Agriculture By the Numbers

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Macroeconomic Data: A Mixed Bag for the Fed to Sort Out

Bryon J Parman, Associate Professor/Extension Agricultural Finance Specialist

In the most recent Federal Reserve meeting, held Sept. 16-17, 2025, the Federal Reserve Board of Governors voted to lower the federal funds rate by 25 basis points (0.25%). This sets the target federal funds rate range at 4%-4.25%, which is the lowest since approximately December 2022 when the Fed was pushing rates higher to fight inflation. Many political and industry players had been calling for the Fed to cut rates for several months, fearing that economic growth was slowing down and the job market was becoming tighter. Certainly, unemployment has increased from its low in 2022, when it was hovering around 3.5%, to its current level of around 4.3%. However, while a 4.3% unemployment rate is still generally on the lower end, recent job data from September 2025 suggests that the private sector shed 34,000 net jobs, indicating a cooling off in the job market.

With respect to overall economic growth, first-quarter 2025 GDP was -0.5%, igniting fears of a pending recession. However, second-quarter GDP growth jumped to 3.8%, the second-highest quarter in three years, and projections from the Atlanta Fed for the third quarter are for GDP growth to be 3.9%. In the U.S., consumer spending drives growth, and so far in 2025, January is the only month where consumer spending declined from the previous month, indicating consumer spending remains fairly robust.

While consecutive quarters of 3.8% and 3.9% growth would be considered strong, and consumer spending remains robust, many political and industry players remain uncertain about the longer-term impacts of tariffs on economic growth and inflation. Well before any trade negotiations or tariffs began, inflation had become a major problem, peaking at nearly 9% in June of 2022 and slowly falling to just below 3% over the last year or so. Inflation has yet to fall below the Fed's target of 2% since early 2021, and some worry that the long-run impacts of tariffs will include more inflationary pressure.

While there are tangible data points to consider when it comes to inflation, such as GDP growth and unemployment rates, a very real factor, but not as easy to quantify, is the public expectations for

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Macroeconomic Data: A Mixed Bag for the Fed to Sort Out

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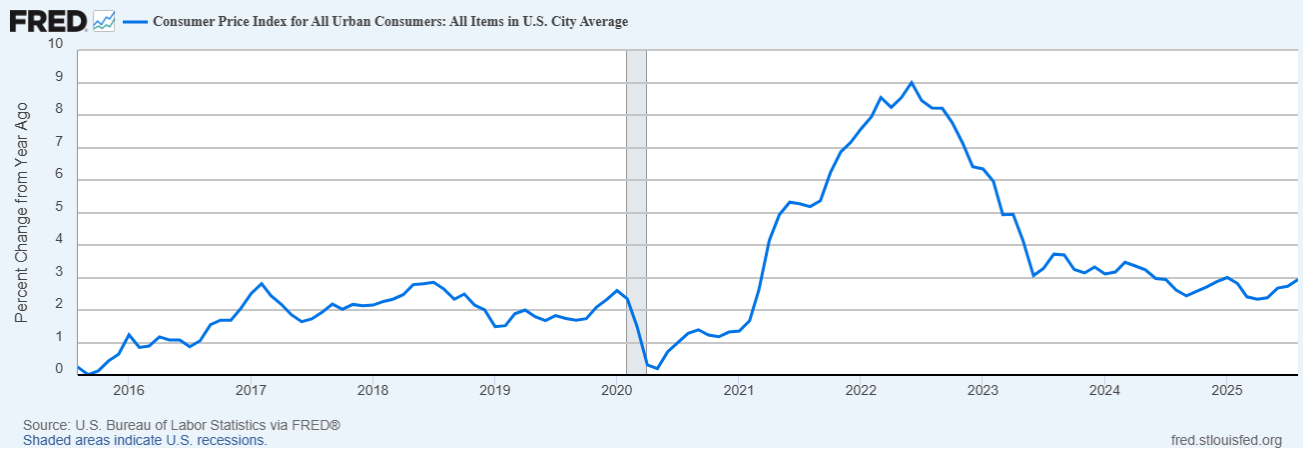
Figure 1: St. Louis Federal Reserve Monthly (Annualized) Rate of Inflation. 2015-2025

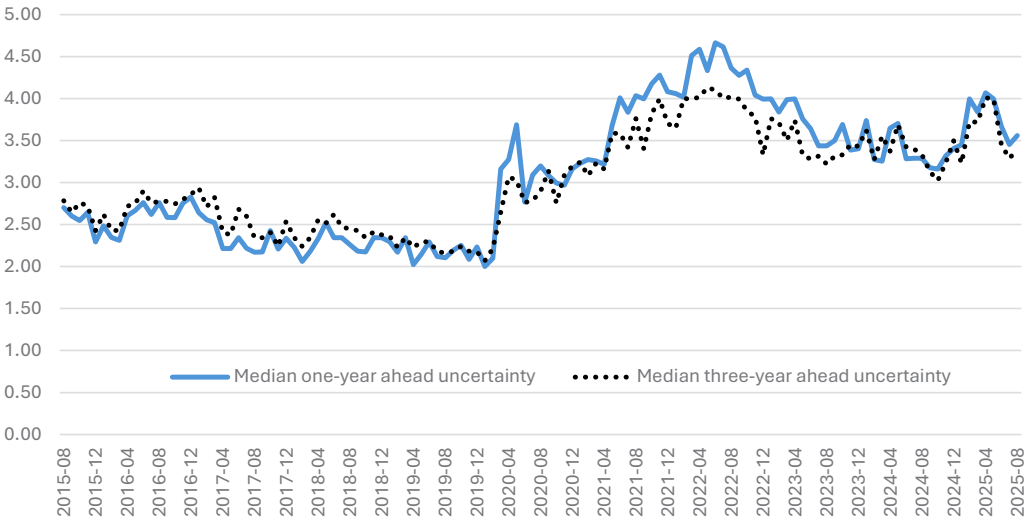


inflation. In some ways, it can become a self-fulfilling prophecy where people expect prices to increase, so they rush out and buy items they want or need before this happens. If enough people do this, there is a sudden surge in demand, and prices rise if supply cannot adjust quickly enough. We have seen this happen many times to individual items where fears of a shortage (whether true or not) cause people to buy and hoard these items, driving prices higher. The reverse is also true; when prices are falling, and people believe prices will continue to fall, they tend to wait to make purchases, putting more downward pressure on prices.

Figure 2 shows survey results for inflationary expectations from the public for the next year and the next three years. Results from August 2025 indicate that the public does not expect inflation to decline in the coming year; rather, they anticipate prices to continue increasing at a rate faster than the current 3.5%. It would likely take a major economic event or policy shift to move the public's expectations off their current path. It is possible that resolutions to all the ongoing trade negotiations will be enough to change the trajectory.

The final point to remember is that any actions the Fed takes will not have an immediate impact, and some of their actions can be offset by others. For instance, while lowering the federal funds rate tends to push consumer interest rates lower, the Fed rolling assets off its balance sheet (which it has been doing now for some time) tends to push rates higher. Additionally, it may be several months or even several quarters before we fully realize any impact. There are other variables that may come into play in the meantime, offsetting actions by the Fed related to trade, global conflict or federal government policy, to name a few. In any case, there is currently no consensus on the direction of monetary policy, given the data. Rapid changes in the geopolitical climate or trade have the potential to offset today's Fed policy decisions in the future.

Figure 2: New York Federal Reserve Consumer Inflationary Expectations. 2015-2025



Beef Exports Impacted by High Prices and Tariff Negotiations

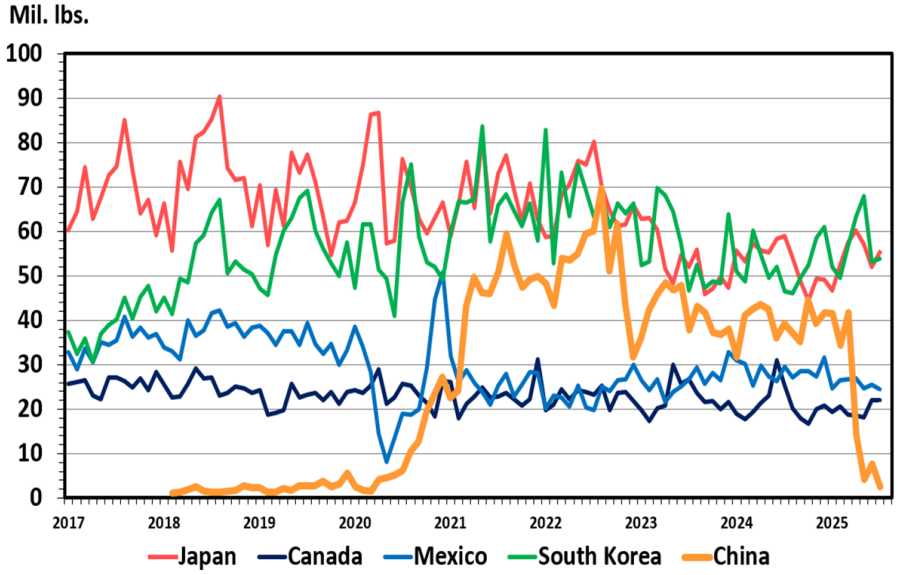
Tim Petry, Extension Livestock Marketing Specialist

The United States Department of Agriculture released the latest U.S. beef trade report on Sept. 5, and as expected, beef exports were impacted by declining U.S. beef production, record-high beef prices and ongoing tariff negotiations. The most recent data are for July, because it takes time for the USDA to compute all the numbers.

The USDA Economic Research Service publishes monthly and annual U.S. livestock and meat trade data by country. That report with historic data is available at www.ers.usda.gov/data-products/livestock-and-meat-international-trade-data.

Beef exports in July were down about 48 million pounds (or 19%) over last year, the lowest in several years. For January through July, beef exports were down 9%.

U.S. Beef Exports to Major Markets — Carcass Weight, Monthly



Source: USDA ERS and FAS

Historically, the top U.S. beef export markets have been Japan, South Korea, Mexico and Canada. In 2021, China quickly emerged as the third-best market after the U.S.-China Phase One trade agreement became effective in March 2020. Exports to South Korea have been steadily increasing, allowing it to challenge Japan for the top spot over the last several years.

July beef exports to China were the hardest hit. The volume was reduced to just a trickle. Exports declined from about 42 million pounds in March to 2.5 million in July. China's retaliatory beef tariffs on U.S. beef were 147% in April until May 14. Then, a series of negotiations has allowed rates to decline to 32%. However, most U.S. beef is currently not allowed to enter China because China has not renewed the expired registrations for most U.S. beef plants.

U.S. trade negotiations with China are dynamic and continuing on a daily basis.

A bright spot for July beef exports was with South Korea, where exports increased 13%. Year over year, through July, beef exports to South Korea were up 9% in both volume and value. A trade agreement with South Korea was announced in July, but with no details on meat. A bilateral beef trade agreement with South Korea was reached in 2020. The U.S. Meat Export Federation (USMEF) has made South Korea a focal point for increasing beef exports.

Beef exports to Japan, Mexico and Canada are down slightly this year due to higher beef prices. An agreement with Japan was announced in mid-September, but with no details on meat. A bilateral beef trade agreement with Japan was ratified in 2020. The 2020 United States-Mexico-Canada Agreement, which allows beef to move duty-free among the three countries, remains valid.

An increase in beef exports to expanding markets in the Caribbean, Central and South America is positive.

After a long-term increase in U.S. beef exports, a peak volume of 3.5 billion pounds was reached in 2022. That coincided with the long-term increase in U.S. beef production, which also peaked in 2022, buoyed by drought-induced large beef cow slaughter.

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Beef Exports Impacted by High Prices and Tariff Negotiations — continued from page 3

Both beef exports and production declined to similar levels in 2023 and 2024 with the declining beef cow herd. Beef exports totaled 3 billion pounds in both years, but higher prices caused the 2024 value of exports to exceed 2023 by 5% according to the USMEF (www.usmef.org).

USDA released the monthly World Agricultural Supply and Demand report on Sept. 12: (www.usda.gov/oce/commodity/wasde).

USDA expects beef exports to decline to 2.6 billion pounds in 2025 and 2.5 billion pounds in 2026. Beef production is projected to decline from 27 billion pounds in 2024 to 25.9 billion pounds in 2025 and 25.6 billion pounds in 2026.

USDA projects annual fed cattle prices to continue increasing cyclically to record highs of $228 per hundredweight (cwt.) in 2025 and $248/cwt. in 2026, which, along with dynamic trade negotiations with major beef customers, could continue to be a headwind for beef exports.

Calf and feeder cattle prices are supported at record-high levels due to the record fed cattle prices, short supplies and low feed prices. Further support is due to the closure of the Mexican border to cattle because of the New World Screwworm cases occurring there. Typically, 20,000 to 25,000 head of feeder cattle enter the U.S. in the fall to graze winter wheat, with good grazing conditions expected this year.

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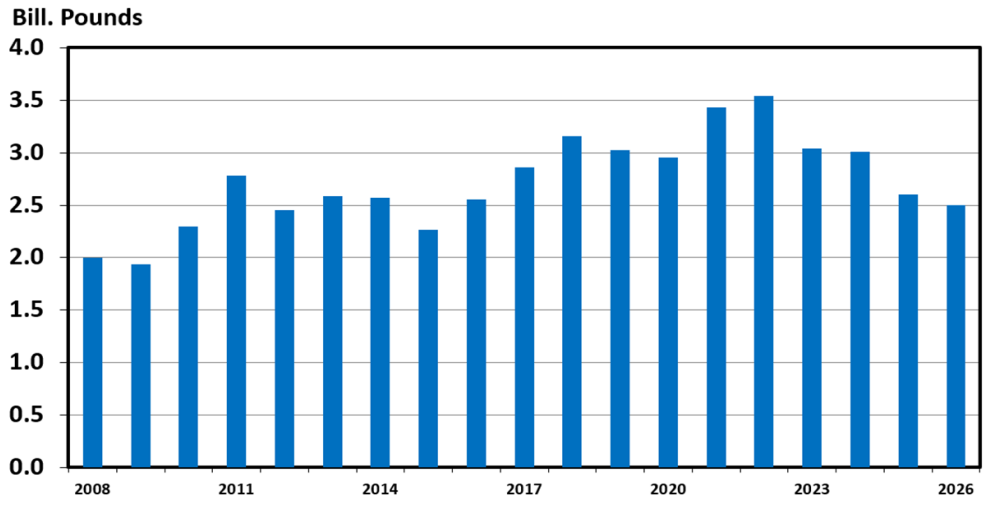
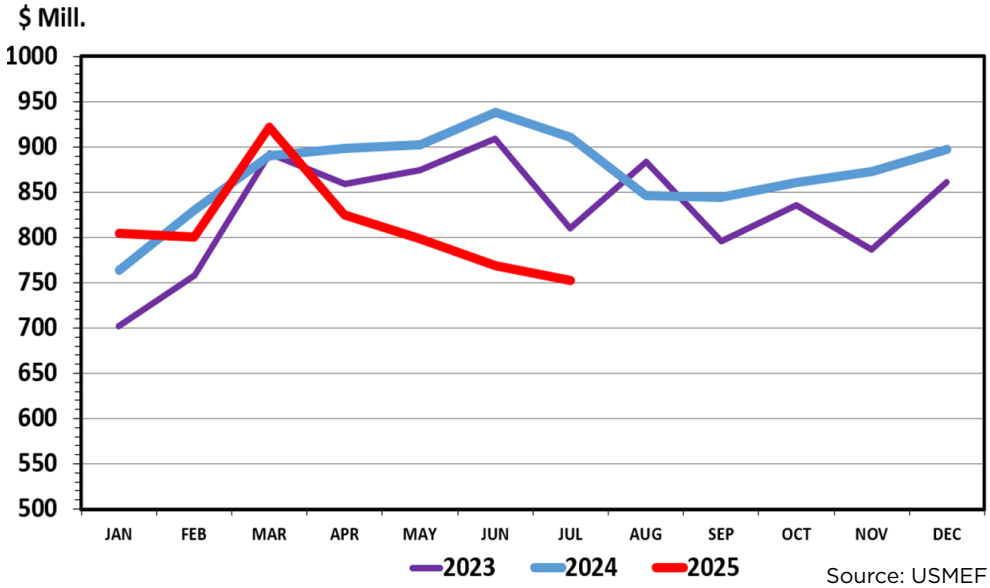
U.S. Beef and Veal Exports — Carcass Weight, Annual



Source: USDA ERS and FAS

U.S. Beef and Byproduct Export Value, Monthly



Source: USMEF

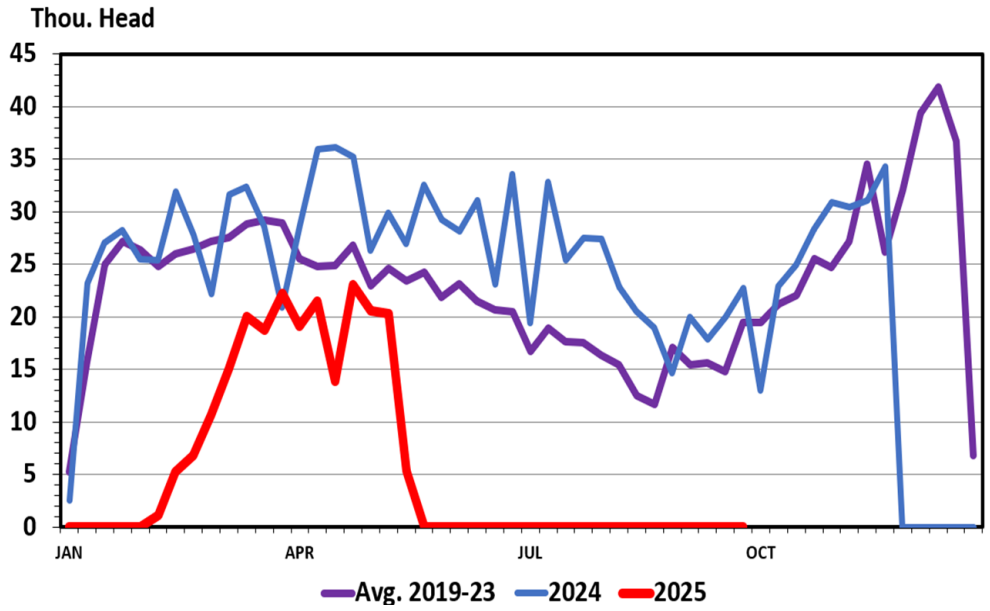
Beef Exports Impacted by High Prices and Tariff Negotiations — continued from page 4

Record-high beef cull cow prices are supported by a 17% decline in slaughter and strong consumer demand for hamburger. Further support is due to the 76.4% tariff on Brazilian beef, which has stopped beef imports from that country.

The U.S. is the leading exporter of high-quality beef in the world because it is the largest producer of beef and has a reputation for providing the safest and most dependable beef products.

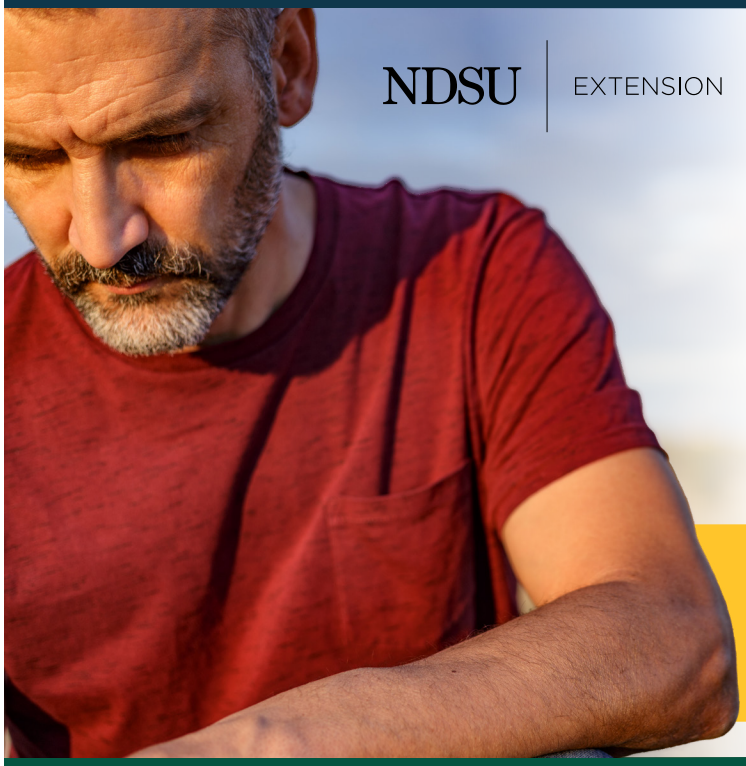
Maintaining a strong export market despite headwinds is important. The USMEF estimates that beef exports contributed $368 per head to fed cattle sold in July and nearly 12% of beef production.

Feeder Cattle Imports From Mexico, Weekly



Source: USDA AMS and APHIS

Farming and Ranching are Stressful



Concerns about production, prices and policy can weigh heavily on us.

It is okay not to be okay in times of high stress, whether during harvest time or when dealing with an uncertain farm economy.

If you feel isolated or overwhelmed, talk to someone — family, friends or a professional. Reaching out for help isn't weakness; it's a sign of wisdom and strength. Recognize that you're not alone.

Take time to connect with resources that can support you and help you to be resilient in tough times. **Find stress management tools made for farmers and ranchers at ndsu.ag/managingstress.**

If you or someone you know is struggling or in crisis, help is available. **Call or text 988.**

U.S. Soybean Export Levels Remain Weak

Frayne Olson, Crop Economist/Marketing Specialist

As of the Sept. 18, 2025, USDA Export Sales Report, U.S. new crop soybean sales levels were 37% below the same period last year, and China had not officially purchased any U.S. soybeans. Unfortunately, updated export sales data was not available during the writing of this article due to the federal government shutdown.

Table 1 shows the most recent data for marketing year totals and year-to-date export sales levels for U.S. soybeans by country. The four columns on the left of Table 1 are total export sales for a full marketing year, by country. The two columns on the right of the table are the year-to-date export sales for the current marketing year, 2025/26, and the same time period last year.

While it is still very early in the marketing year, total export sales thus far have been disappointing. The largest change from last year has been the lack of export sales to China. The primary reason is the ongoing trade dispute between the U.S. and China. Even though trade negotiations between the two countries are ongoing, soybean futures and cash market prices have been falling due to the uncertainty about the timing and structure of an agreement.

Even though soybean export sales to Mexico, Egypt and Spain are above last year's levels, these increases are not large enough to offset the lost sales to China. Many people are asking if the U.S. can find alternative markets that can replace lost sales if China does not buy U.S. soybeans. The short answer is that it will be difficult.

The greatest challenge with finding alternative soybean markets is that soybeans must be processed into soybean oil and meal before they can be used for animal feed, cooking oil or renewable fuels. This means that the whole soybean seed must be exported to countries with oilseed crushing capacity.

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Table 1 – U.S. Soybean Export Sales by Marketing Year and Country

Country	Annual Export Sales (1,000 Metric Tons) 2021/22	2022/23	2023/24	2024/25	Year-to-Date Export Commitments (1,000 Metric Tons) 2024/25 (09-19-24)	2025/26 (09-18-25)
China	30,219.0	31,380.8	24,306.7	22,546.4	6,812.3	0.0
Mexico	5,445.0	4,569.2	4,737.7	4,978.5	1,394.5	2,285.6
Egypt	4,082.4	1,149.0	1,452.3	3,692.4	439.6	671.5
Indonesia	1,808.3	1,791.0	2,131.0	2,070.1	488.1	471.2
Japan	2,412.1	2,249.9	2,031.6	2,039.3	523.4	461.8
Spain	1,385.1	1,600.1	1,904.4	1,931.4	176.1	375.4
Germany	1,411.7	2,180.6	1,687.3	1,607.4	0.0	0.0
ROW	10,425.3	7,286.9	6,259.1	11,240.4	7,596.3	6,736.2
Total	57,188.9	52,207.5	44,510.1	50,105.9	17,430.3	11,001.7

USDA Export Sales Report. ROW = Rest of World

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U.S. Soybean Export Levels Remain Weak

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Table 2 shows the historical soybean crushing by country and the current estimate for 2025/26 crushing levels.

China is the world's largest soybean crusher and accounts for about 30% of the global crushing levels. The U.S. is the second largest, Brazil is third and Argentina is fourth. These top four soybean crushing countries make up about 75% of total crushing. This suggests that the U.S. will need to look to the remaining countries with soybean crushing capacity to offset lost soybean exports to China.

Just because a country has a significant soybean crushing industry does not mean that it must import soybeans to supply this sector. Table 3 shows historic soybean imports by country and the current estimated 2025/26 import levels.

If the U.S. cannot sell soybeans to China, there are other countries that could potentially buy more U.S. soybeans. However, the U.S. already supplies soybeans to many of the larger importers. Last year, the 2024/25 marketing year, the U.S. sold about 22.5 million metric tons of soybeans to China (see Table 1). The U.S. also sold significant amounts of soybeans to Mexico, Indonesia, Japan, Spain and Germany. These countries have been highlighted in blue in Table 3.

The U.S. would need to significantly increase soybean sales to all other major importing countries to replace the 22.5 million metric tons of sales to China. While this is not impossible, it will take time and patience. Another alternative is to put more emphasis on sales to countries in the ROW, or rest of world, category. Once again, this is possible, but these markets may not grow quickly.

In summary, the U.S. does have alternative markets for whole soybean exports, but these markets are smaller and more diverse than the Chinese market. Supply chains within many of these alternative markets often rely on smaller shipments spread out over longer time periods. It can also take time and effort to develop the business-to-business relationships needed to make trade flows efficient.

Table 2 – Historical Soybean Crushing by Country in 1,000 Metric Tons

Country	2021/22	2022/23	2023/24	2024/25	2025/26 (Sep)
China	90,000	96,000	99,000	103,000	108,000
U.S.	59,980	60,199	62,196	66,134	69,536
Brazil	50,767	53,409	54,405	57,000	58,000
Argentina	38,825	30,318	36,583	42,600	42,400
EU	15,400	14,300	14,500	15,000	15,300
India	8,500	10,300	11,300	11,000	10,250
Mexico	6,350	6,650	6,530	6,650	6,800
Russia	4,900	5,400	5,900	6,225	6,300
Egypt	4,500	2,200	3,125	4,350	4,700
Thailand	2,500	2,100	2,400	2,800	3,200
ROW	34,743	34,570	35,250	39,755	42,143
Total	316,465	315,446	331,189	354,514	366,629

USDA – Oilseeds: World Markets and Trade Report. ROW = Rest of World

Table 3 – Historic Soybean Imports by Country in 1,000 Metric Tons

Country	2021/22	2022/23	2023/24	2024/25	2025/26 (Sep)
China	90,297	104,500	112,000	106,500	112,000
EU	14,545	13,127	13,461	14,600	14,300
Argentina	3,839	9,059	7,787	6,800	7,200
Mexico	6,397	6,451	6,456	6,400	6,700
Egypt	4,566	1,992	3,177	4,500	4,700
Thailand	3,243	3,238	3,428	4,300	4,400
Turkey	2,949	2,888	3,252	4,200	3,850
Japan	3,455	3,332	3,099	3,300	3,300
ROW	25,472	23,922	25,624	27,566	29,764
Total	154,763	168,509	178,284	178,166	186,214

USDA – Oilseeds: World Markets and Trade Report. ROW = Rest of World

Proposed Dairies Expected to Increase Livestock Receipts in North Dakota

Md Juyel Ashraf, Graduate Research Assistant and Jon T. Biermacher, Professor of Practice and Extension Livestock Development Specialist

North Dakota's dairy industry has undergone significant changes and hardships over the past three decades, particularly in comparison to the changes experienced by neighboring states. For instance, between 1992 and 2024, North Dakota realized an 88% reduction in milk cow inventory, reducing the herd from 80,000 to 10,000 cows (Table 1). Conversely, during the same period, South Dakota experienced a 60% increase in its milk cow inventory, rising from 132,000 cows to 210,000 cows. Like North Dakota, Minnesota realized a decline in its dairy cow herd, but by only 32%, moving from 660,000 to 450,000 milk cows. Over the same period, however, dairy operators in all three states realized significant increases in milk production due to increased production on a per-cow-per-year basis. Between 1992 and 2024, milk production increased by 85%, 82% and 55% for North Dakota, South Dakota and Minnesota, respectively (Table 1). This data suggests that Minnesota adopted genetic improvements in its cow herd before North Dakota and South Dakota, experiencing about 15% more milk production per cow in 1992 compared to its neighbors.

The increased difficulties of the North Dakota dairy industry over this period become strikingly apparent in the data reflecting changes in total cash receipts from the sale of fluid milk and the number of certified dairy farms (Table 1). Between 1992 and 2024, North Dakota realized a 56% decline in gross cash receipts while South Dakota and Minnesota both realized substantial increases of 434% and 84% in their herds. Even though Minnesota realized a 32% drop in its milk cow inventory, the productivity levels achieved in milk production per cow resulted in greater overall receipts. Moreover, between 1987 and 2022, the number of certified dairy farms fell by 99%, 94% and 87% in North Dakota, South Dakota and Minnesota, respectively (USDA-NASS, 2025a). South Dakota and Minnesota were able to offset losses of smaller farms by adding larger, more modern, confined dairy farms. North Dakota, however, did not see the same growth in large operations. So, even though North Dakota did realize substantial growth in milk production per cow, like South Dakota and Minnesota experienced, it did not outpace the number of dairies that exited the industry — exits that increased more profoundly in recent years due to closures of accessible long-standing milk processing facilities in various locations in central and southcentral regions. As a result, the state's dairy base continued to shrink in a more permanent way.

In July 2024, announcements revealed the intentions of two new large dairies to locate in alternative locations along the Interstate 29 corridor in eastern North Dakota. This news provided a positive outlook for improvements to the declining milk cow inventory and corresponding receipts from milk production in the state. Since the announcement, both dairies have successfully secured the necessary

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Table 1. Dairy Cow Inventory, Milk Production, Gross Cash Receipts from Fluid Milk Sales and the Number of Dairy Farms by State and Year

Year	North Dakota	South Dakota	Minnesota
Inventory (milk cows)[1]			
1992	80,000	132,000	660,000
2024	10,000	210,000	450,000
Change (%)	-88%	59%	-32%
Milk production (pounds/cow)[1]			
1992	12,679	12,769	15,096
2024	23,478	23,239	23,405
Change (%)	85%	82%	55%
Cash Receipts ($, million)[1]			
1992	118	211	1,253
2024	52	1,127	2,307
Change (%)	-56%	434%	84%
Certified Dairy Farms[2]			
1987	1,810	2,333	15,000
2022	24	150	1,996
Change (%)	-99%	-94%	-87%

[1]https://quickstats.nass.usda.gov
[2]https://nass.usda.gov/Publications/AgCensus/2022/index.php

Proposed Dairies Expected to Increase Livestock Receipts in North Dakota — continued from page 8

zoning and water permits required to build the two dairies. The first is a 12,500-head dairy that will be built and operated near the community of Abercrombie in Richland County, and the second is a 25,000-head dairy that will be built near the community of Hillsboro in Traill County. The two dairies combined are expected to inject approximately $270 million in initial investments and add 37,500 milk cows to North Dakota's dairy cow inventory.

Projected levels of milk production and corresponding gross receipts for the two dairies are reported in Table 2. To project milk production at the two dairies, we assumed that each cow at both locations would produce 24,000 pounds of milk per cow per year. Based on this assumption, the two dairies combined would produce approximately 900 million pounds of milk annually, equivalent to roughly 105 million gallons of milk per year. Further, we calculate a base-case value of the projected milk production using the North Dakota 10-year (2015-2024) average fluid milk price of $19.40/cwt ($1.940/lb) (USDA-NASS, 2025b). Based on our milk production and price assumptions, the value of milk produced at both dairies is expected to be worth about $175 million annually. To account for variation in the price of milk from year to year, we provide additional calculations of the value of fluid milk sales by applying a 30% increase and decrease to the base-case value, resulting in values of gross revenue that are expected to range between $122 million in a low-price year and $227 million in a high-price year.

Note, the base-case projected cash receipts of $175 million from the two new dairies would be $123 million (or 245%) more than the cash receipts from fluid milk realized in North Dakota in 2024. In addition to the expected revenues from fluid milk production, these two dairies would also provide additional value to rural and state economies through increased local and state taxes, local purchases of feed ingredients (e.g., alfalfa haylage, corn silage, feed corn, soybean meal and hulls, etc.), purchases of utilities (e.g., electricity, fuel, trash, phones, internet services, etc.), purchases of services and products from local suppliers (e.g., utility trucks, tractors, repairs and maintenance of equipment, etc.) and from the sale of liquid manure applied to cropland acres located in close proximity to the dairy, offsetting the use of more expensive sources of commercial fertilizers.

Feel free to reach out with any additional questions at jon.biermacher@ndsu.edu.

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U.S. Department of Agriculture, National Agricultural Statistics Service (USDA-NASS). 2025a. Census of Agriculture. Found at: https://www.nass.usda.gov/Publications/AgCensus/2022/index.php.

U.S. Department of Agriculture, National Agricultural Statistics Service (USDA-NASS). 2025b. QuickStats Database. Found at: https://quickstats.nass.usda.gov.

Table 2. Projected Milk Production and Revenue from Fluid Milk Sales for Proposed Riverview Dairies in North Dakota

Variable of interest:	Abercrombie	Hillsboro	Total
Number of milk cows	12,500	25,000	37,500
Milk production (lbs/cow/yr)[1]	24,000	24,000	24,000
Milk production (lbs/yr)	300,000,000	600,000,000	900,000,000
Pounds per gallon of milk	8.6	8.6	8.6
Milk production (gal/yr)	34,883,721	69,767,442	104,651,163
Average price of milk ($/cwt)[2]	19.40	19.40	19.40
Base-case revenue ($/yr)	58,200,000	116,400,000	174,600,000
Base-case revenue + 30% ($/yr)	75,660,000	151,320,000	226,980,000
Base-case revenue - 30% ($/yr)	40,740,000	81,480,000	122,220,000

[1,2]Source: quickstats.nass.usda.gov