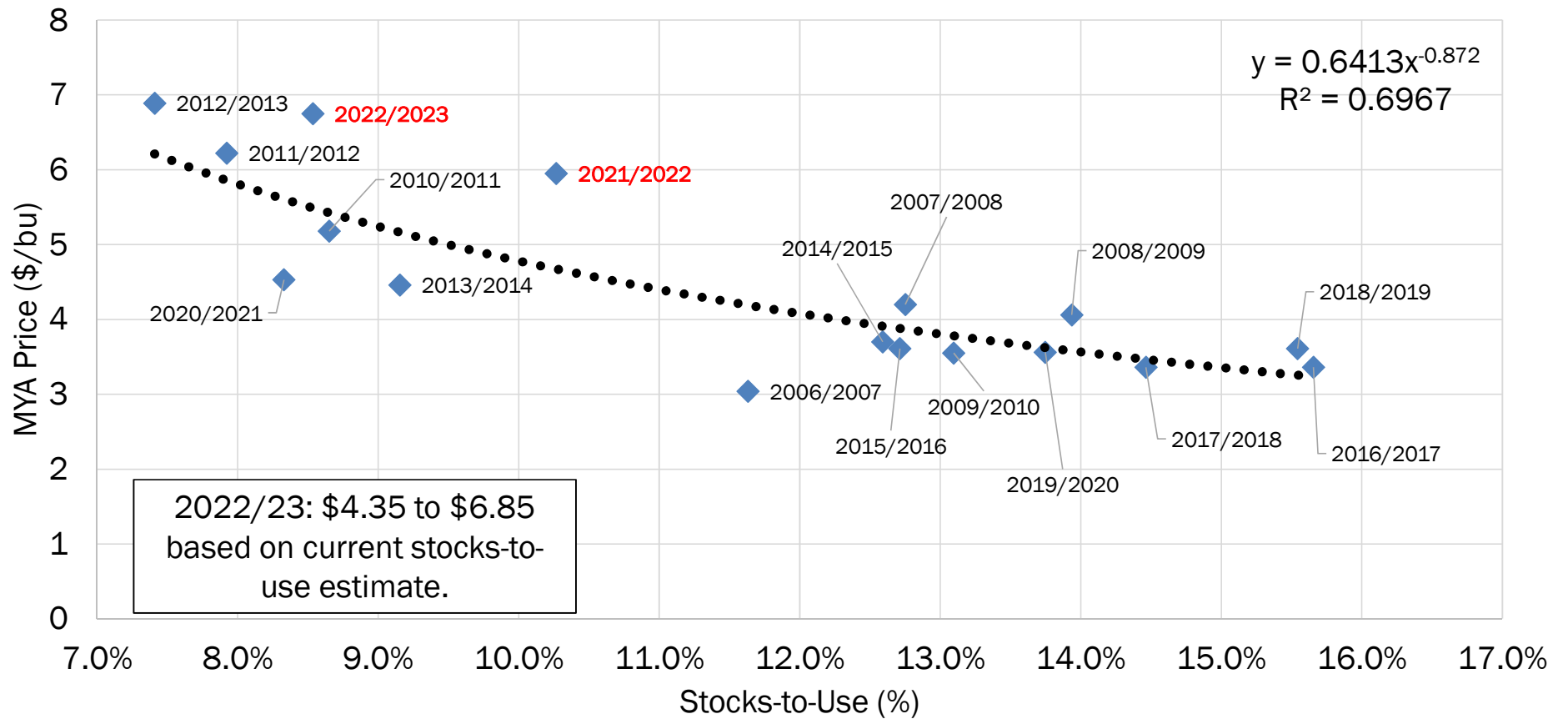
	2018/19	2019/20	2020/21	2021/22 Est.	2022/23 Projected August	2022/23 Projected September	2022/23 Change from Previous Month	Change 2022/23- 2021/22
<b>Planted and Harvested Acres &amp; Yield</b>								
Planted (Million)	88.9	89.7	90.7	93.4	<b>89.8</b>	<b>88.6</b>	-1.2	-4.8
Harvested (Million)	81.3	81.3	82.3	85.4	<b>81.8</b>	<b>80.8</b>	-1.0	-4.6
Yield (Bu/Acre)	176.4	167.5	171.4	177	<b>175.4</b>	<b>172.5</b>	-2.9	-4.5
<b>Supply (Million Bushels)</b>								
Beg. Stocks	2,140	2,221	1,919	1,235	<b>1,530</b>	<b>1,525</b>	-5	290
Production	14,340	13,620	14,111	15,115	<b>14,359</b>	<b>13,944</b>	-415	-1,171
Imports	28	42	24	25	<b>25</b>	<b>25</b>	0	0
Total Supply	16,509	15,883	16,055	16,375	<b>15,913</b>	<b>15,494</b>	-419	-881
<b>Use &amp; Ending Stocks (Million Bushels)</b>								
Feed and Residual	5,429	5,900	5,603	5,600	<b>5,325</b>	<b>5,228</b>	-97	-372
Ethanol	5,378	4,857	5,033	5,330	<b>5,375</b>	<b>5,325</b>	-50	-5
FSI	1,415	1,429	1,438	1,445	<b>1,450</b>	<b>1,450</b>	0	5
<b>Exports</b>	<b>2,066</b>	<b>1,777</b>	<b>2,747</b>	<b>2,475</b>	<b>2,375</b>	<b>2,275</b>	<b>-100</b>	<b>-200</b>
Total Use	14,288	13,963	14,821	14,850	<b>14,525</b>	<b>14,275</b>	-250	-575
<b>U.S. Ending Stocks</b>	<b>2,221</b>	<b>1,919</b>	<b>1,235</b>	<b>1,525</b>	<b>1,388</b>	<b>1,219</b>	<b>-169</b>	<b>-306</b>
Foreign Stocks	10,419	10,142	10,292	10,764	<b>10,685</b>	<b>10,770</b>	85	6
<b>Price and Stocks to Use Ratio</b>								
U.S. Avg. Price (\$/Bu)	\$3.61	\$3.56	\$4.53	\$5.95	<b>\$6.65</b>	<b>\$6.75</b>	\$0.10	\$0.80
U.S. Stocks/Use	15.54%	13.74%	8.33%	10.27%	<b>9.56%</b>	<b>8.54%</b>	-1.02%	-1.73%

# US Supply, Demand, & MYA Price

# Corn Marketing Year Average Price



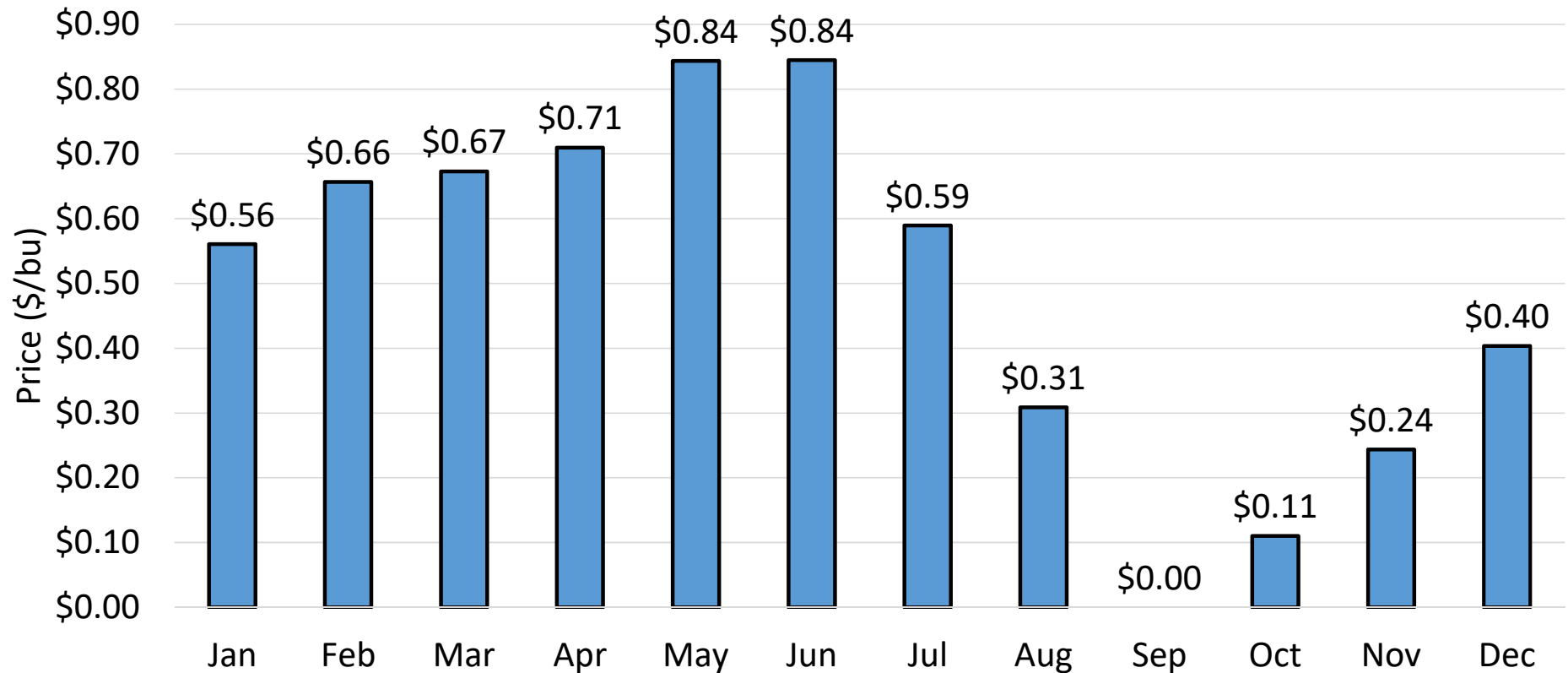
# U.S. Price and Stocks-to-Use Ratio



# December 2022



# Tennessee Corn Average Price Improvement from Harvest Low, 2013/14 to 2020/21



# Natural Gas Daily Nearby Futures



# December 2023

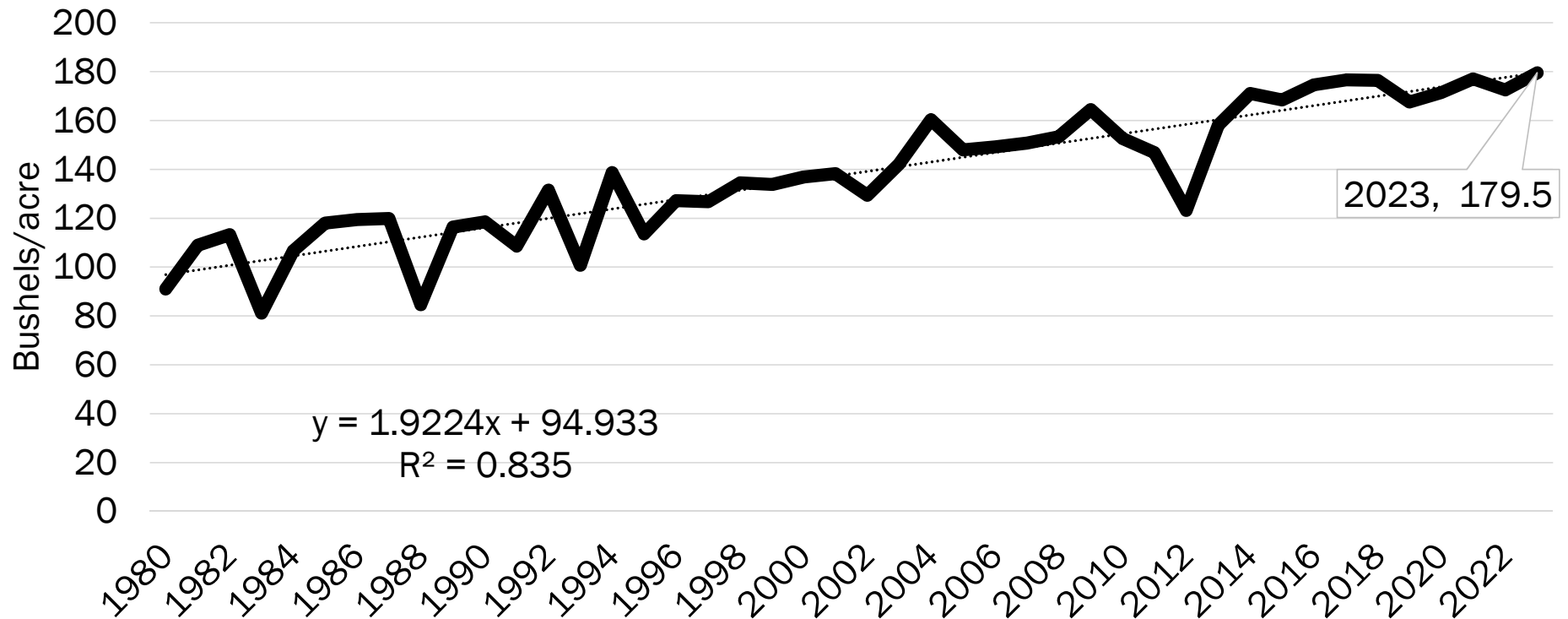




# Price Risk Management

- Identify risk intervals.
- Which marketing and risk management tools are effective based on current market conditions.
- Price protection versus setting a price.
- Storage versus harvest sales.
- Know your basis movements and terminal markets.
- Build a plan revisit and adjust as needed.

# Trend Line Yield, 1980-2022

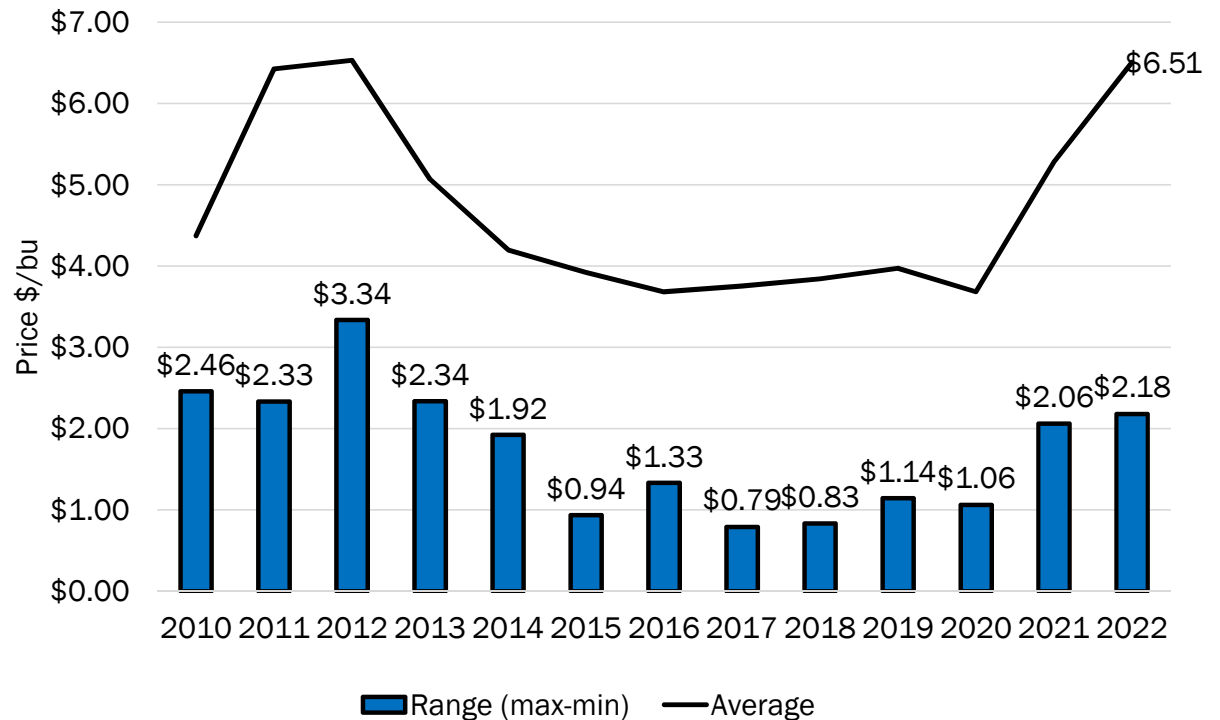


# Corn Crop Insurance Prices, 2017-2023

Commodity Year	Commodity Name	Projected Price Market Symbol	Projected Price Date Range	Projected Price	Harvest Price Date Range	Harvest Price
2017	Corn	ZCZ17	02/01 - 02/28	3.96	10/01 - 10/31	3.49
2018	Corn	ZCZ18	02/01 - 02/28	3.96	10/01 - 10/31	3.68
2019	Corn	ZCZ19	02/01 - 02/28	4	10/01 - 10/31	3.9
2020	Corn	ZCZ20	02/01 - 02/29	3.88	10/01 - 10/31	3.99
2021	Corn	ZCZ21	02/01 - 02/28	4.58	10/01 - 10/31	5.37
2022	Corn	ZCZ22	02/01 - 02/28	5.9	10/01 - 10/31	-

# Prices and Projections

- 2022 crop \$6.10 to \$7.20
  - In general basis will be strong in most areas in the Southeast.
- 2023 crop \$5.15 to \$7.35
  - South America growing conditions
  - 2023 US planted acreage
  - Russia-Ukraine
  - China demand



## Final Thoughts

- High cost of production for 2022 is likely to persist in to 2023.
- Macro-economic factors will continue to influence corn prices.
- Limited US and global stocks for 2022/23
- Strong prices should persist for the 2022 crop.
- 2023 bridge price gaps and protect against the downside.
  - Out-of-the-money put, until crop insurance price determined.

September 20, 2022

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Web Page: <https://cropeconomics.tennessee.edu>

THANK YOU