



Global Poultry and Agriculture Update and Outlook

Brett Stuart

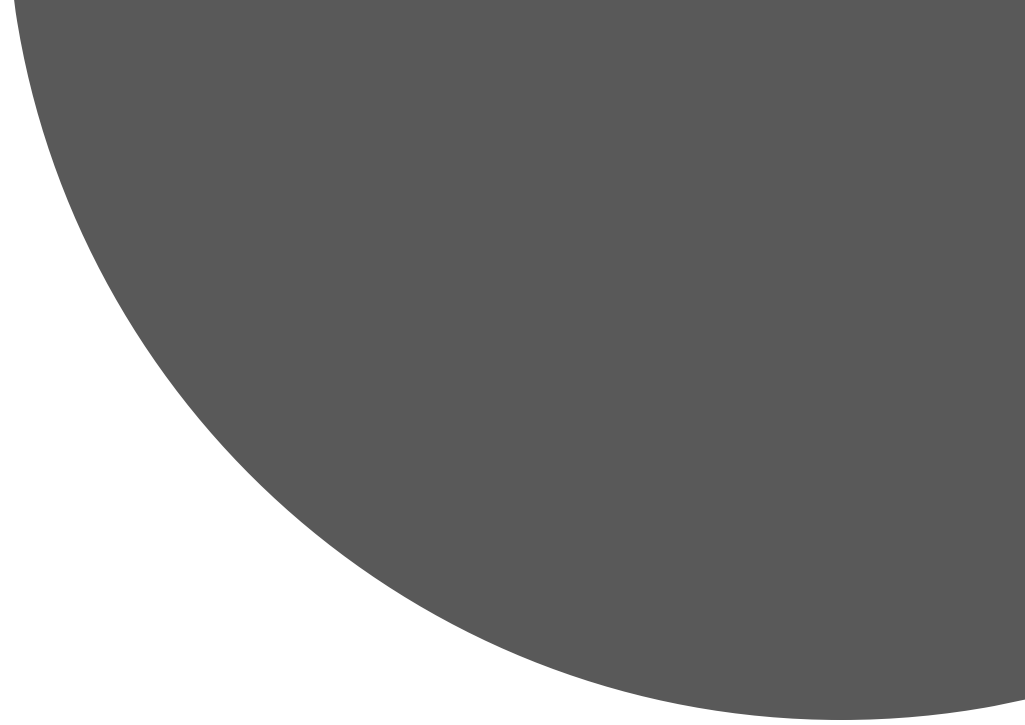
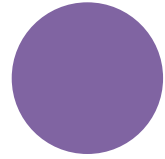
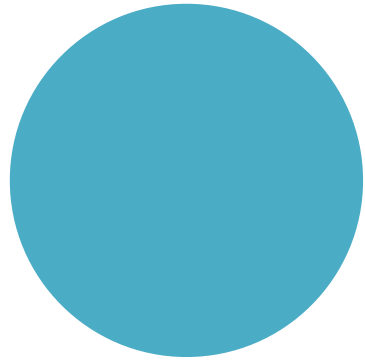
President, Global AgriTrends

October 6, 2023

Our Business: Global AgriTrends

- Global analysis of agriculture markets, est. 2006; focused on global proteins (beef, pork, poultry)
- Economic and policy, forecasting; market research
- Extensive global network of clients and contacts
- On-the-ground research on 6 continents
- Providing data to a wide variety of global agribusinesses including: multinational processors, agriculture banks, hedge funds, commodity brokers, meat and livestock producers (hogs, cattle, chickens, dairy, grains), trade associations, feed companies, nutrition, pharmaceuticals and others seeking market intel in the global protein space





**The Future is
Unpredictable.**



**But some trends are
unmistakable...**

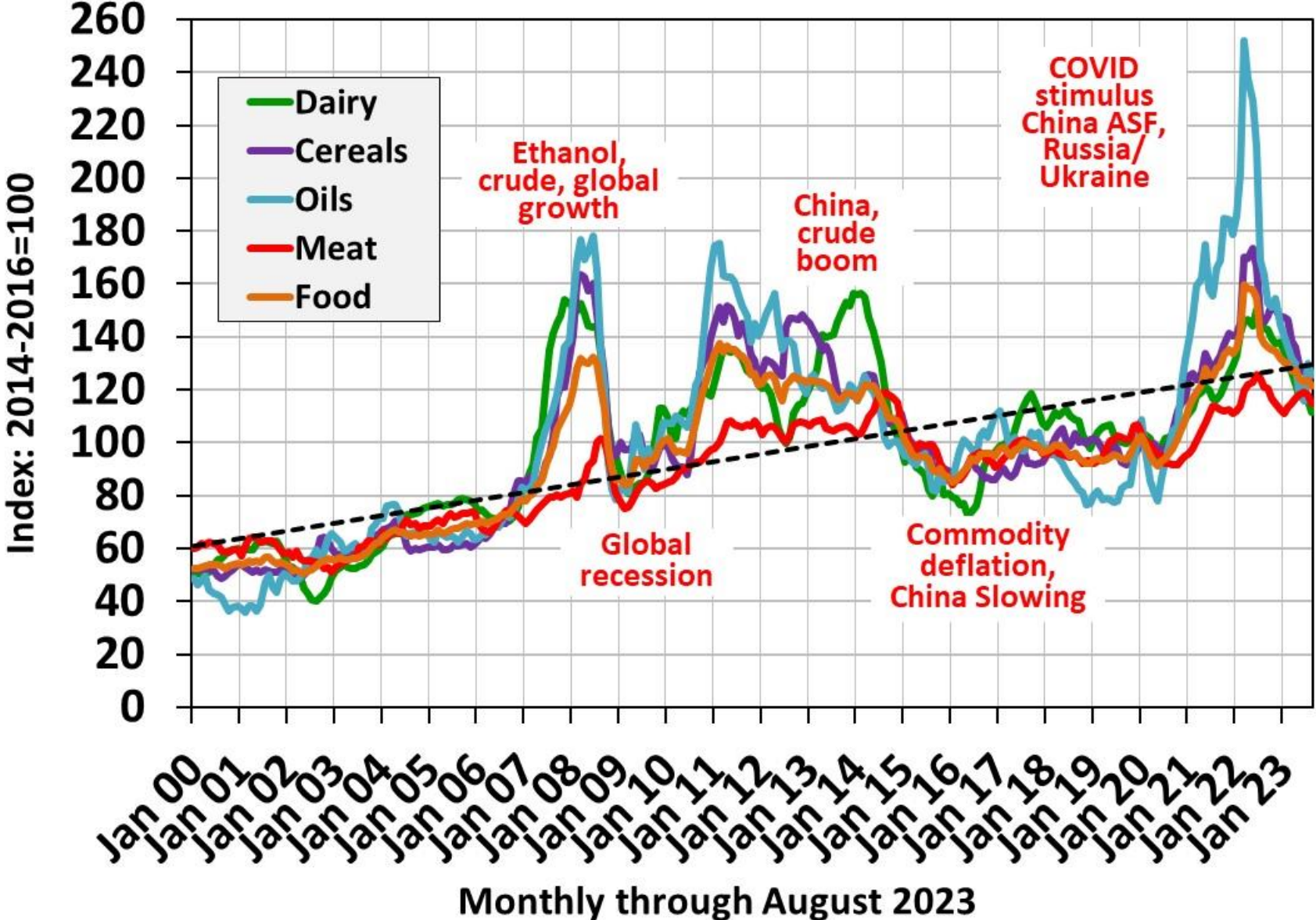
Is the future predictable?



Outline

- Macroeconomics
 - Inflation
 - Global recession watch
- Global poultry and grains
 - Supply / Demand fundamentals
 - Other market issues
- 10-year forecasts

Global Food Indices



Two Golden Rules:

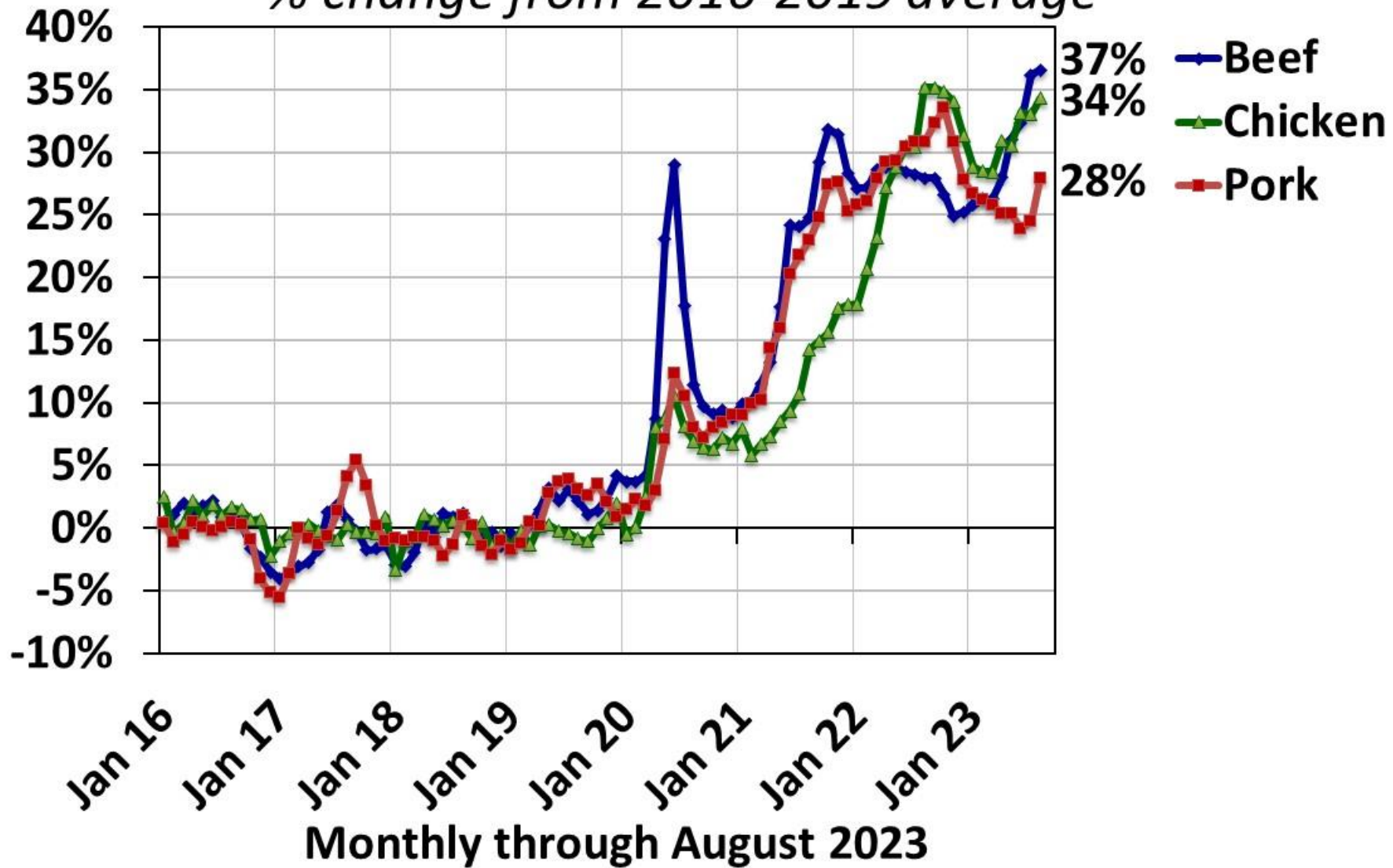
High prices “fix” high prices; and vice versa

Markets are like airplanes...

Source: UN/FAO

U.S. Retail Prices

% change from 2016-2019 average



Trudeau calls on major grocers to create plan to stabilize food prices or face consequences

5 largest grocers will be asked to come up with plan by Thanksgiving

- LONDON, Ont. — The federal government is demanding major Canadian grocers come up with a plan to stabilize prices, drawing pushback from the food industry.
- He said the government will be asking the five largest grocery companies including Loblaw Cos. Ltd., Metro Inc., Empire Co. Ltd., Walmart Inc. and Costco Wholesale Corp. to come up with a plan by Thanksgiving.
- “If their plan doesn’t provide real relief for the middle class and people working hard to join it, then we will take further action and we are not ruling anything out including tax measures.”

Persistent Inflation

- The sheer increase in money supply (US money supply grew 44% in 3 years) lends to a permanent structural cost increase: real estate, equity markets, goods & services
- Wages are the slowest to rise, pressuring household budgets
 - Labor remains the problem with NO solution
 - And will take a decade to rebalance with higher costs



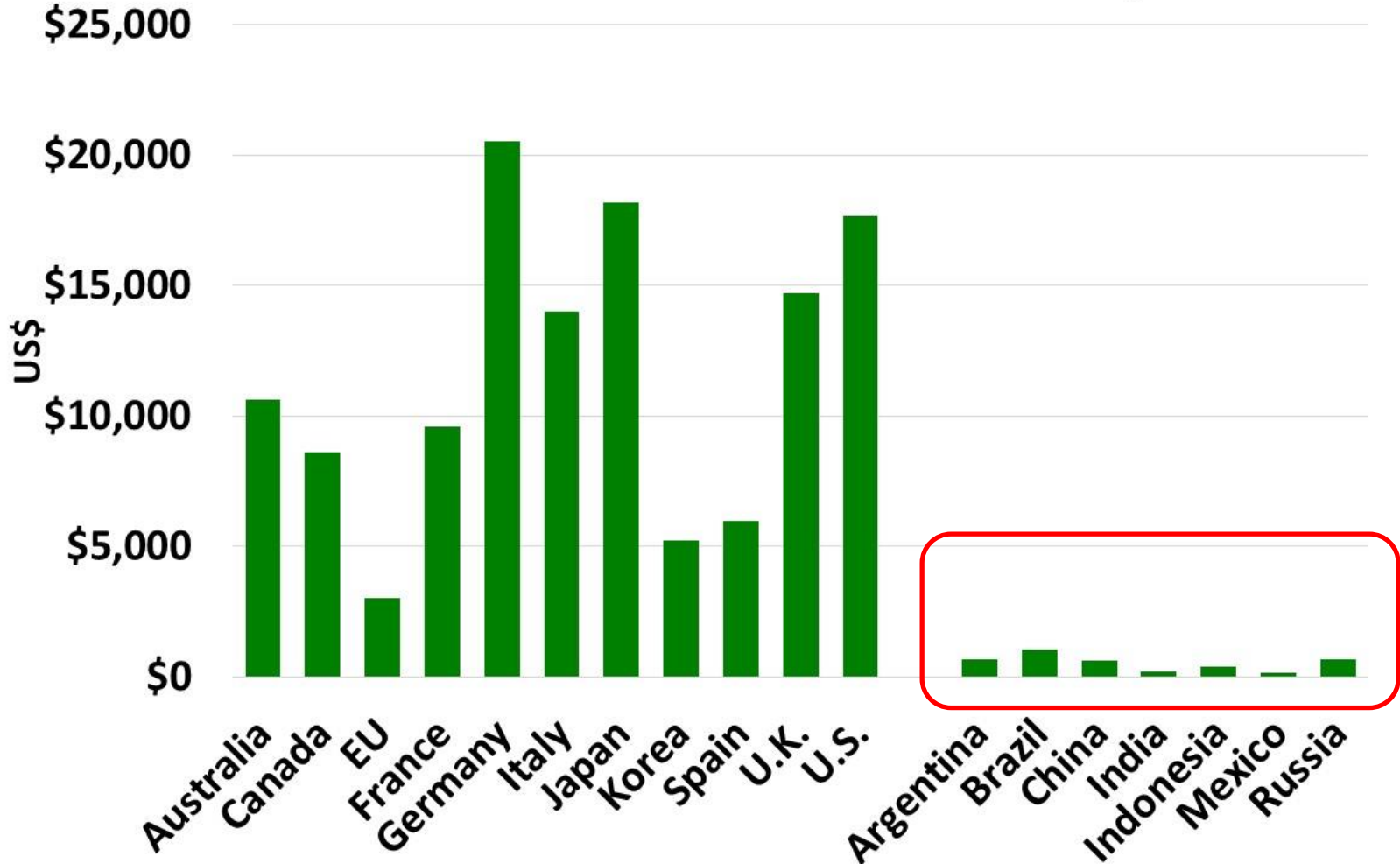
Recession Risks Rise

- **WHY?** As consumer stress increases, governments are limited to reduce rates or offer stimulus
- **Why not yet?**
 - The money flow was unprecedented and is still sloshing through the system
 - But household stress is now rising
- **Who first?**
 - China's economic data has been dismal in their post-COVID 2023 data
 - Those who received the least stimulus...



Stimulus was not universal...

COVID Stimulus - Per Capita



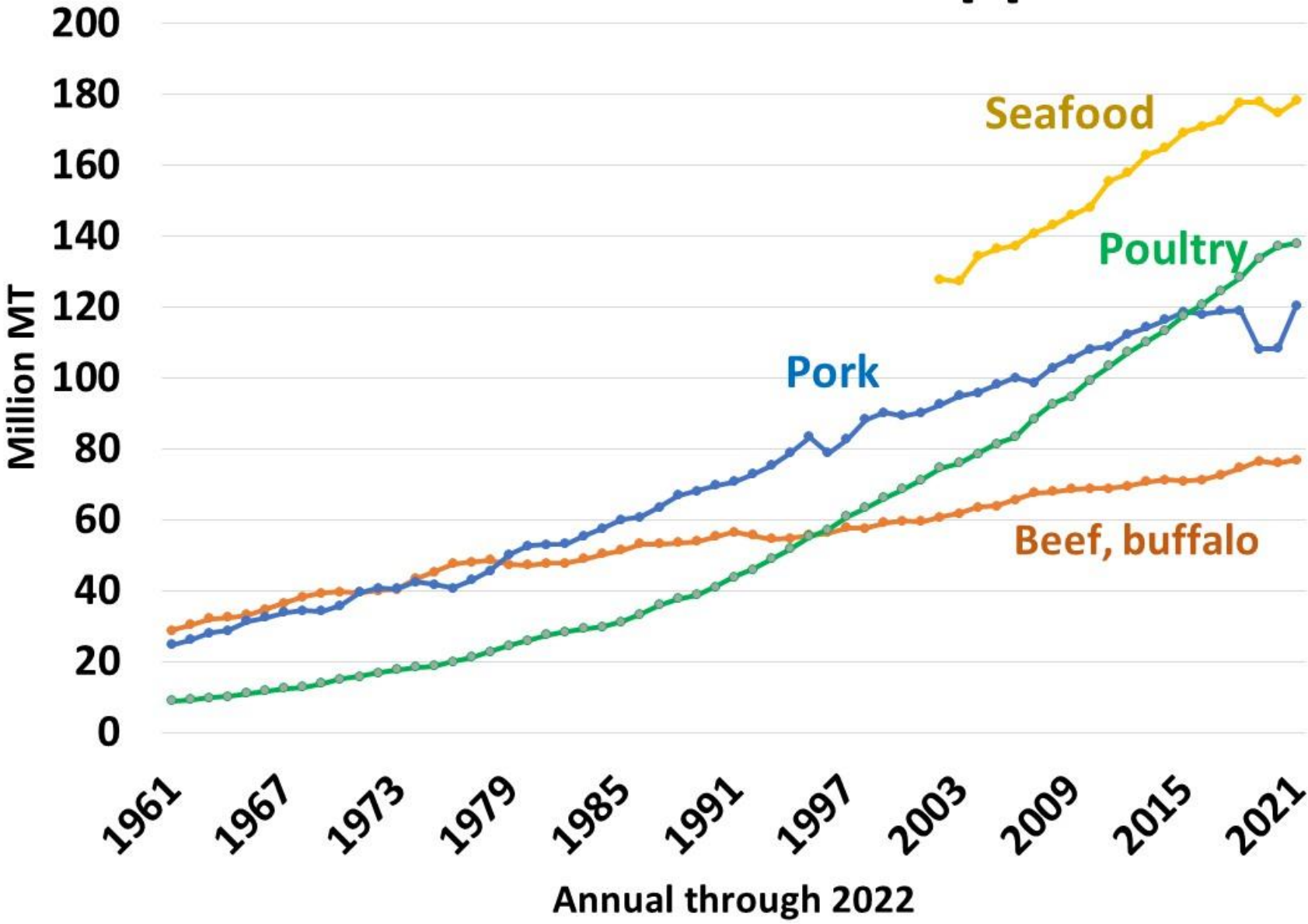
Global Poultry and Grains – Supply and Demand Fundamentals

But one detour first...

Global Protein: Liquidation in Sync

- **Australian cattle and sheep**: liquidation in progress to 2023-2024
 - rebuild to 2026-2027
- **U.S. cattle**: nearly 3 years of drought trimmed the herd by -9%
 - Expansion has yet to begin, but will tighten supplies further
- **U.S. hogs**: financial losses 8 of the past 10 months
 - H&P showed very slight liquidation, but losses expected to continue
- **U.S. chicken**: Processor losses accruing 10 of last 12 months
 - Egg sets remain -1% in Sep
- **Brazilian cattle**: Slaughter to decline -11% by 2026
- **China hogs**: Disease issues, weak demand, oversupply
 - 21 of the past 25 months have seen producer losses
- **EU Hogs**: Significant liquidation due to rising costs, policies
 - A further 10% decline by 2030 according to EU projections

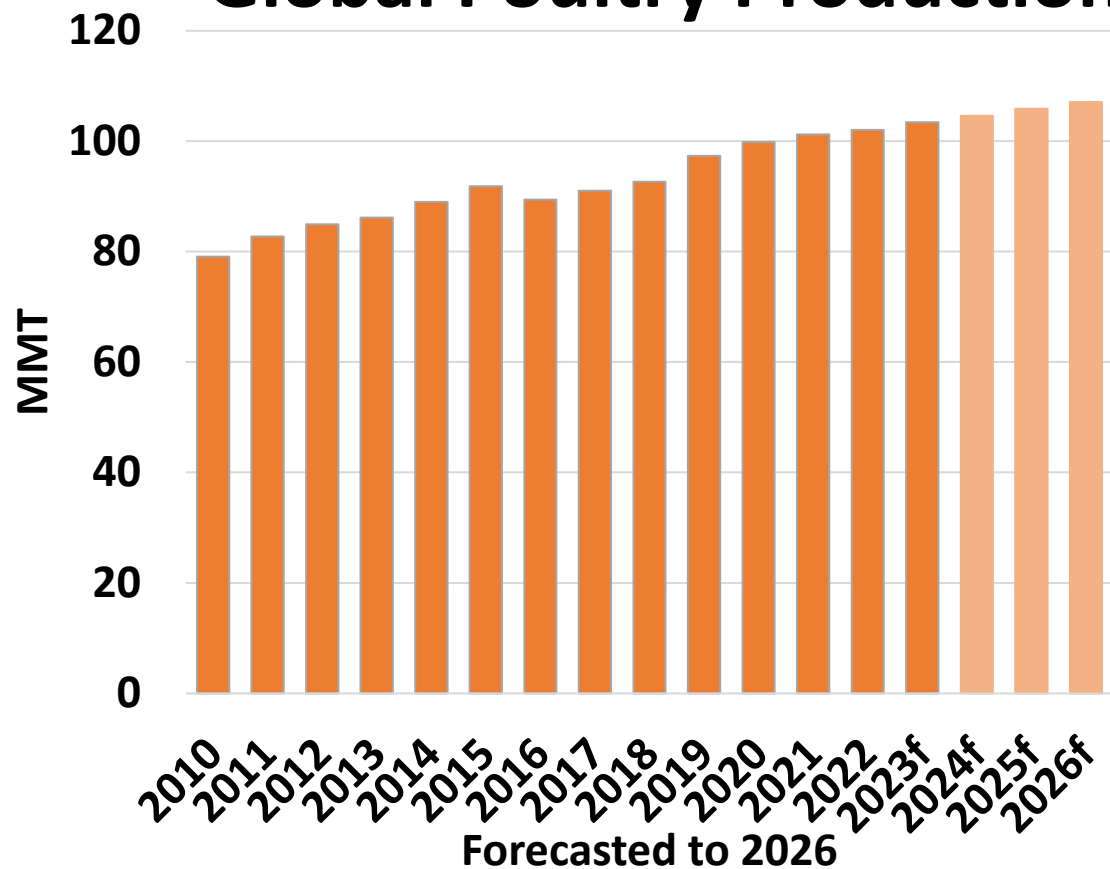
Global Protein Supplies



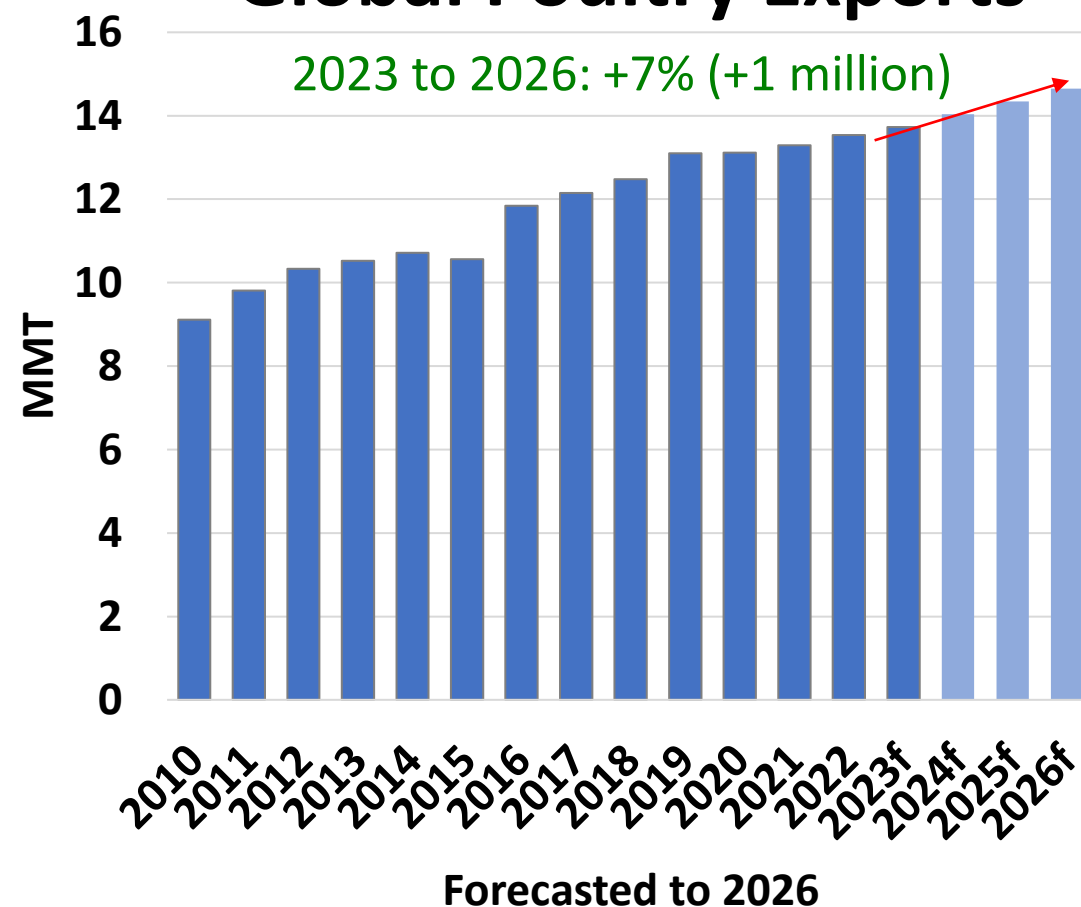
Source: FAOSTAT

Forecast: More Poultry

Global Poultry Production



Global Poultry Exports



Source: USDA/FAS, AgriTrends forecasts to 2026

U.S. Poultry: Financial Strains

- Tyson Foods closed two poultry plants earlier this year and are planning to close 4 more in 2024
- Pilgrims Pride (JBS) saw sales down -7% while gross profit fell -59%
- And this...
 - "Based on current science, Tyson branded products are transitioning to No Antibiotics Important to Human Medicine (NAIHM) which is expected to be complete by the end of the calendar year

THE WALL STREET JOURNAL.

BUSINESS

Tyson Foods Couldn't Produce Enough Chicken. Now It Has Too Much.

The company is closing chicken plants after some say it went too far in building up the business



Tyson Foods to drop 'no antibiotics ever' label on some chicken products

Global Feed Grain Markets

Market Factors:

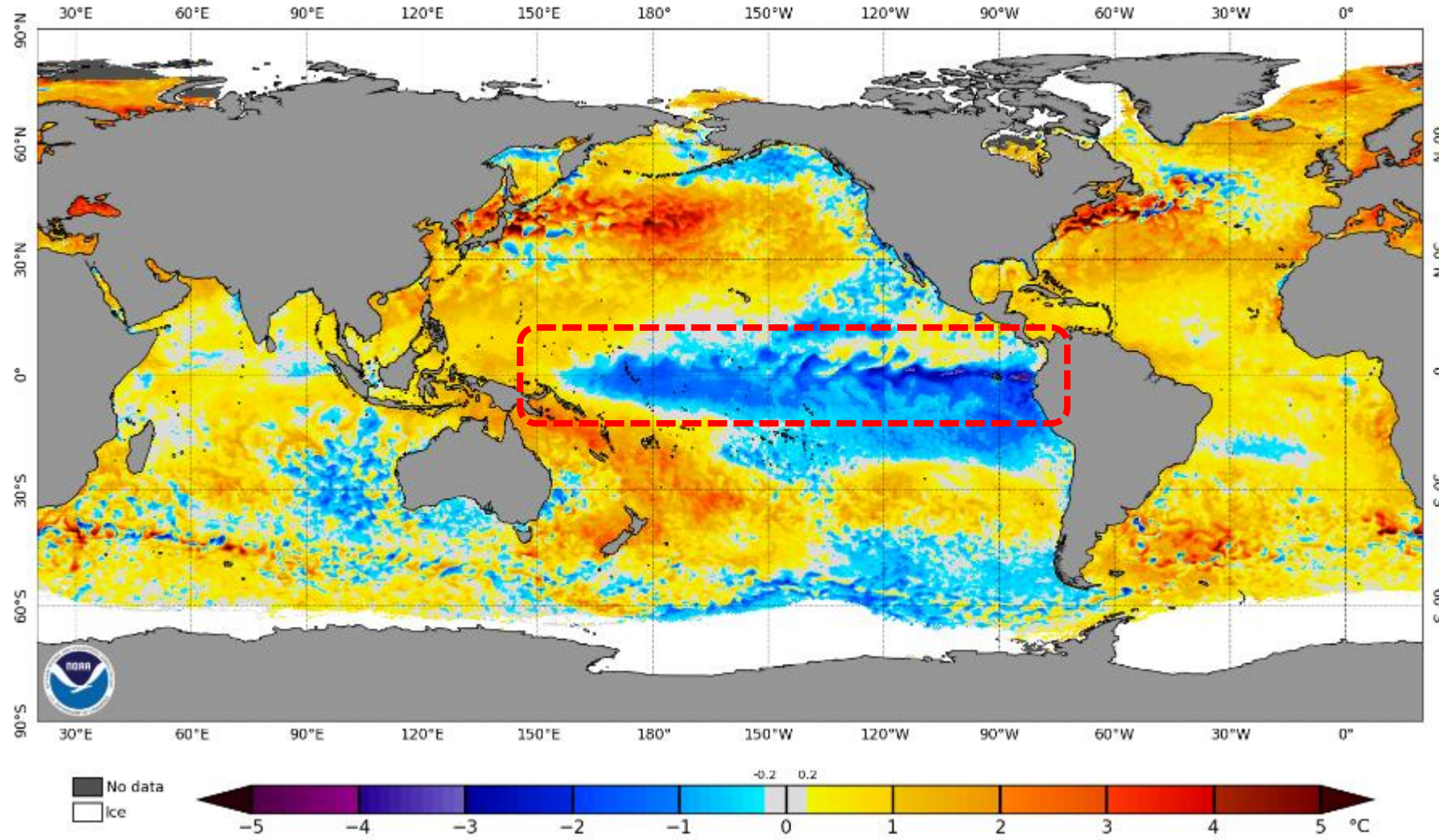
- Russia/Ukraine: “war premium” built into wheat prices
- Global beef and swine herd liquidations over the next 3 years will have a longer term (and slight) impact in grain markets
- Energy policy: ethanol and biodiesel; new U.S. biodiesel plants will lead to increased soymeal supplies
- China....
- Weather remains the constant uncertainty...



It all happens on the Pacific Equator...

NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 20 Nov 2022

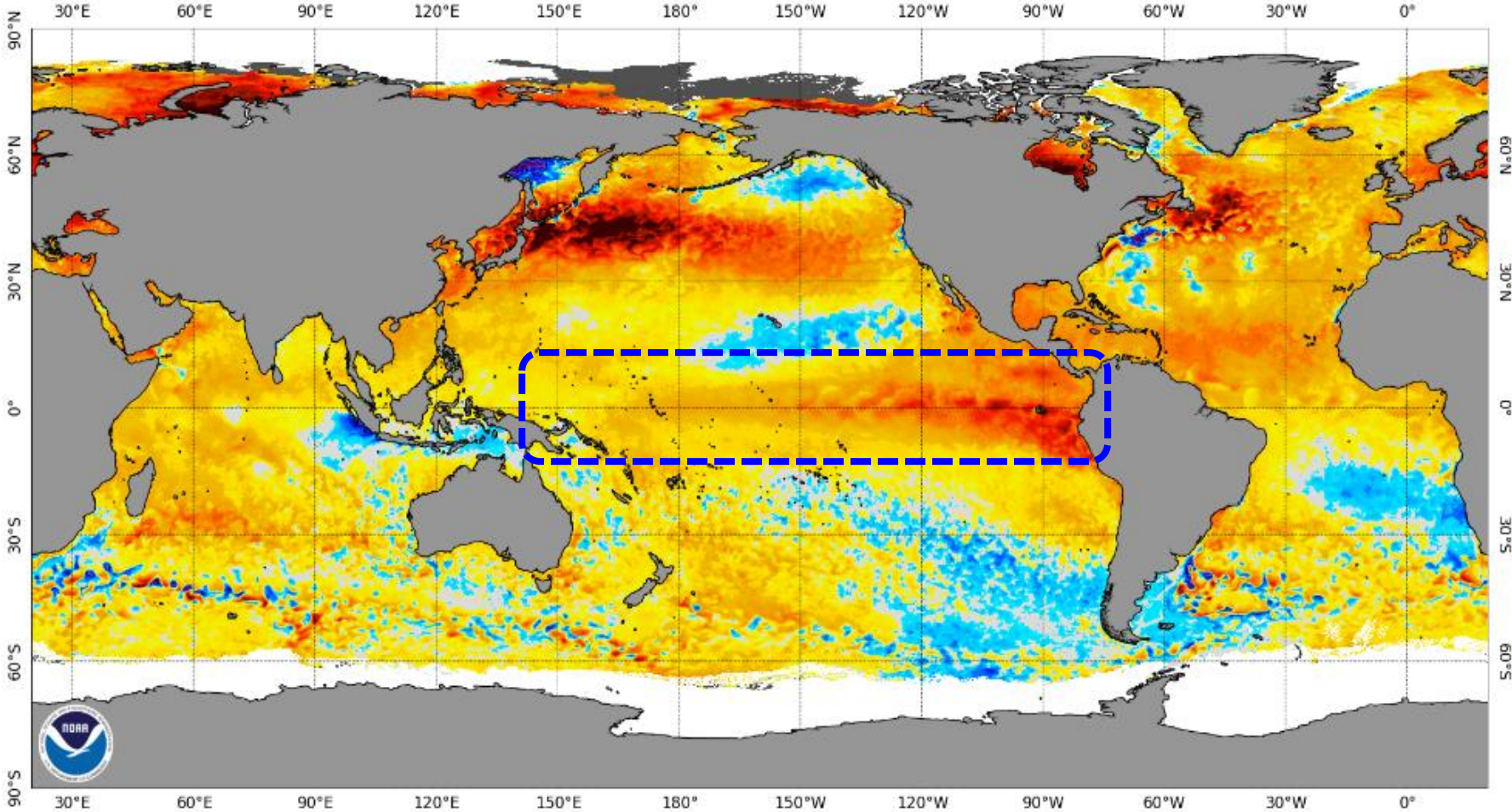
Nov. 20, 2022



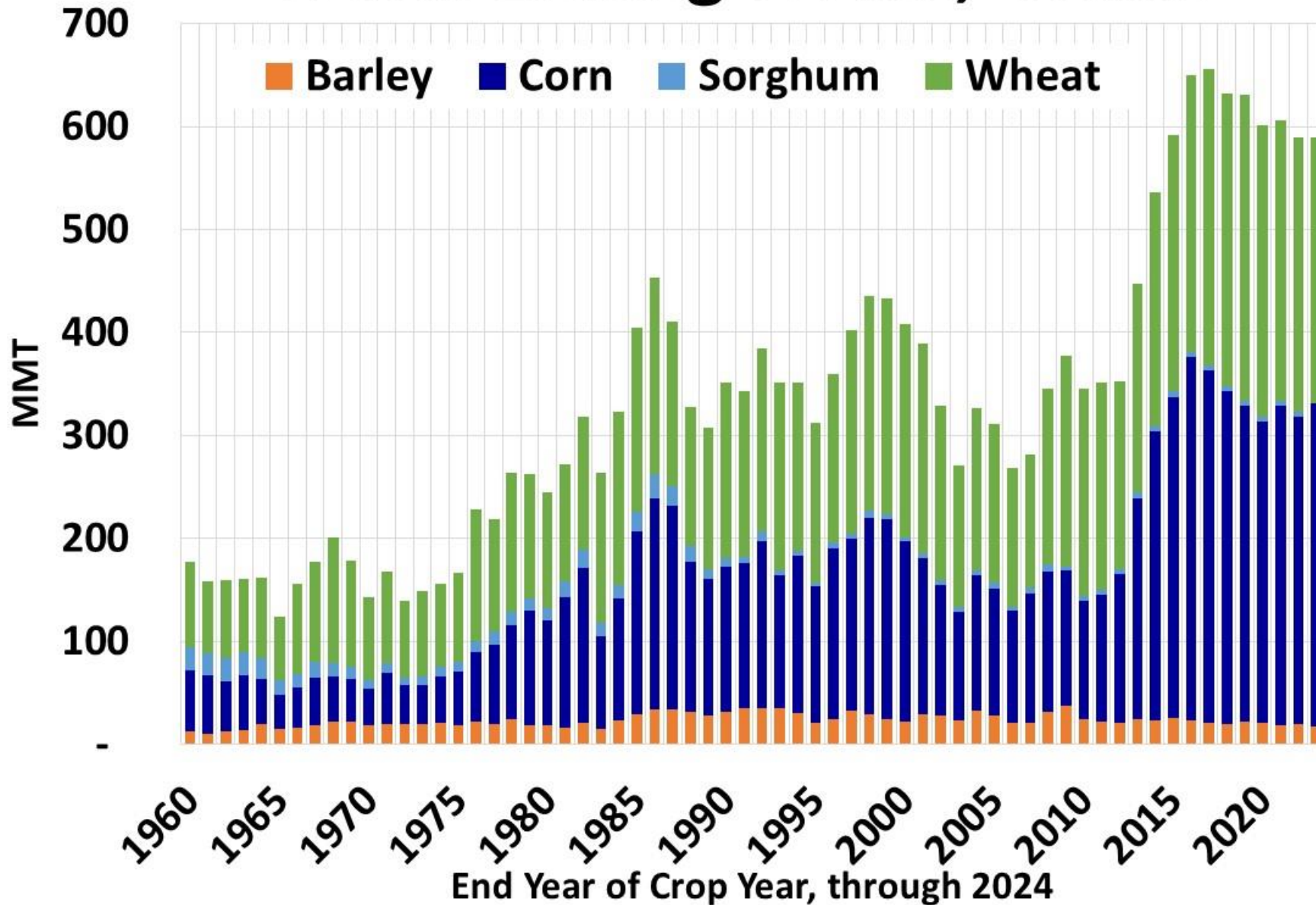
El Niño Returns

NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 23 Sep 2023

Sep 23, 2023



World Ending Stocks, Grains



We are not
running out of
grain

...yet

Global Grains Watchlist

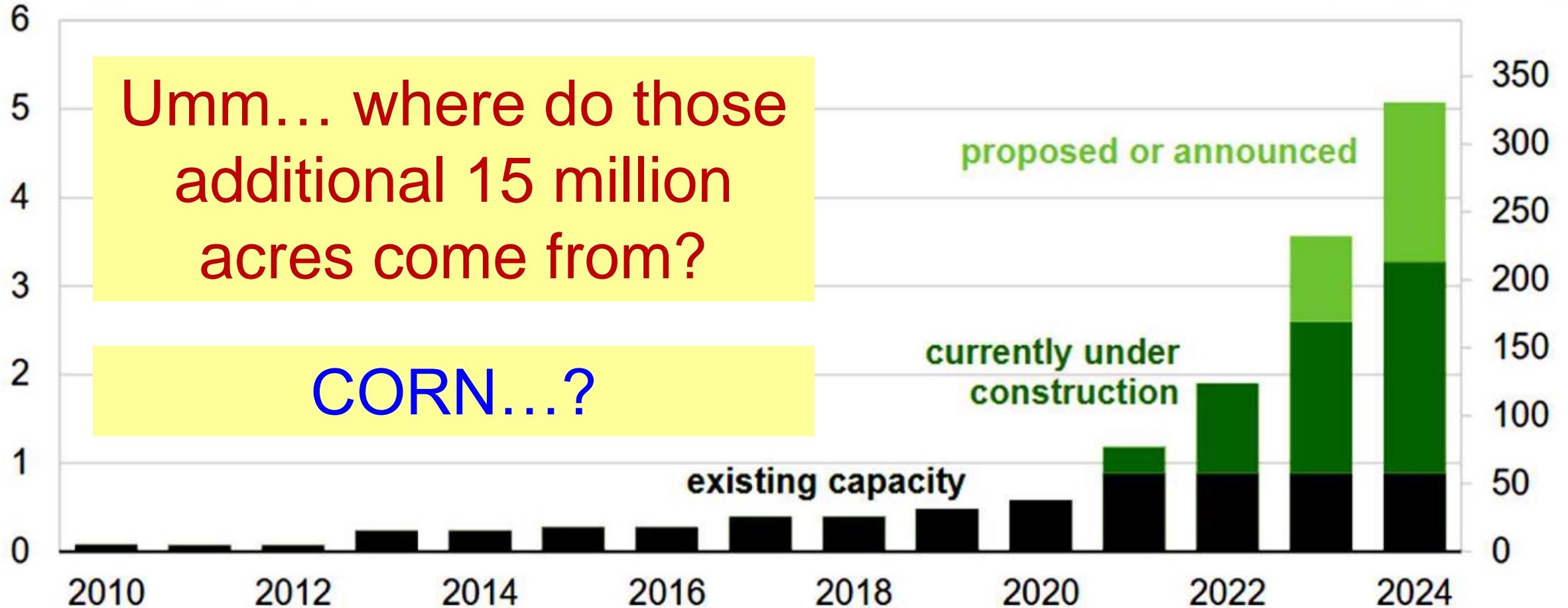
- Ukraine/Russia conflict
- Mexico's threat to ban U.S. GM corn
- China's pivot from the U.S. to Brazil
- **And – the new American Renewable Diesel scheme (?)**
 - A bad idea whose time has come...
 - Politicians are **SOLIDLY** behind this
 - All told, the increase in crush capacity will take about 15 million more acres of soy production in the U.S.

Existing and expected U.S. renewable diesel production capacity (2010–2024)



billion gallons per year

thousand barrels per day



Umm... where do those additional 15 million acres come from?

CORN...?

Source: Graph by the U.S. Energy Information Administration (EIA), based on data from company announcements in trade press

Corn prices higher, SBM lower

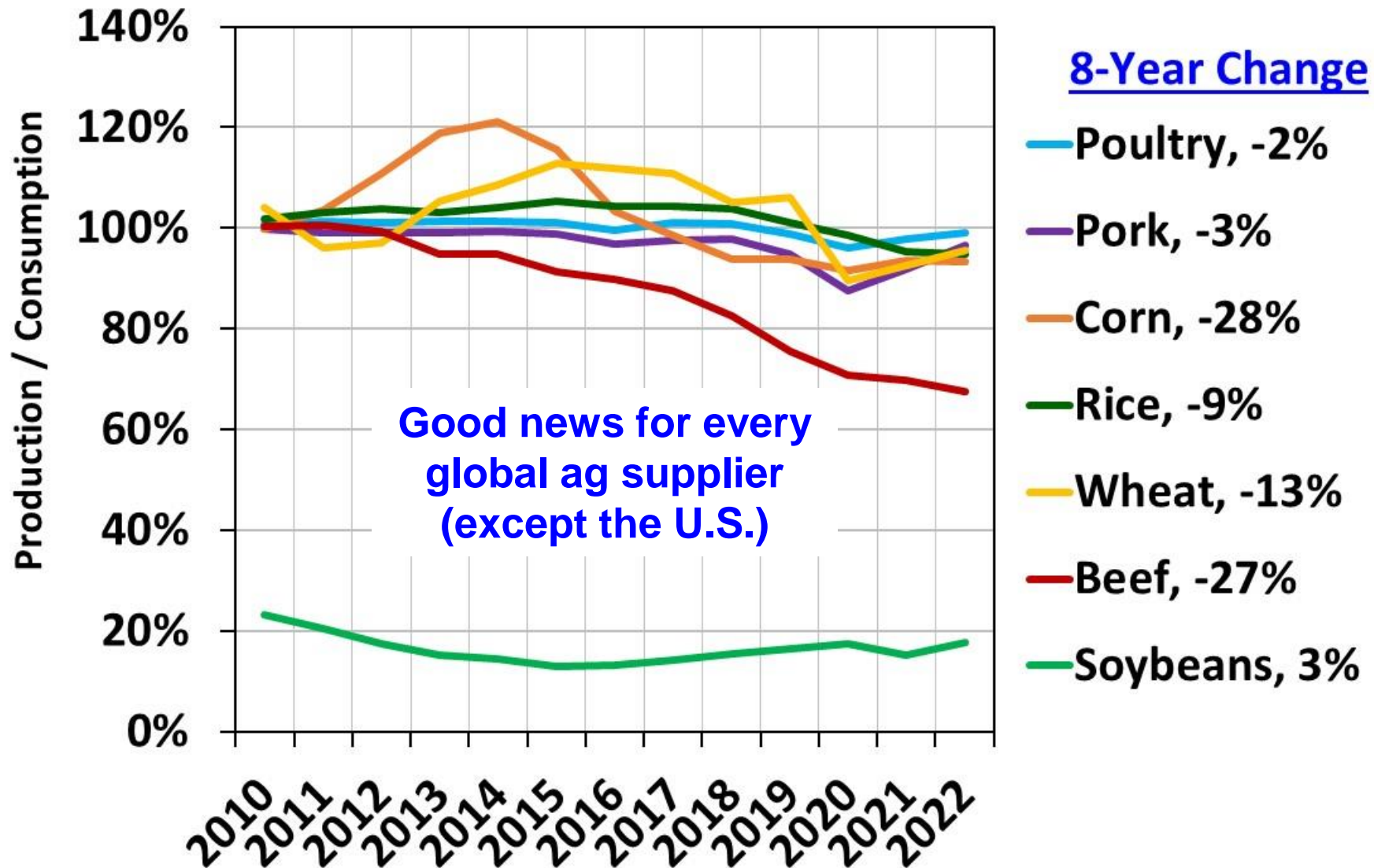
A likely scenario:

- Corn prices jump \$2/bushel
- Soybean meal falls by half
- Fat prices double

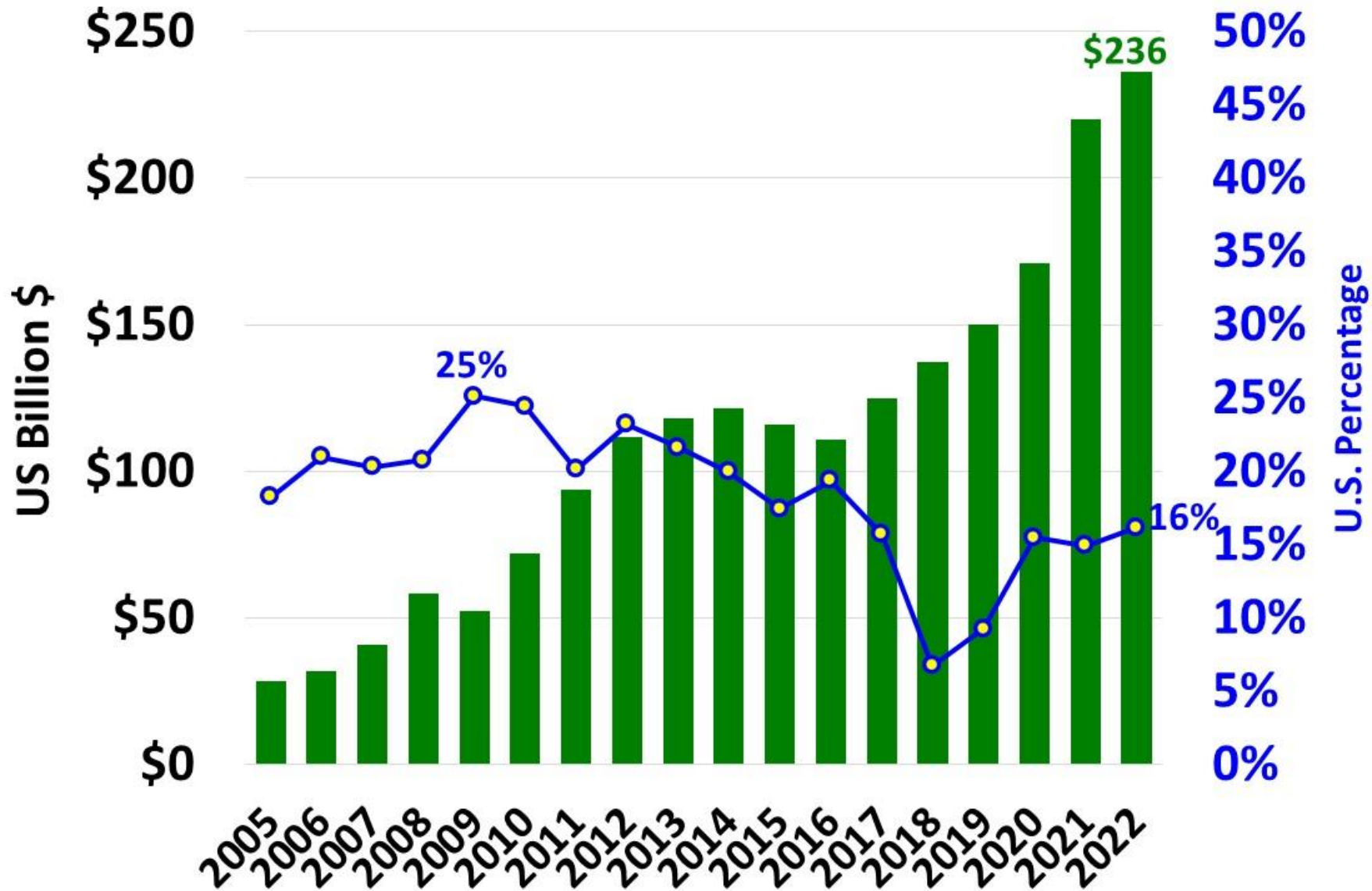
Broiler diet			
	Baseline	Future	Change
Corn	\$ 6.00	\$ 8.00	33%
SBM	\$ 400.00	\$ 200.00	-50%
Fat*	\$ 0.75	\$ 1.50	100%
Diet cost	\$ 334.00	\$ 291.00	-13%

Other Market Issues

China Self-Sufficiency



China Agriculture Imports



China is seeking to “diversify” their agriculture import sources

HPAI Returns to Canada

- Cases have been found in commercial poultry operations in both Alberta and Saskatchewan this month.
- HPAI is seasonal with cases expected to rise into fall/winter in North America due to migratory waterfowl
- This portends more cases moving south into winter...

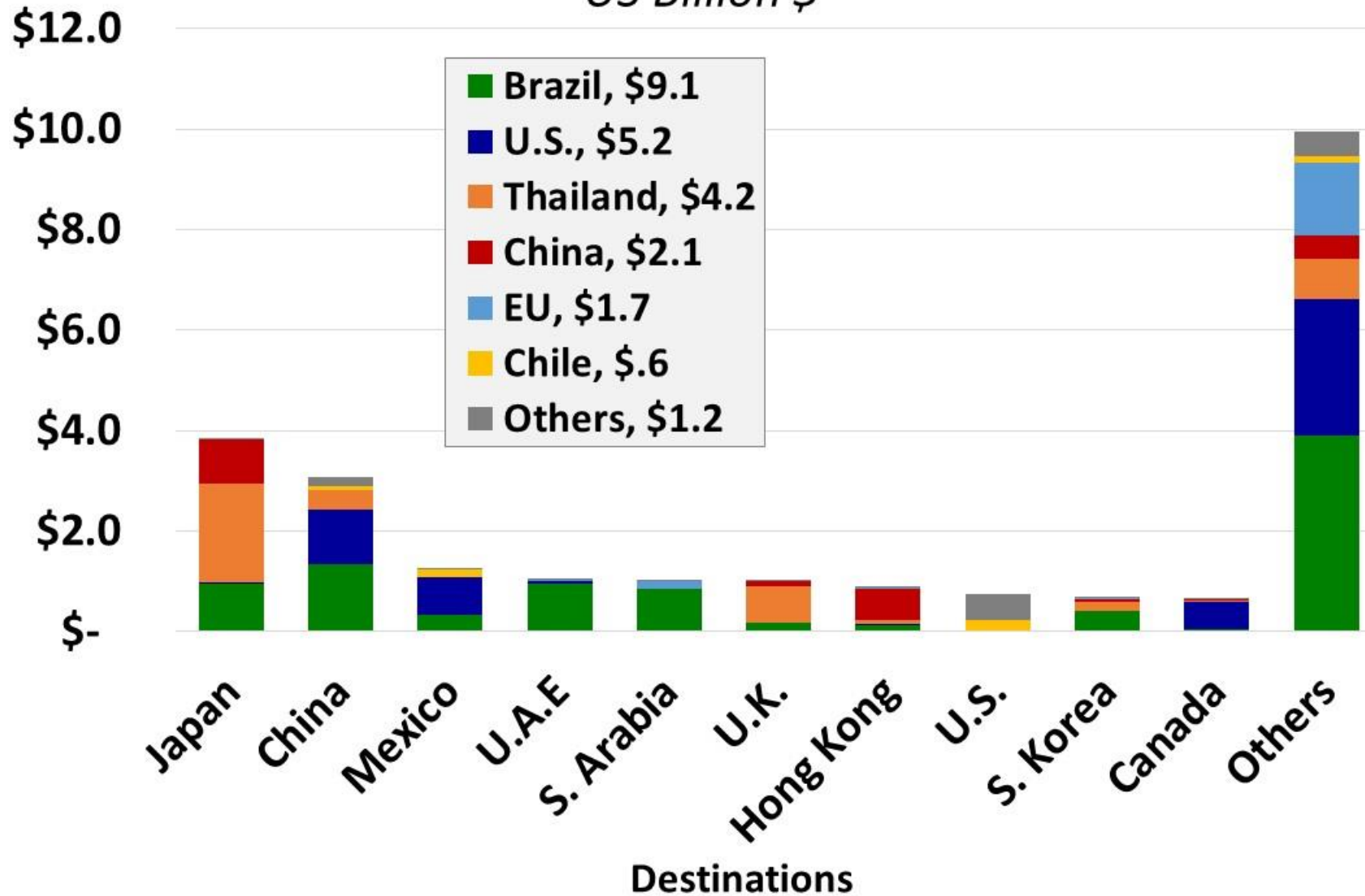


Brazil's bird flu outbreaks increased to 109

- As of September 24, Brazil had diagnosed 109 outbreaks of avian flu, none of them in commercial birds, reported the Ministry of Agriculture and Livestock (MAPA).
- The states with the most outbreaks detected are Sao Paulo (32), Espírito Santo (29) and Rio de Janeiro (18).
- In any case, Brazil is still considered free of avian flu by the WOAHP because cases in commercial birds continue to be undetected.

Global Poultry Exports, 2022

US Billion \$

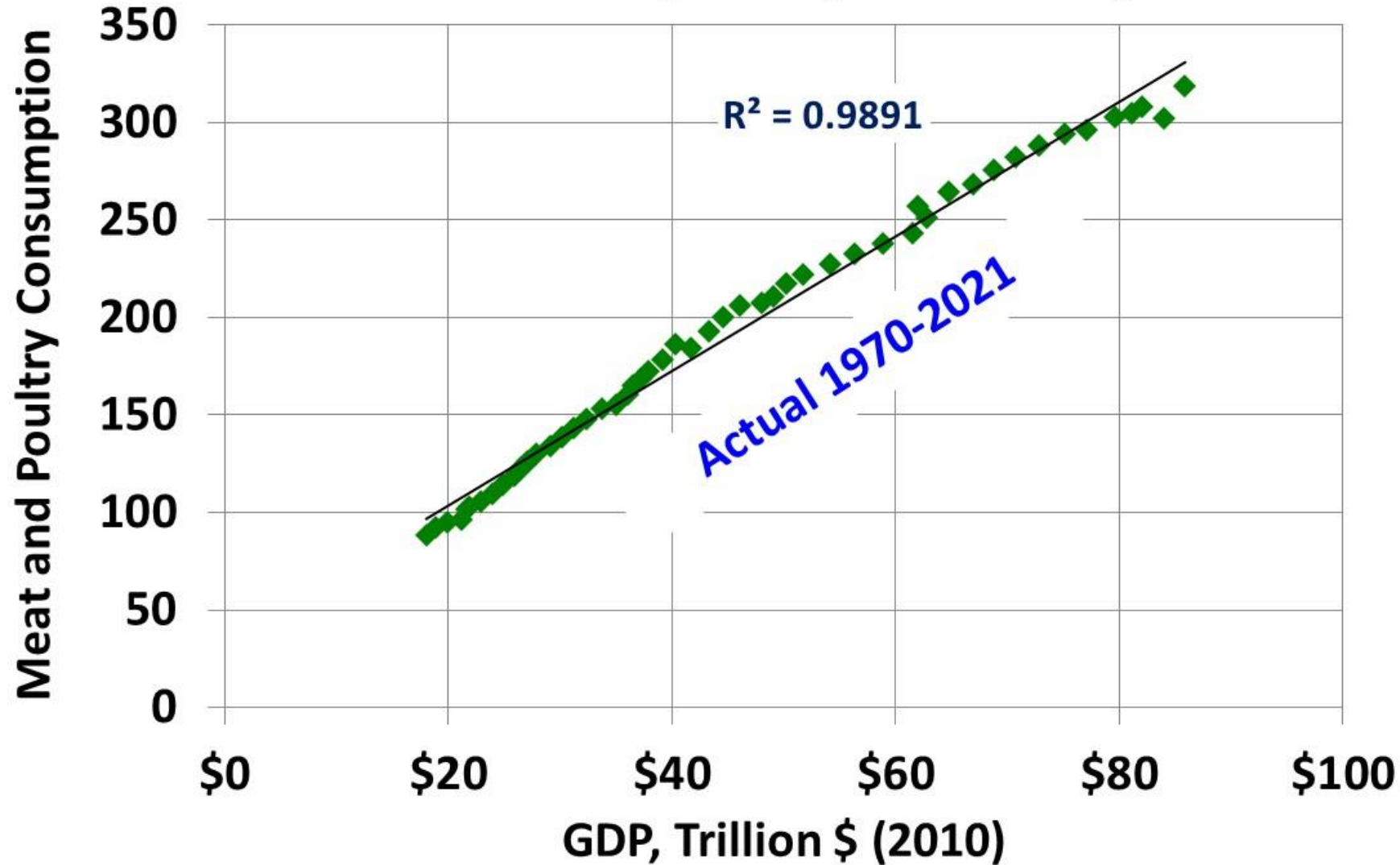


Domestic HPAI found in Brazil would likely lead to trade bans by key partners

Source: USDA/ERS

10 Year Forecasts

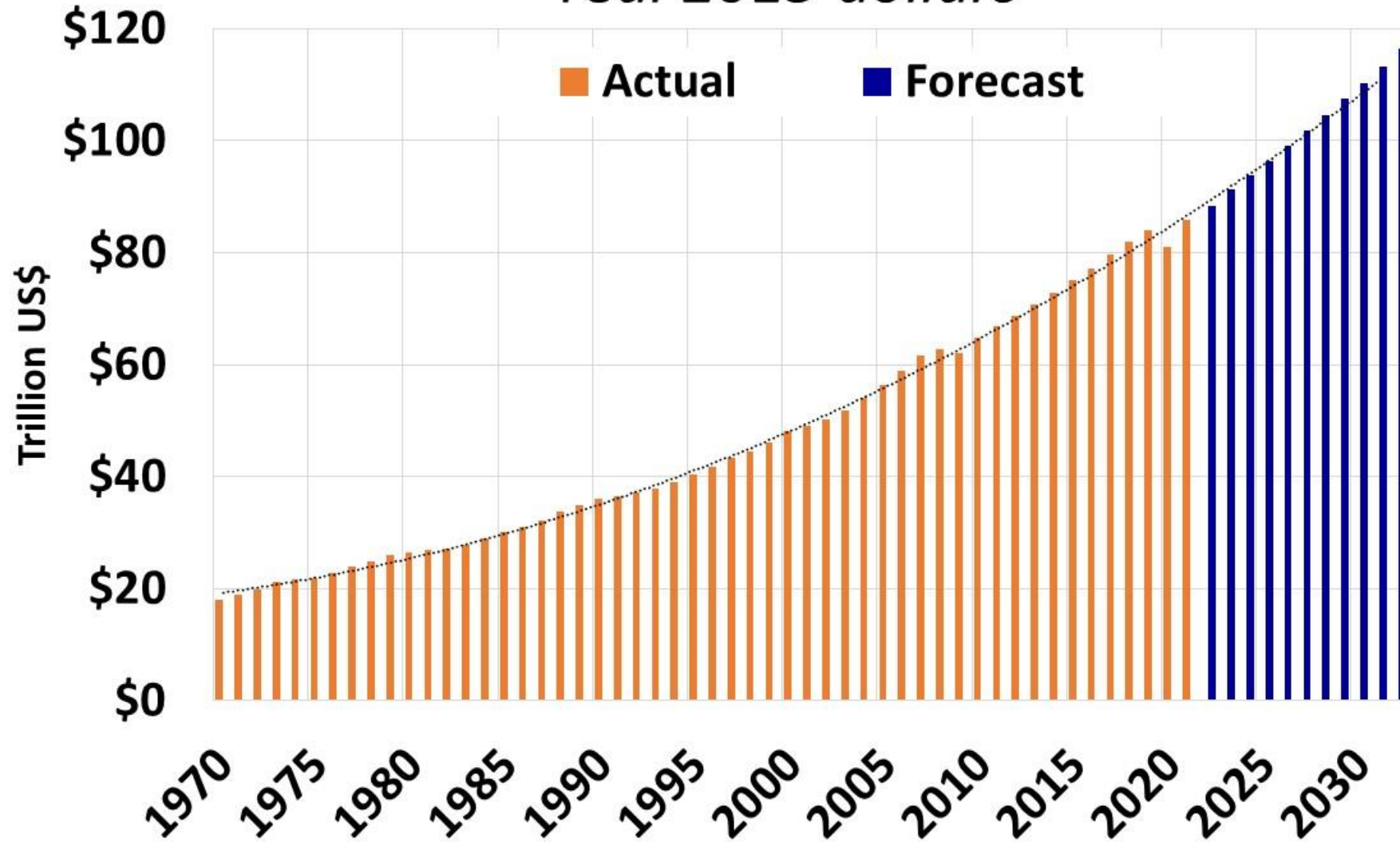
Global GDP and Meat & Poultry Consumption, Annually



Source: UN/FAO

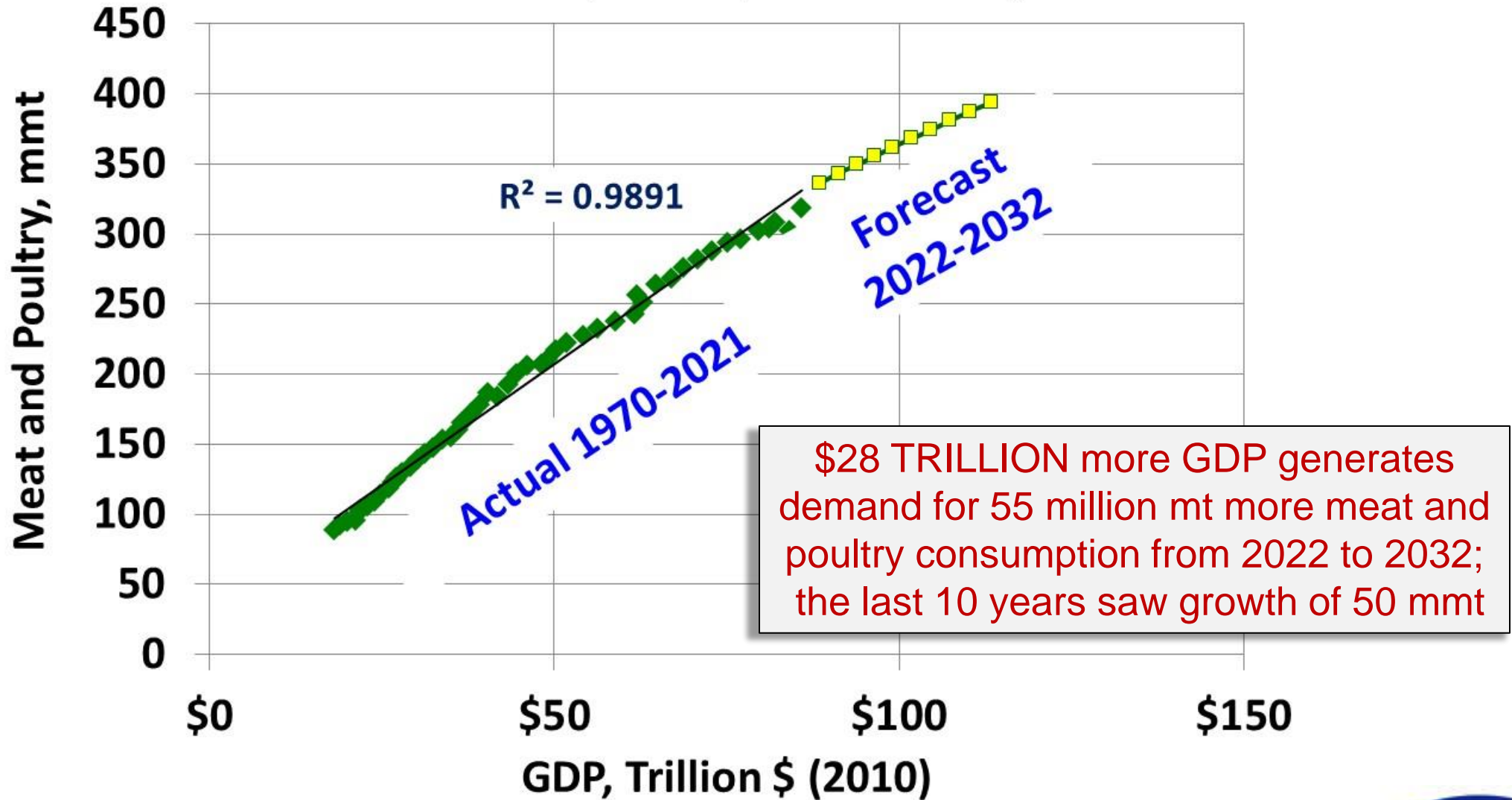
Global GDP

real 2015 dollars



Source: FAO, UN, IMF, World Bank, AgriTrends

Global GDP vs. Meat & Poultry Consumption, Annually

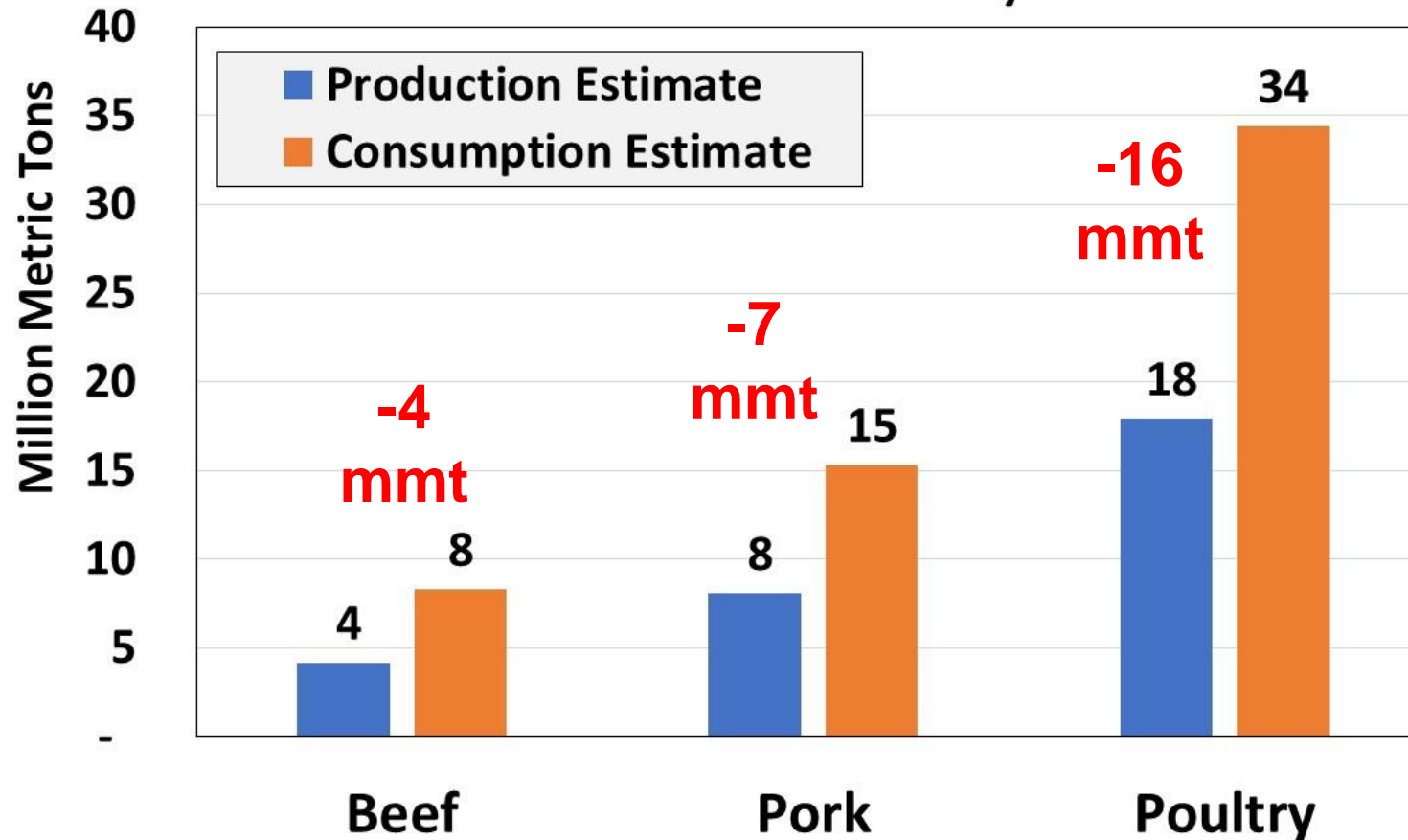


Source: IMF, World Bank, UN/FAO, forecast uses 2000-2020 as base years

Production and Consumption Estimates

10-Year Projections:

Global Meat and Poultry Increases



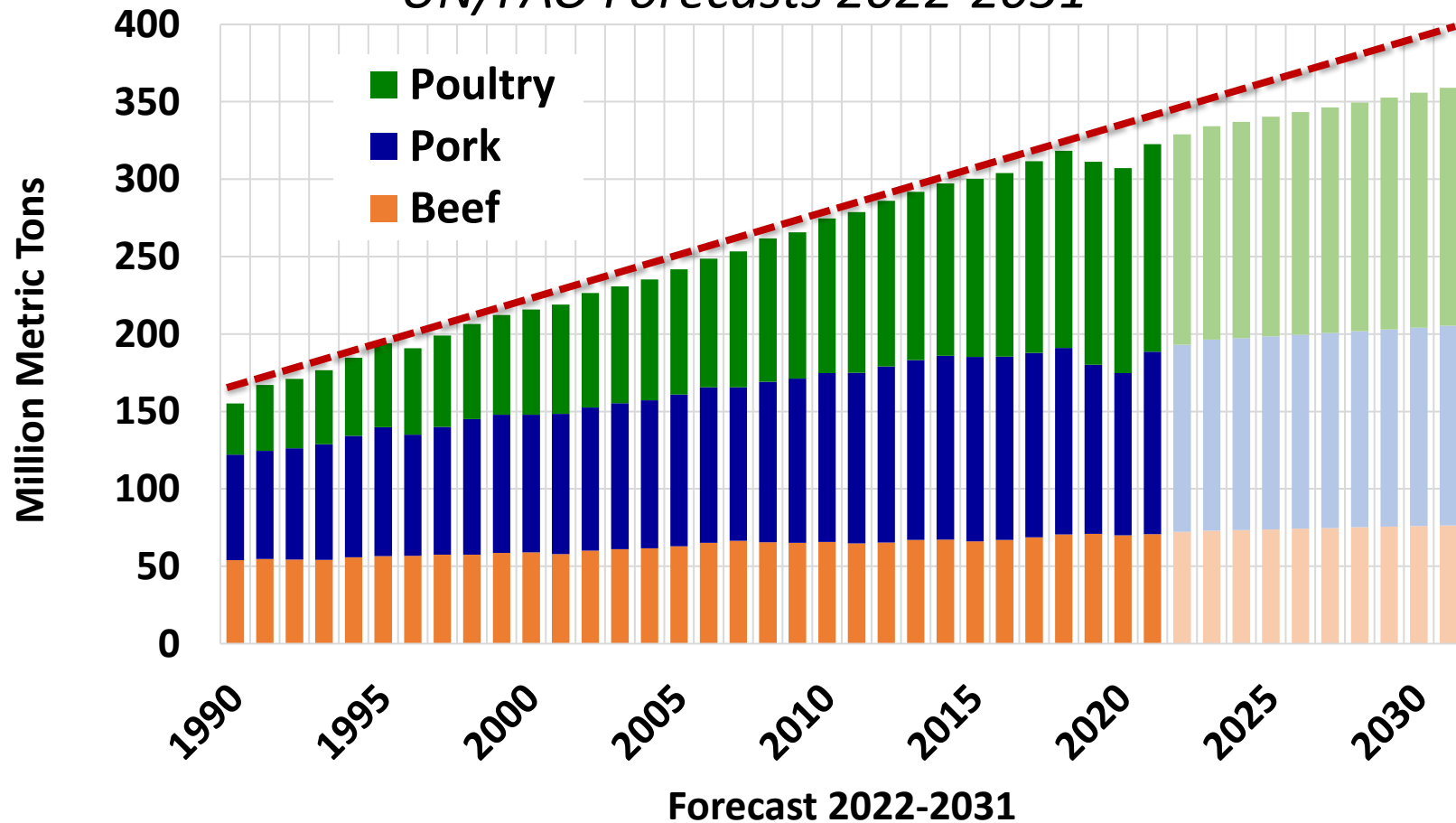
Production estimate: FAO <http://www.fao.org/publications/oecd-fao-agricultural-outlook/2021-2030/en/>

Consumption estimate: AgriTrends Global Demand model (2022-2031)

Global Supplies to TIGHTEN SIGNIFICANTLY

Global Meat & Poultry Supplies

UN/FAO Forecasts 2022-2031



Source: UN/FAO, AgriTrends

Over the past 20 years, global meat and poultry production have averaged 4.8 million metric tons growth each year. The UN/FAO forecasts suggest that over the next 10 years, annual growth will average just 3.0 million metric tons per year.

Both population and incomes are rising globally. The highest bidders will get the meat

Final Thoughts

- Sticky inflation is increasing recession risks globally
- Global beef and pork supplies are tightening
 - In sync with each other for various reasons globally
 - Weather and margins are the key drivers
- Higher prices and profits out there... in the future
 - For those who can endure the present
- Threats and opportunities abound!
 - HPAI, China, biodiesel, climate policies...
 - Is there pushback against animal welfare/climate policies?
 - There SURE WAS against alt protein!



“Don’t bet on the end of the world. It only happens once – and the odds are really against it.”



Thank You

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Beyond Meat, Inc. (BYND)

NasdaqGS - NasdaqGS Real Time Price. Currency in USD

16.03 USD

-50.76 (-76.00%) ↓ past 5 years

Closed: 5 Oct, 7:55 pm GMT-4 • Disclaimer

After hours 16.20 +0.17 (1.06%)

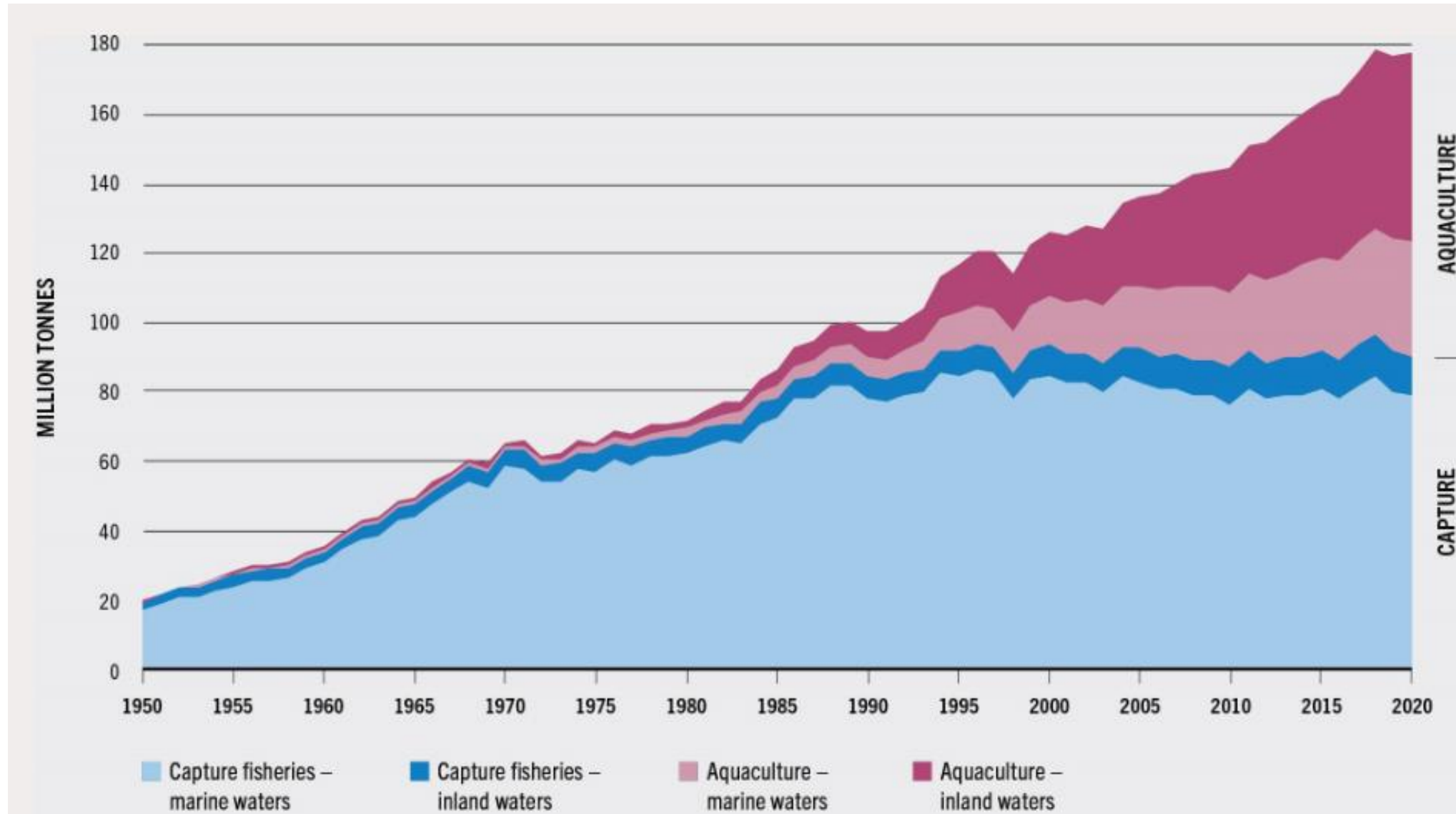
1D | 5D | 1M | 6M | YTD | 1Y | 5Y | Max

**BYND has lost
-94% of its
value**



The customers have spoken.

Global Seafood Supplies



180 MMT
in 2020

Wild-caught
stalled at 80
mmt

Labor Union Wins in 2023

- From September 1 of last year through August 31 of this year, unions initiated 70 strikes (*Cornell University*)
- Teamsters at UPS
- Pilots at American Airlines
- UAW gains pending
- Warrior Met Coal in Alabama
- Railroad workers threatened to strike, gained pay hikes
- Hollywood actors (SAG/AFTRA) recently settled (160k actors)
- **Who's next: Healthcare... and anyone**
 - Average household wages cannot pay for the average U.S. home

The Post-Pandemic Business Model: Supply Management

- Stubborn inflation, sustained by tight labor markets, has pressured companies large and small to **ration output and hold high prices**
 - This is the new model of dealing with heavy inflation
 - Margins can be maintained, for now, by throttling back output and keeping prices HIGH
 - **Consumers pay the price** (or at least those who can afford to will)
- It's becoming a universal model...

U.S. Output and Prices in 2023

versus the 2015-2019 avg

