S&P Global
Market Intelligence

North Dakota Revenue Outlook

Presentation to North Dakota Legislative Council by S&P Global Market Intelligence

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S&P Global
Market Intelligence

North Dakota Tax Revenue Outlook

Economic indicators used in the tax model

REVENUE SOURCE	ECONOMIC DRIVER	DESCRIPTION
Sales and Use tax	•Bakken new producing wells •CPI inflation •Gross state product by sector	Taxable sales are divided into 15 different sectors and the sectors are individually modeled. The main drivers of these models are the new producing wells in the Bakken play, inflation and gross state product by sector. The forecast of the sectors are summed to total taxable sales then the sales and use tax revenue forecast is calculated.
Motor vehicle excise tax	•Personal Consumption of Motor Vehicles (ND state)	The motor vehicle excise tax base is best captured by the state's personal consumption of motor vehicles (including new passenger car and light truck).
Individual income tax	•Total wage disbursements (ND state) •Personal income, dividends interest and rent (ND state)	The tax base of individual income tax submitted as withholdings is relatively stable and largely driven by total wage income in the state. The tax base of individual income tax submitted as estimated payments, on the other hand, is more volatile due to the nature of capital gains realization. That being said, a reasonable amount of variations in the tax base of individual income estimated payments is captured by the state's property income, i.e., rental income of persons, personal dividend income, and personal interest income.
Corporate income tax	•Bakken new producing wells	The tax base of corporate income tax is mainly driven by the Bakken new producing wells, as it affects oil company's profits.

Fiscal year forecast

Revenue Source	2021-23 Biennium	2023-25 Biennium		2025-27 Biennium	
	Fiscal Year 2023 Actual	Fiscal Year 2024 Actual	Fiscal Year 2025 Forecast	Fiscal Year 2026 Forecast	Fiscal Year 2027 Forecast
Sales and use tax	**1,154,530,210** ***18.3%***	**1,200,161,377** ***4.0%***	**1,217,926,160** ***1.5%***	**1,300,224,435** ***6.8%***	**1,368,505,609** ***5.3%***
Motor vehicle excise tax	**170,805,481** ***23.9%***	**174,919,202** ***2.4%***	**170,747,349** ***-2.4%***	**175,362,528** ***2.7%***	**185,952,755** ***6.0%***
Individual income tax					
Total individual income tax collections	698,782,388 *7.6%*	566,298,985 *-19.0%*	555,016,551 *-2.0%*	586,075,238 *5.6%*	609,092,784 *3.9%*
Transfer to refund reserve accounts	(216,000,000)	(211,297,204)	(118,000,000)	(124,000,000)	(129,000,000)
Net individual income tax collections	**482,782,388** ***5.9%***	**355,001,781** ***-26.5%***	**437,016,551** ***23.1%***	**462,075,238** ***5.7%***	**480,092,784** ***3.9%***
Corporate income tax					
Total corporate income tax collections	368,460,937 *53.7%*	301,392,914 *-18.2%*	329,907,193 *9.5%*	311,593,845 *-5.6%*	299,382,319 *-3.9%*
Transfer to refund reserve accounts	(59,500,000)	(24,000,000)	(56,000,000)	(53,000,000)	(51,000,000)
Net corporate income tax collections	**308,960,937** ***38.1%***	**277,392,914** ***-10.2%***	**273,907,193** ***-1.3%***	**258,593,845** ***-5.6%***	**248,382,319** ***-3.9%***

- The percentages reflect the change from the prior fiscal year.

Optimistic and pessimistic scenarios

Revenue Source	2023-25 Biennium Baseline	2023-25 Biennium Optimistic	2023-25 Biennium Pessimistic
Sales and use tax	2,418,087,537 *13.5%*	2,485,101,125 *16.6%*	2,315,970,452 *8.7%*
Motor vehicle excise tax	345,666,551 *12.0%*	358,268,307 *16.1%*	326,763,916 *5.9%*
Net individual income tax	792,018,332 *-15.6%*	833,731,343 *-11.2%*	731,503,174 *-22.1%*
Net corporate income tax	551,300,107 *3.5%*	579,030,488 *8.7%*	525,578,574 *-1.3%*

Revenue Source	2025-27 Biennium Baseline	2025-27 Biennium Optimistic	2025-27 Biennium Pessimistic
Sales and use tax	2,668,730,044 *10.4%*	2,828,238,921 *13.8%*	2,236,337,608 *-3.4%*
Motor vehicle excise tax	361,315,283 *4.5%*	397,446,811 *10.9%*	307,117,991 *-6.0%*
Net individual income tax	942,168,022 *19.0%*	1,030,284,523 *23.6%*	758,382,891 *3.7%*
Net corporate income tax	506,976,164 *-8.0%*	603,987,085 *4.3%*	425,788,851 *-19.0%*

Agriculture Outlook

Key Considerations

- **Trump readying scores of executive orders**. President-elect Donald Trump is planning to issue several executive orders following his Jan. 20 inauguration, including ones that tighten border restrictions, complete unfinished portions of the border wall, initiate the mechanisms for mass deportations, and cut federal funding to sanctuary cities unless they comply with immigration enforcement. There are some concerns these policies could harm agriculture producers and meat packers.

- **Confirmation hearing for Rollins to head USDA set for Jan. 15.** The Senate Agriculture Committee has currently scheduled a Jan. 15 confirmation hearing for Brooke Rollins to become USDA Secretary, according to Politico. Rollins has received positive reviews from lawmakers she has met with as she seeks to secure support for taking over the top spot at USDA. However, nominees such as Robert F Kennedy Jr. as Health have drawn concerns from several lawmakers ahead of their confirmation hearings.

- While negotiations of the new Farm Bill are ongoing, there are **two notable points of consensus between the Senate and House versions of the Farm Bill advanced in the old Congress**. First, while both would move IRA conservation funding to the Farm Bill permanently, the House Bill would remove the “climate friendly” guardrails that restrict the funding eligibility whereas the Senate Bill would keep them. Second, the Senate would limit USDA’s use of Section 5 of the Commodity Credit Corporation (CCC) regarding the discretionary use of CCC funds for 5 years versus 10 years in the House Agriculture Committee plan.

- Economists testifying before the Joint Economic Committee (JEC) last month indicated that **US agriculture could see a hit of up to 10% of farm income if tariffs are imposed by the US on trading partners like Canada, Mexico, and China**, the top three markets for US agricultural exports. History suggests that retaliatory measures by affected countries could negatively impact farmers and could see soybean prices fall nearly $1 per bushel while corn prices could fall $0.13 per bushel. However, it is likely that Trump may be using the threat of tariffs for negotiation purposes so the scope and longevity of tariffs may be mitigated.

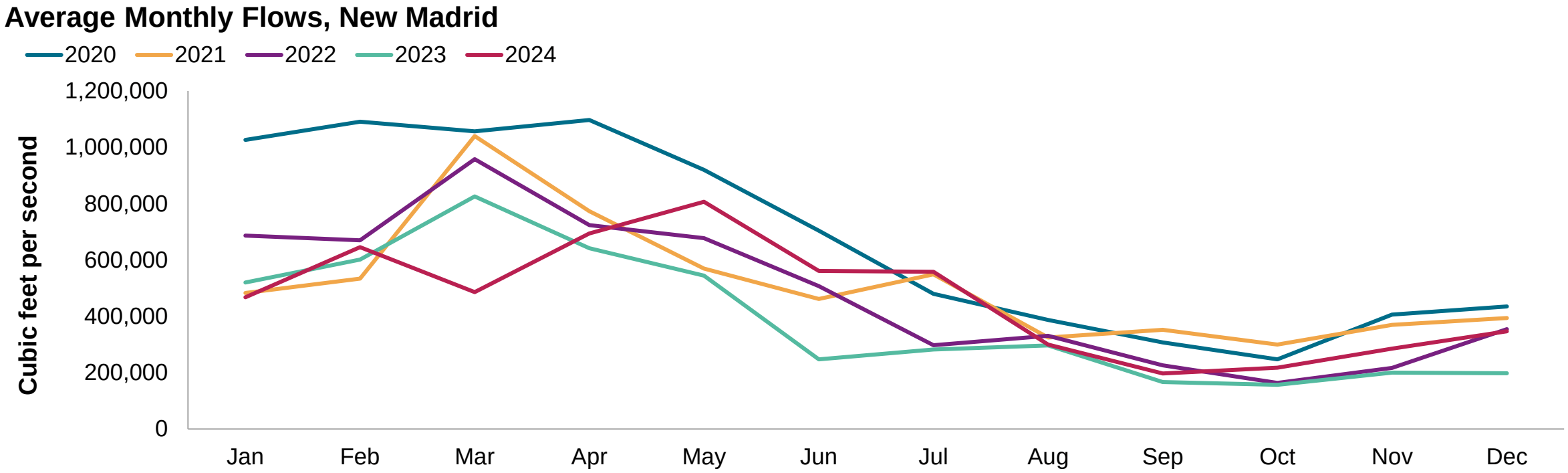
Key Considerations

- **Treasury set to announce plans on 45Z credit details**. The Treasury Department has announced rulemaking for the 45Z Clean Fuels Production Credit (CFPC). The guidance initially does not include provisions for climate-smart agriculture practices that will be used to determine eligibility of corn, soybeans, or potentially other crops for the credit. USDA has an interim final rule under review at the Office of Management and Budget (OMB) on “Technical Guidelines for Climate-Smart Agriculture Crops Used as Biofuel Feedstocks.” The 45Z credit takes over as the main biofuel credit and will shift from being a blender credit which is the case with the biodiesel tax credit to one issued to the producer. Imported used cooking oil (UCO) will not qualify for the credit, but domestically produced UCO will be eligible.

- **Trump continues to threaten to take back Panama Canal**, complaining about the passage fees charged and China’s growing influence. However, Panamanian President José Raúl Mulino pushed back, calling sovereignty "nonnegotiable,” adding “every square meter” of the canal belonged to his country. In addition, Trump has made comments about incorporating Canada as part of the US, calling Canada “the future 51st State”, further straining relations.

- **USMCA panel sides with US in GMO corn complaint.** The decision found that Mexico's actions are in violation of its commitments under USMCA and that the measures are not based on science and undermine market access under USMCA. Mexico has 45 days from the issuance of the panel's report (Dec. 20) to come into compliance with the decision. However, Mexican President Claudia Sheinbaum expressed confidence that the Mexican Congress will pass a ban on the planting of GMO corn in 2025.

Water levels on the Mississippi River remain low, but are continuing to improve



Source: USGS.

Farm incomes are expected to continue declining from their 2022 highs

US Farm Income

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
(Billion Dollars)															
Cash income statement:															
Cash receipts from farm marketings															
Crops	195.8	194.9	196.0	193.8	202.5	246.0	282.8	276.7	252.2	233.9	233.0	240.4	250.3	256.7	261.9
Livestock	162.7	175.6	176.1	175.6	165.0	196.4	259.8	249.6	268.4	264.3	249.5	252.0	257.1	261.3	264.8
Total farm marketings	358.5	370.4	372.1	369.3	367.5	442.4	542.6	526.3	520.6	498.2	482.6	492.4	507.5	518.0	526.7
Direct government payments	13.0	11.5	13.7	22.4	45.6	26.0	15.6	12.3	11.6	14.8	14.4	14.2	11.9	11.9	11.5
Farm-related income	27.9	31.2	29.1	34.7	34.3	32.2	51.8	53.7	48.7	38.5	38.3	37.5	37.2	37.5	37.7
Gross cash income	399.4	413.2	414.8	426.5	447.4	500.6	610.0	592.2	580.9	551.4	535.3	544.1	556.6	567.4	576.0
Cash expenses	303.8	311.9	311.4	317.3	326.5	345.4	399.9	426.1	423.2	418.8	420.0	418.9	427.9	435.0	445.3
Net cash income	95.6	101.3	103.5	109.2	120.9	155.2	210.1	166.1	157.7	132.6	115.3	125.2	128.7	132.4	130.7
Farm income statement:															
Gross cash income	399.4	413.2	414.8	426.5	447.4	500.6	610.0	610.0	592.2	580.9	551.4	535.3	544.1	556.6	567.4
Nonmoney Income	17.1	18.3	19.1	18.4	18.5	20.8	22.6	22.5	23.5	23.8	24.5	23.5	23.1	23.1	23.6
Inventory adjustment	-4.2	-6.1	-8.5	-15.0	-9.8	-3.2	-14.8	-6.4	-3.1	-4.8	-0.8	-2.7	-2.3	-4.0	-4.7
Gross farm income	412.3	425.4	425.5	429.8	456.1	518.2	617.7	608.4	589.9	568.9	561.0	558.5	558.9	566.7	575.0
Total Expenses	349.9	349.7	343.1	347.8	357.3	372.0	435.7	608.4	601.4	570.5	559.0	564.9	577.4	586.5	594.8
Realized Net Farm Income	66.6	81.8	90.9	97.0	108.6	149.4	196.9	152.8	146.0	121.7	105.1	114.1	117.0	120.2	118.2
Net Farm Income	62.3	75.7	82.4	82.0	98.8	146.3	182.0	146.5	143.0	116.9	104.3	111.4	114.8	116.2	113.5
Deflated Net Farm Income \1	46.0	54.8	58.3	57.1	67.9	96.1	111.7	86.8	82.7	66.2	57.6	60.3	60.7	60.2	57.5

\1 Deflated by the GDP Implicit Price Deflator, 2000=100
Note: Shaded years are forecasts
Source: S&P Global Commodity Insights.

- Net farm income for 2024 is projected to be $143 billion, a decline of $3.5 billion from 2023. However, net farm incomes are expected to continue declining in 2025 to $116.9 billion.
- When adjusted for inflation, net farm incomes for the remaining of the decade are expected to be comparable to net farm incomes experienced during the period from 2018-2019.

Farm asset values are expected to decline over the next several years due to decline in farmland values as well as livestock and poultry values

Balance Sheet of the US Farming Sector

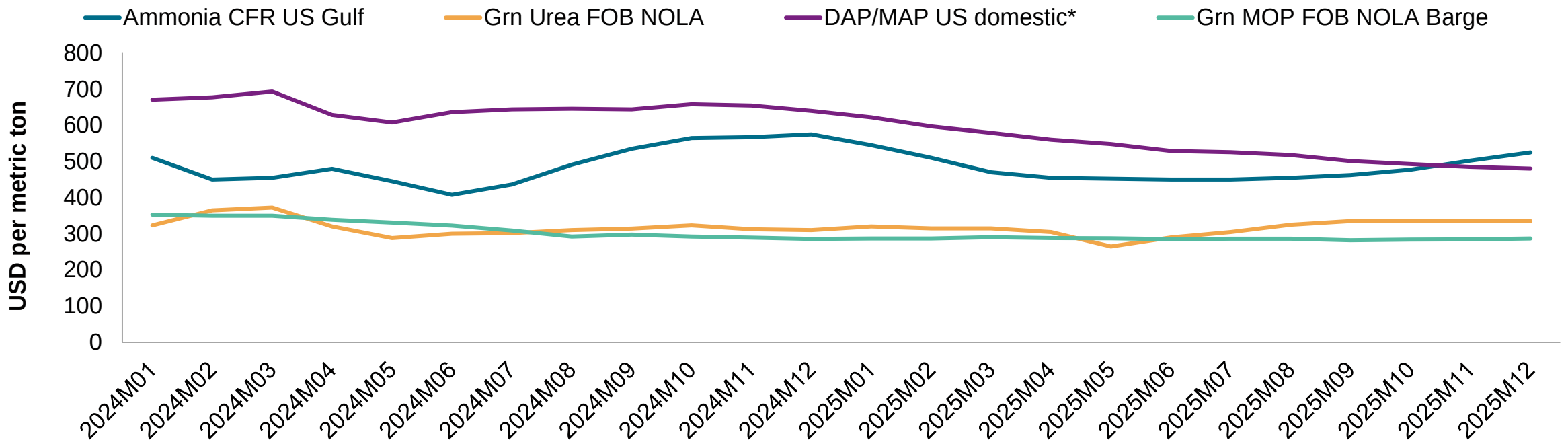
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
(Billion Dollars)															
Farm assets															
Real estate	2,401.4	2,472.8	2,502.6	2,519.9	2,596.8	2,822.5	3,156.4	3,338.8	3,413.2	3,335.4	3,294.4	3,351.8	3,409.2	3,496.4	3,585.1
Livestock and poultry	109.0	107.1	97.1	99.2	98.3	104.1	108.7	127.5	140.1	132.4	127.1	127.2	125.8	125.1	126.4
Machinery and motor vehicles	255.4	272.3	271.0	279.0	278.8	308.3	312.1	339.3	347.8	347.9	349.2	348.4	349.4	350.3	351.4
Crops stored	55.7	56.8	59.7	49.6	50.6	58.1	72.2	66.5	62.3	62.5	63.5	68.4	71.9	76.8	80.3
Purchased inputs	14.9	15.8	16.1	13.9	14.0	18.3	21.2	20.2	20.7	19.8	19.6	19.1	19.7	20.0	20.9
Financial assets	78.1	81.1	72.6	87.5	92.0	112.7	117.9	121.9	120.0	114.0	109.0	112.0	116.0	119.2	121.8
Total farm assets	2,914.4	3,005.9	3,019.1	3,049.1	3,130.5	3,424.1	3,788.4	4,014.3	4,104.1	4,012.1	3,962.9	4,027.0	4,091.9	4,187.8	4,285.9
Farm Liabilities															
Real estate	226.0	236.2	245.8	267.9	288.6	324.4	334.4	344.6	355.4	348.5	344.1	349.6	355.3	364.2	373.1
Nonreal estate	148.2	154.2	156.8	152.6	152.6	149.9	161.8	174.4	182.7	179.6	177.0	178.6	180.6	183.0	185.6
Total farm liabilities	374.2	390.4	402.6	420.5	441.3	474.3	496.2	519.0	538.2	528.1	521.0	528.2	535.9	547.2	558.7
Farm Equity	2,540.3	2,615.5	2,616.5	2,628.6	2,689.3	2,949.8	3,292.3	3,495.4	3,566.0	3,484.0	3,441.9	3,498.8	3,556.1	3,640.6	3,727.2
Debt/Equity Ratio	0.15	0.15	0.15	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Debt/Asset Ratio	0.13	0.13	0.13	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

\1 Deflated by the GDP Implicit Price Deflator, 2000=100
Note: Shaded years are forecasts
Source: S&P Global Commodity Insights.

- Farm assets are expected to decline over the next few years, driven by declines in real estate, livestock, and poultry values. However, real estate values are projected to begin appreciate in 2028.
- The debt to equity ratio and the debt to asset ratio is expected to remain steady through the forecast period.

While US phosphate prices are expected to decline and MOP prices will remain steady, nitrogen prices are likely to decline for the next 6 months before rebounding

Monthly average fertilizer prices 2024-2025

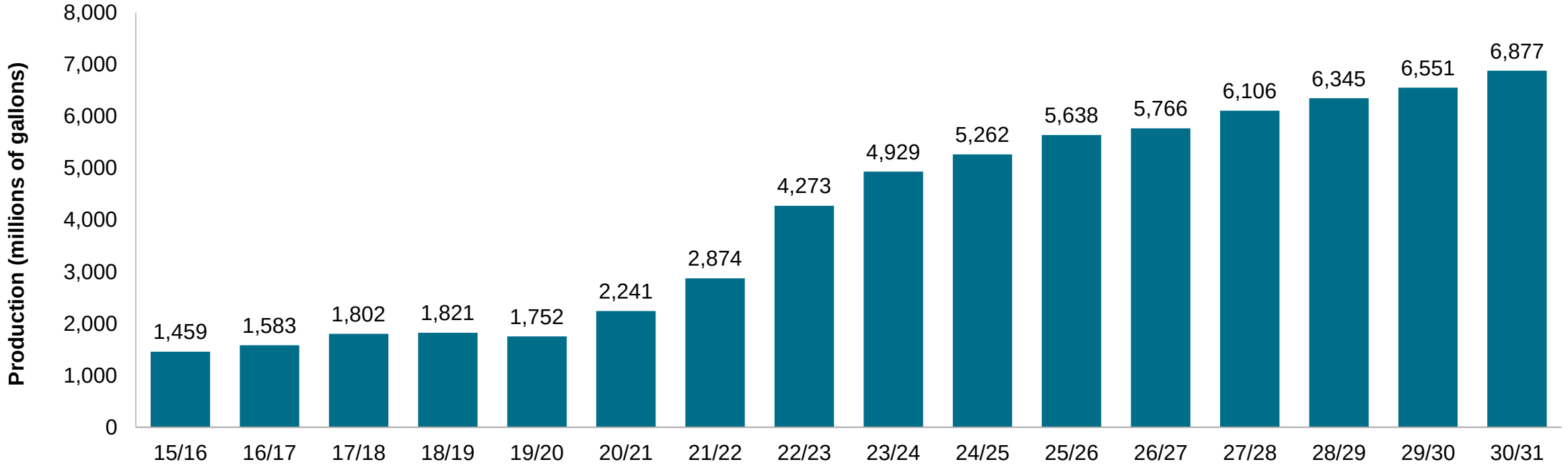


*NOLA/Florida
Source: S&P Global Commodity Insights.

- US ammonia and urea prices are forecasted to begin declining well through the first half of the year before slowly rebounding to prices currently being experienced. The downward swing for urea is expected to be approximately $125/MT while the downward swing for urea is expected to be only $20/MT.
- US MOP prices are anticipated to remain relatively steady through 2025.
- US DAP/MAP prices are expected to decline through 2025 for a total decline of $160/MT if the forecast holds.

US bio-distillate production is expected to grow steadily through the decade

US bio-distillate production outlook



Source: S&P Global Commodity Insights.

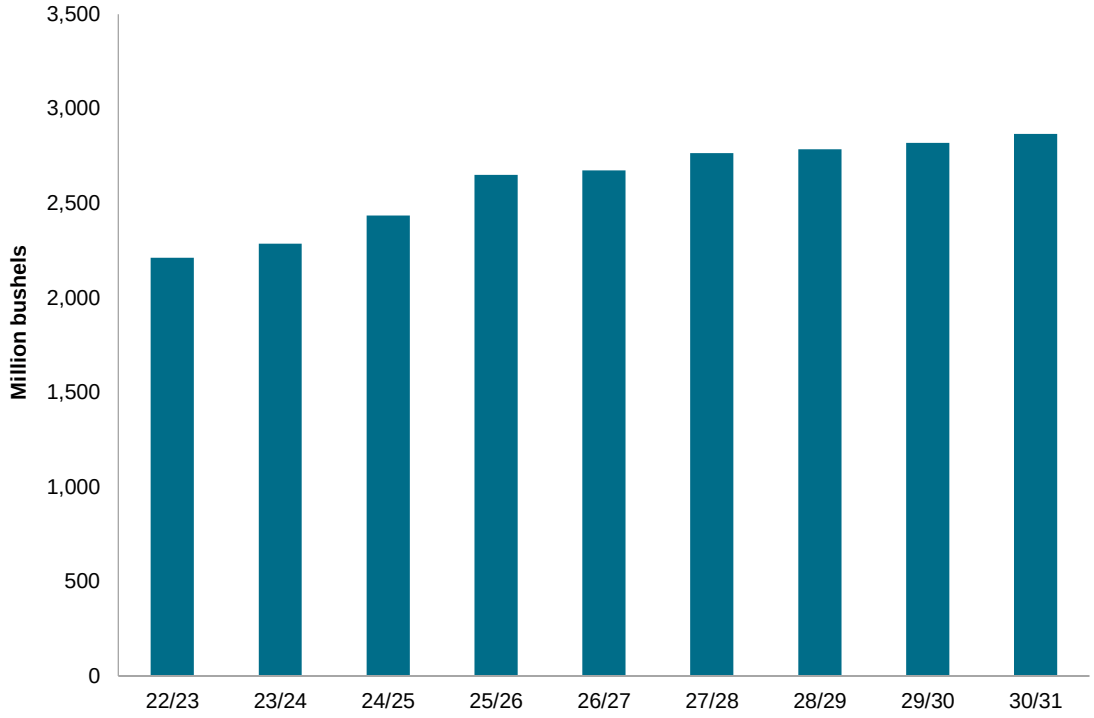
- Soybean oil demand for bio-distillate increased from 1,705 million gallons to 1,881 million gallons in 2024/25.
- Longer term, we continue to forecast a robust soy oil demand from the bio-distillate sector. Demand will also increase for corn and canola oil with canola rising at a faster pace longer term. Other feed stocks will continue to play a pivotal role in meeting the expanding mandate

US soybean prices are projected to continue declining next year before rebounding

U.S. SOYBEAN COMPLEX FUNDAMENTALS	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
Prices (Dollars Per Bushel)	$14.20	$12.40	$9.50	$8.94	$9.59	$10.03	$10.56	$10.46	$10.99
Soybean to Corn Price Ratio	2.2	2.7	2.3	2.1	2.5	2.3	2.4	2.3	2.4
Acreage (Million Acres)									
Planted Area	87.5	83.6	87.1	84.0	87.0	86.3	86.4	88.3	84.4
Harvested Area	86.2	82.3	86.2	83.0	86.0	85.4	85.4	87.3	83.5
Harvested Area % of Planted	99%	98%	99%	99%	99%	99%	99%	99%	99%
Yield (Bushels Per Acre)	49.6	50.6	51.7	53.5	53.6	54.1	54.7	55.1	55.7
Supply (Million Bushels)									
Beginning Stocks	274	264	342	481	498	519	445	470	583
Production	4,270	4,162	4,456	4,443	4,610	4,622	4,670	4,813	4,656
Imports	25	21	15	15	15	15	15	15	15
Total Supply	4,569	4,447	4,813	4,939	5,123	5,156	5,131	5,299	5,254
Domestic Disappearance (Million Bushels)									
Crush	2,212	2,287	2,435	2,650	2,674	2,766	2,785	2,820	2,866
Seed & Residual	114	123	97	91	120	120	130	130	127
Total Domestic Disappearance	2,326	2,410	2,532	2,741	2,793	2,886	2,915	2,950	2,993
Exports	1,980	1,695	1,800	1,700	1,811	1,825	1,746	1,766	1,643
Total Disappearance	4,305	4,105	4,332	4,441	4,604	4,710	4,660	4,715	4,636
Ending Stocks	264	342	481	498	519	445	470	583	617

Note: Shaded years are forecasts
Source: S&P Global Commodity Insights.

US soybean crush outlook



Source: S&P Global Commodity Insights.

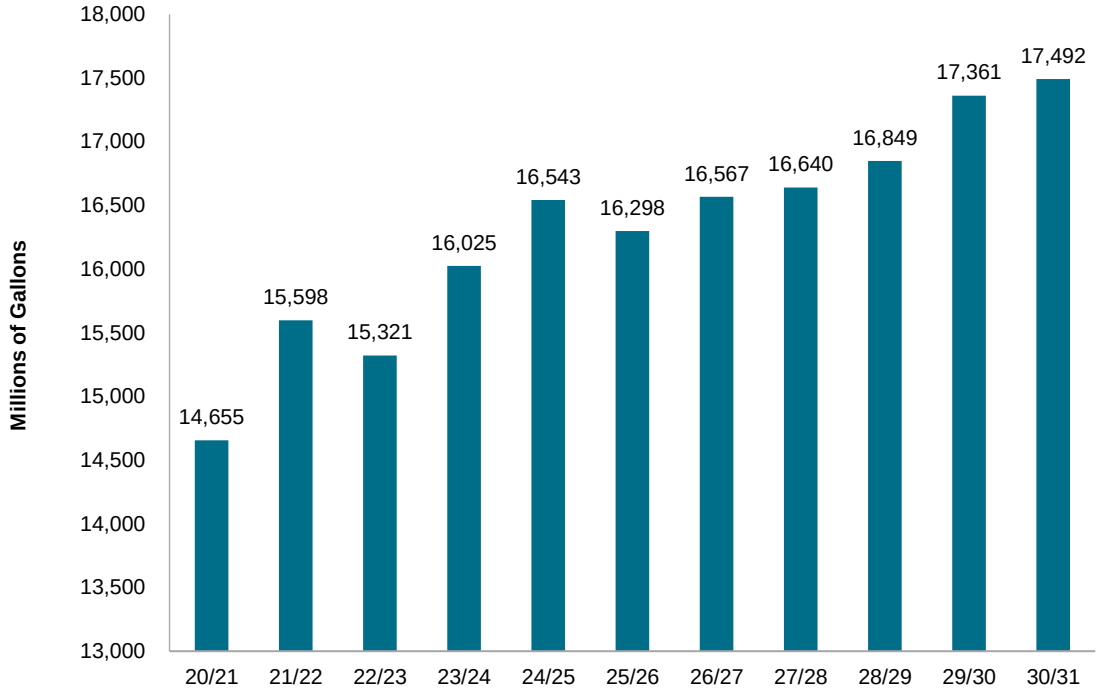
- The strong start to the marketing year has led to an increase of the 2024/25 export forecast to 1,800 million.
- Soybean prices are expected to decline for 2025/26 before rebounding the following year. $10 a bushel soybeans are expected starting 2027/28.
- In the event of a US-China trade war, US old crop exports could decline by 50 million bushels while new crop exports could decline by as much as 500 million bushels. This would create massive build up in US soybean stocks and would likely lower soybean futures, with the US-China trade war scenario 25/26 crop year average price forecast falling to $8.80 per bushel.

US corn production is expected to increase in 25/26

U.S. CORN FUNDAMENTALS	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
Prices (Dollars Per Bushel)	$6.54	$4.55	$4.20	$4.20	$3.85	$4.38	$4.37	$4.52	$4.55
Acreage (Million Acres)									
Planted Acres	88.2	94.6	90.9	92.8	91.2	89.7	89.8	88.9	89.7
Harvested Acres	78.7	86.5	82.8	84.5	83.2	81.8	82.0	81.1	81.9
Harvested Area % of Planted	89%	91%	91%	91%	91%	91%	91%	91%	91%
Yield (Bushels Per Acre)	173	177	183	184	185	187	189	190	193
Supply (Million Bushels)									
Beginning Stocks	1,377	1,360	1,760	1,576	1,898	2,128	2,352	2,416	2,406
Production	13,651	15,341	15,142	15,547	15,351	15,261	15,453	15,452	15,783
Imports	39	28	25	25	39	39	39	39	39
Total Supply	15,066	16,729	16,927	17,149	17,287	17,428	17,843	17,906	18,228
Domestic Disappearance (Million Bushels)									
Total Domestic Disappearance	12,044	12,676	12,851	12,851	12,871	12,776	13,170	13,328	13,479
Exports (Million Bushels)	1,662	2,292	2,500	2,400	2,288	2,300	2,258	2,172	2,305
Total Disappearance (Million Bushels)	13,706	14,969	15,351	15,251	15,159	15,076	15,428	15,500	15,784
Ending Stocks (Million Bushels)	1,360	1,760	1,576	1,898	2,128	2,352	2,416	2,406	2,444

Note: Shaded years are forecasts
Source: S&P Global Commodity Insights.

US ethanol production outlook



Source: S&P Global Commodity Insights.

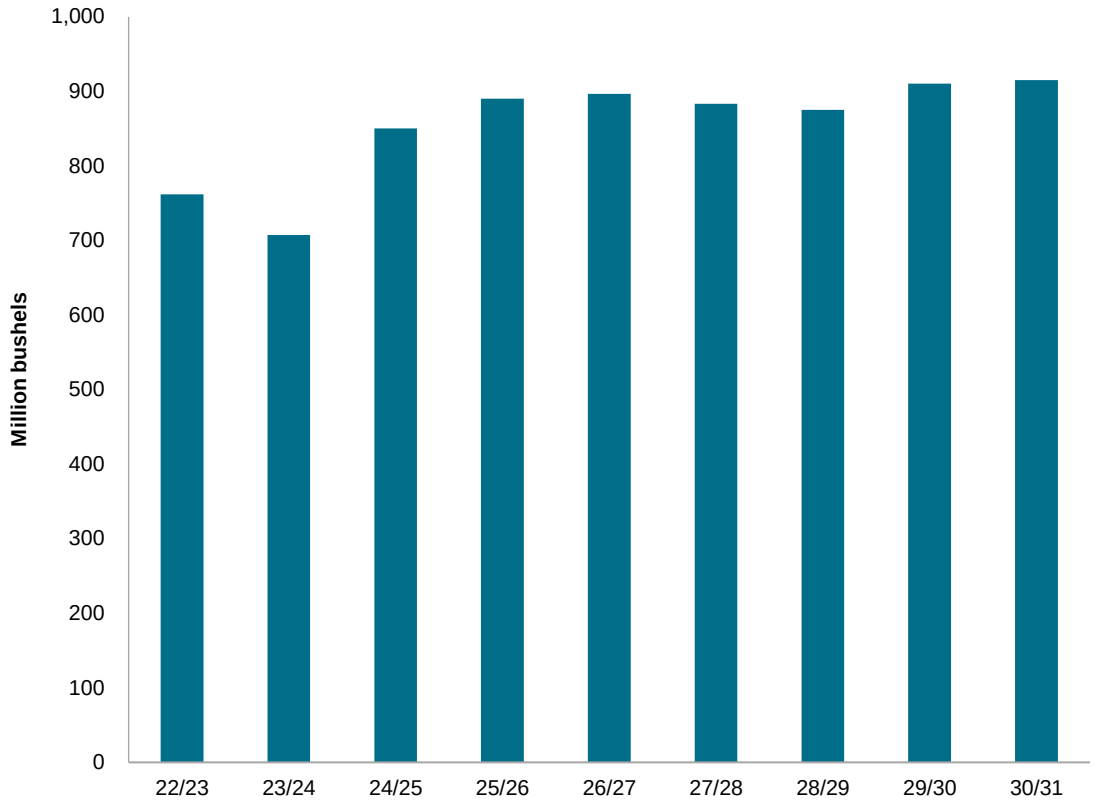
- Corn acreage is expected to increase by 1.9 million acres for 2025/26 for a total of 92.9 million acres. Consequently, corn production for is expected to increase 405 million bushels to total of 17,149 million bushels.
- Factoring in a 70% probability of a trade war with China, corn prices are forecasted at $4.05 per bushel for 2024/25 and $3.70 per bushel for 2025/26.
- Corn ethanol production is expected to decline from 16,543 million gallons in 2024/25 to 16,298 million gallons in 2025/26 before rebounding. While year-round E15 blends for the states of Illinois, Iowa, Nebraska, Minnesota, Missouri, Ohio, South Dakota, and Wisconsin starting April 28, 2025 will help buoy ethanol demand, further increasing year-round consumption of corn ethanol will likely require an act of Congress.
- The development of alcohol-to-jet (ATJ) pathways is expected to cause corn ethanol demand to increase to 17,492 million gallons by 2030/31.

US wheat exports are strong and expected to increase in 25/26 with prices also improving

U.S. WHEAT FUNDAMENTALS	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
Prices (Dollars Per Bushel)	$8.83	$6.96	$5.60	$5.90	$5.21	$5.73	$5.79	$5.99	$5.98
Wheat to Corn Price Ratio	1.35	1.53	1.33	1.40	1.35	1.31	1.32	1.33	1.31
Acreage (Million Acres)									
Planted Acres	45.8	49.6	46.1	46.3	45.6	44.6	46.8	46.9	46.2
Harvested Acres	35.5	37.1	38.5	38.2	37.7	36.9	38.7	38.7	38.1
Harvested Area % of Planted	78%	75%	83%	82%	83%	83%	83%	83%	83%
Yield (Bushels Per Acre)	46.5	48.7	51.2	50.5	51.0	51.5	51.9	52.4	52.8
Supply (Million Bushels)									
Beginning Stocks	674	570	696	794	818	830	844	971	1,074
Production	1,650	1,804	1,971	1,928	1,924	1,903	2,009	2,028	2,014
Imports	122	138	114	115	113	118	118	120	119
Total Supply	2,446	2,512	2,782	2,837	2,855	2,851	2,971	3,118	3,208
Domestic Disappearance									
Food Use	972	961	965	971	971	969	972	973	977
Seed	68	62	63	63	62	65	65	64	63
Feed & Residual	74	85	110	95	95	90	88	97	63
Total Domestic Disappearance	1,114	1,108	1,138	1,129	1,128	1,124	1,125	1,134	1,103
Exports	762	707	855	890	896	883	875	910	915
Total Disappearance	1,876	1,815	1,988	2,019	2,025	2,007	2,000	2,044	2,018
Ending Stocks	570	696	794	818	830	844	971	1,074	1,190

Note: Shaded years are forecasts
Source: S&P Global Commodity Insights.

US wheat exports outlook



Source: S&P Global Commodity Insights.

- The export forecast increased by 5 million bushels to 855 million this week, mostly due to a stronger-than-expected white wheat shipment pace. However, a stronger dollar could still further reduce US wheat competitiveness.
- The US winter wheat crop continued to show improving conditions, with winter wheat areas experiencing drought down two percentage points to 25%, according to the latest US Drought Monitor. Concerns of winterkill are low overall despite the Artic air due to forecasted snow cover.

US beef production continues to decline while prices remain strong

US Cattle Sector Fundamentals

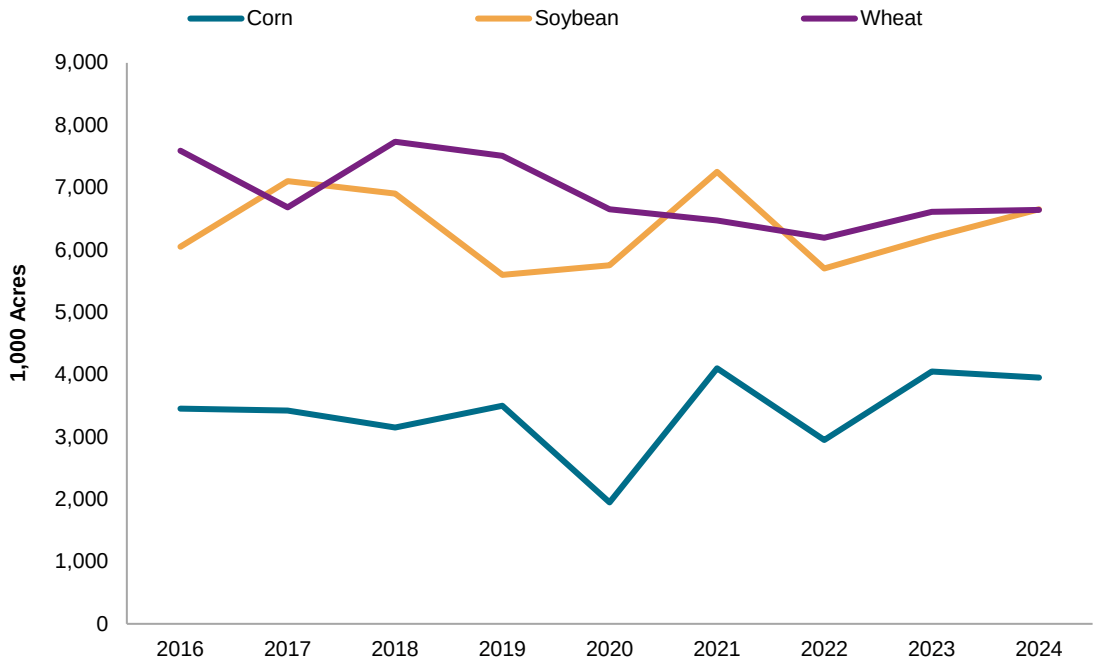
Item	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Cattle															
Beef Cow Inventories (Jan 1, million head)	30.2	31.2	31.5	31.8	31.3	30.8	30.0	28.9	28.2	28.3	28.4	29.9	30.9	30.8	30.6
Boxed beef cutout (dollars per cow)	206.8	209.9	214.0	222.6	238.9	279.3	263.9	298.0	306.1	332.9	302.1	296.9	290.5	286.4	288.6
Beef															
Beef retial price (Dollars per pound)	$5.96	$5.91	$5.92	$6.04	$6.38	$7.25	$7.59	$7.98	$8.23	$8.39	$8.27	$8.09	$7.87	$7.72	$7.76
Production (mil lbs)	25,221	26,228	26,867	27,148	27,153	27,938	28,291	26,964	26,930	25,102	25,101	25,703	26,836	27,906	28,154
Imports (mil lbs)	3,015	2,993	2,999	3,057	3,342	3,311	3,391	3,727	4,333	4,242	3,884	3,888	3,878	3,842	3,766
Exports (mil lbs)	2,556	2,860	3,155	3,022	2,956	3,446	3,536	3,038	2,904	2,654	2,876	2,758	3,035	3,339	3,327
Domestic use (mil lbs)	25,673	26,371	26,665	27,167	27,484	27,828	28,109	27,713	28,377	26,668	26,101	26,809	27,644	28,377	28,585

\1 Deflated by the GDP Implicit Price Deflator, 2000=100
Note: Shaded years are forecasts
Source: S&P Global Commodity Insights

- Total cattle and calf inventories in the US fell 1.9% year over year to 87.2 million head due to the ongoing repercussions of heavy droughts in 2023. Total cattle inventories for 2025 are forecast to fall by 0.5% year over year as the sector continues moving toward recovery again. However, cattle numbers are forecast to trend higher in 2026, with stronger growth materializing in 2027.
- US beef consumption in 2024 is set to rise by 2.4% year over year to 28.38 billion pounds. Domestic beef demand in 2025 is set to recede, however, as import figures flatten out while production reaches its lowest point among the surrounding years.
- Beef exports are projected to fall by 4.4% year over year to 2.90 billion pounds in 2024, with a larger drop of 8.6% year over year to 2.65 billion pounds in 2025. While beef exports will continue growing through the decade, exports will not reach 2022 levels by 2030
- Beef prices in 2024 increased to $306.1 per hundredweight (cwt), establishing a new record high for a year. As supply recovery requires a slowdown in cattle slaughter and consequently beef production, beef prices are expected to rise even higher in 2025 to $332.9 per cwt, attributed to supply reaching its lowest point. While prices will begin declining in 2026, prices will remain about the 2022 price through the forecasted period.

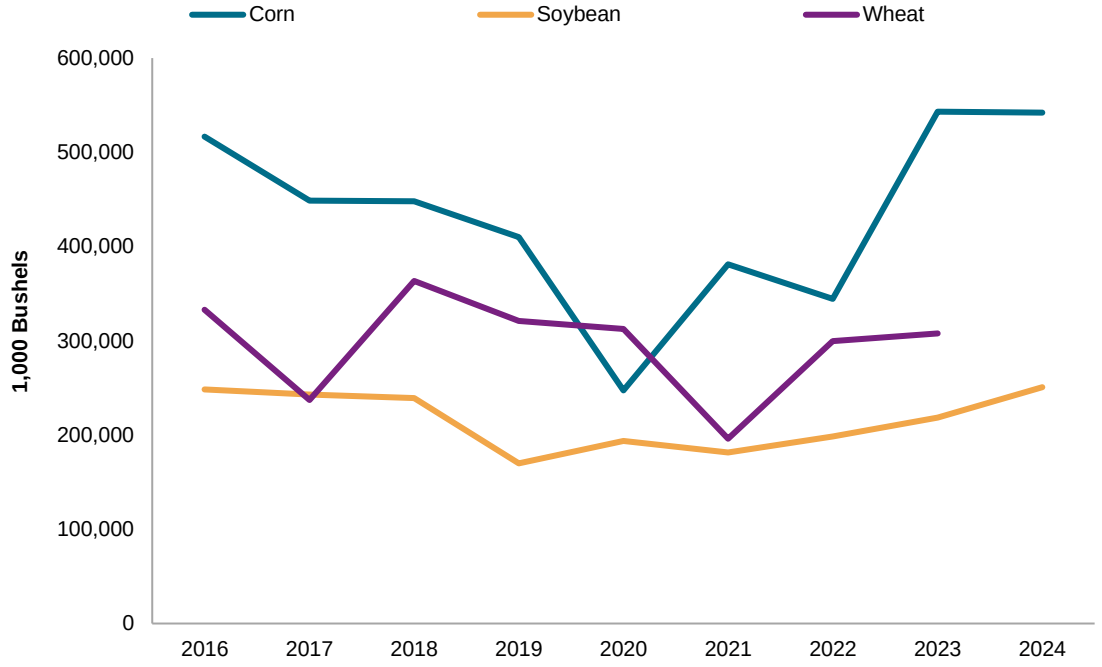
Soybeans are the top crop in North Dakota by acres planted in 2024, yet corn remains the top crop by yields

North Dakota crop plantings



Source USDA NASS.

North Dakota production by crop

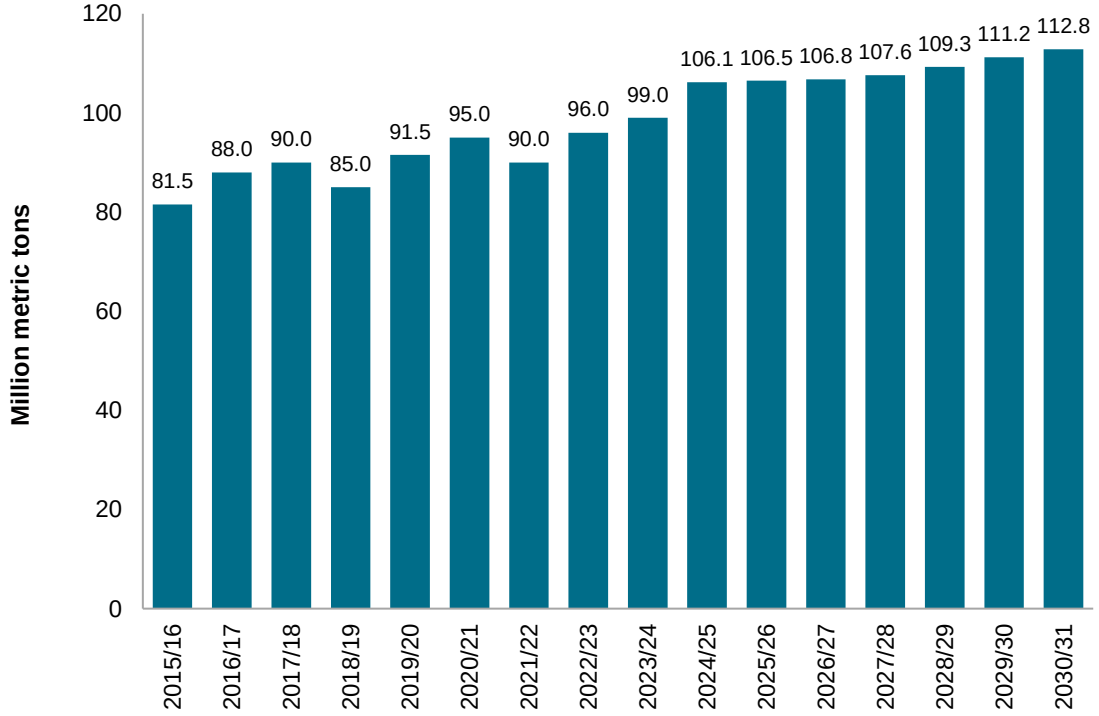


Source: USDA NASS

- For 2024/25, North Dakota soybeans has slightly surpassed wheat in terms of acres planted by 10,000 acres. Corn acres planted decreased slightly year over year.
- Due to fewer acres planted corn production in North Dakota was lower in 2024 compared to 2023, but favorable yields made the kept the decline around 1 million bushels. Meanwhile, soybean production increased by 32 million bushels.

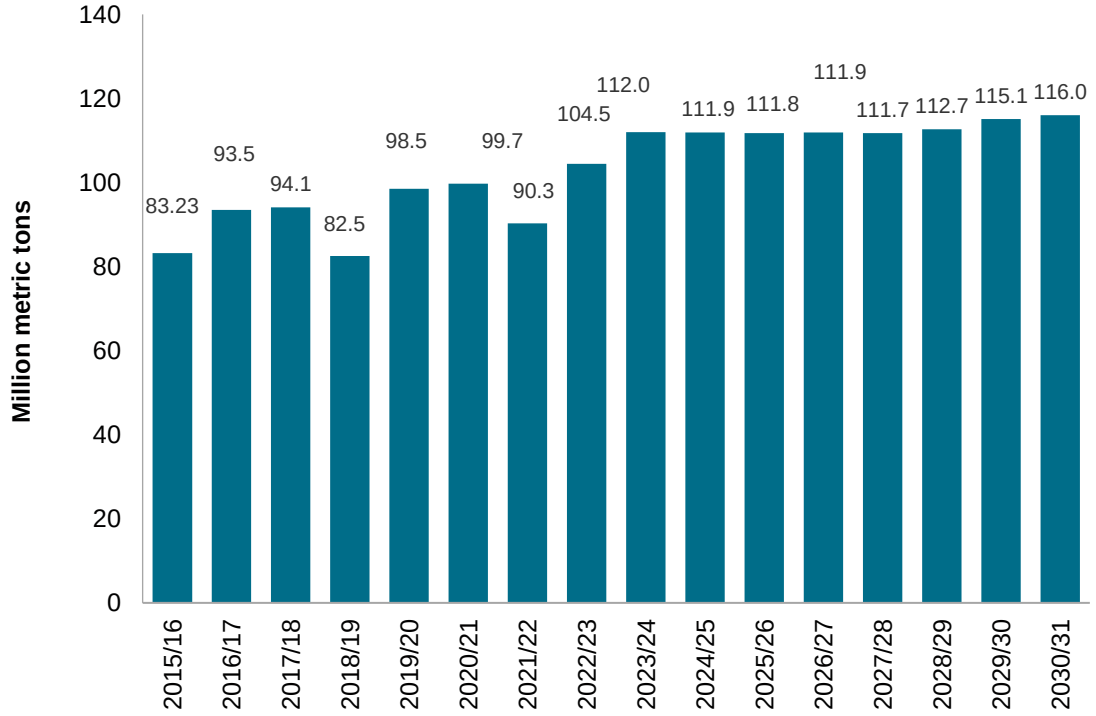
China’s imports of soybeans are expected to remain steady over the next several years

China soybean crush outlook



Source: S&P Global Commodity Insights.

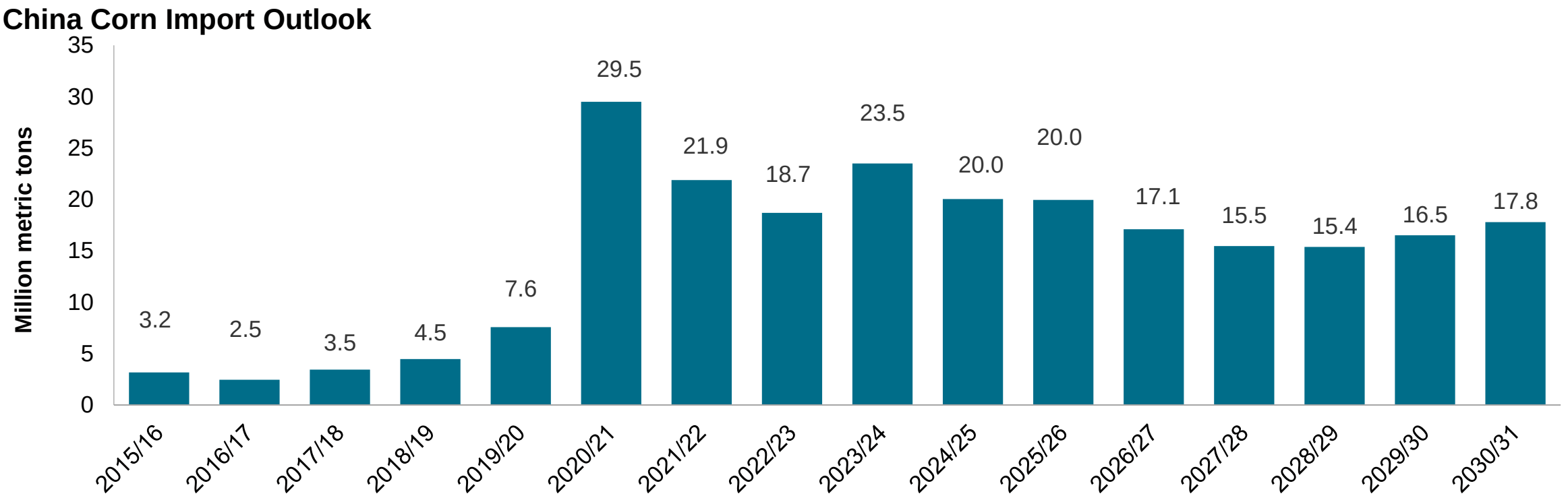
China soybean import outlook



Source: S&P Global Commodity Insights

- China’s soybean crush numbers are expected to increase slightly in 2025/26 and continue rising through 2029/30. However, crush demand growth is expected to be slower than in the 2010s due to slowing economic growth.
- Chinese import demand for soybeans is expected to decline slightly in 2025/26 and remain steady for a few years before increasing in 2029/30. This is due to China’s push for increasing domestic production of agricultural commodities. For instance, Beijing approved the importation two GM soybean seed varieties at the end of 2024.

China’s corn imports will remain elevated relative pre-COVID levels, but are projected to decline over the next decade

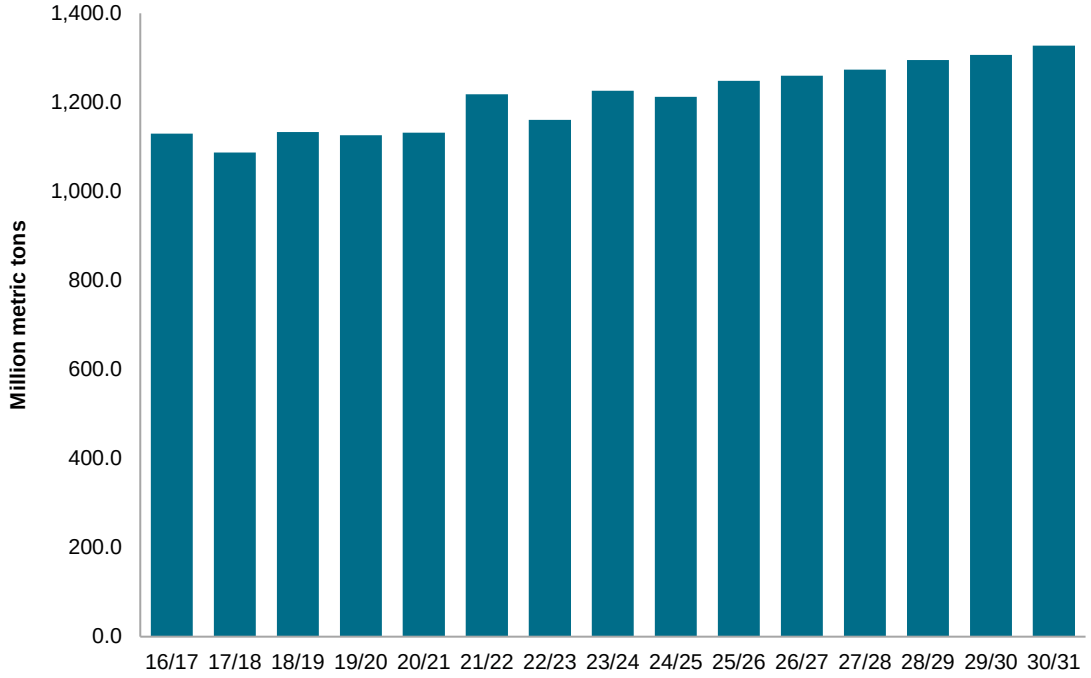


Source: S&P Global Commodity Insights

- For 2025/26, China’s corn imports expected to remain steady at 20.0 MMT. However, corn imports for 2024/25 fell short of the original forecasts.
- Chinese corn imports will continue to be historically large, but imports are expected to decline throughout the decade due to a renewed emphasis on agricultural self-sufficiency by Beijing. To this end, Beijing approved the importation of a GM variety of corn seed.

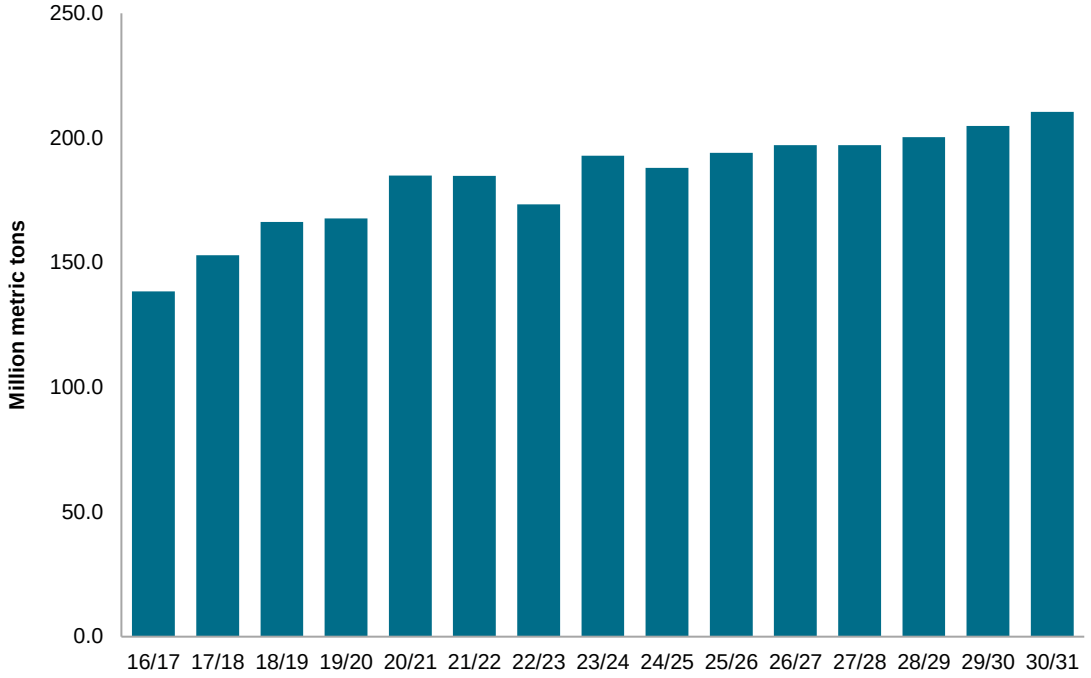
Global corn production is forecasted to increase in the US, Brazil and China while Africa is forecasted to import more corn through the end of the decade

Global corn production



Source: S&P Global Commodity Insights.

Global corn imports

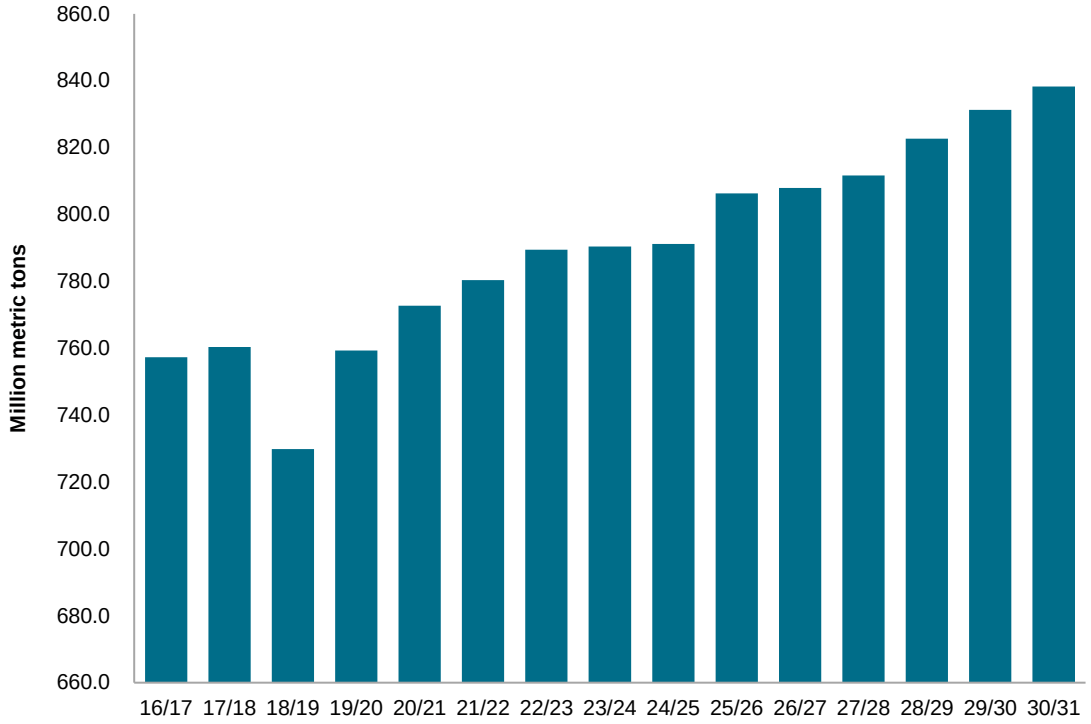


Source: S&P Global Commodity Insights.

- Global corn product decline slightly in 2024/25 by 13.6 MMT for a total of 1,212 MMT with the declines coming from the US, Argentina, Russia, and Ukraine. Globally supplies are projected to increase steadily through the decade to a total of 1,327 MMT by 2030/31 with the majority of increases coming from China, Brazil, and the US. Global corn imports decreased by 4.9 MMT in 2024/25 for a total of 187.9 MMT. China was the primary driver of this trend as it imported 3.5 MMT less in 2024/25 compared to 2023/24. Global corn imports are projected to grow steadily through 2030/31 by 22.5 MMT for a total of 210.4 MMT with growing African demand (13.9 MMT) more than offsetting declines in demand from China (5.7 MMT).

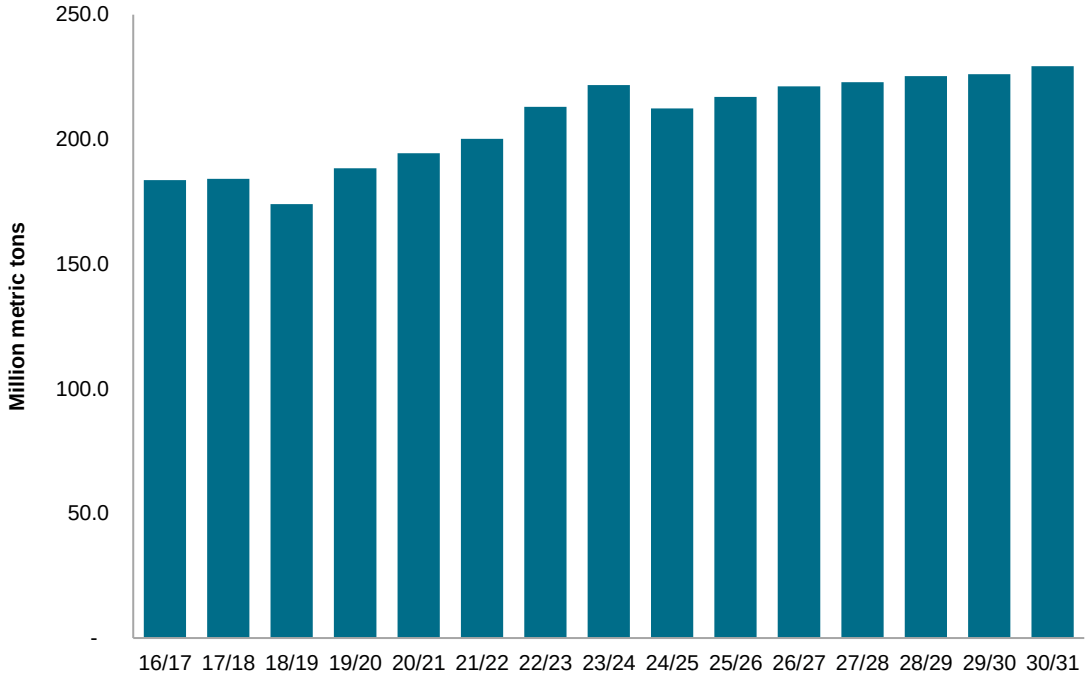
While global wheat production will grow steadily through 2030, global wheat imports are projected to grow at a much slower pace

Global wheat production



Source: S&P Global Commodity Insights.

Global wheat imports

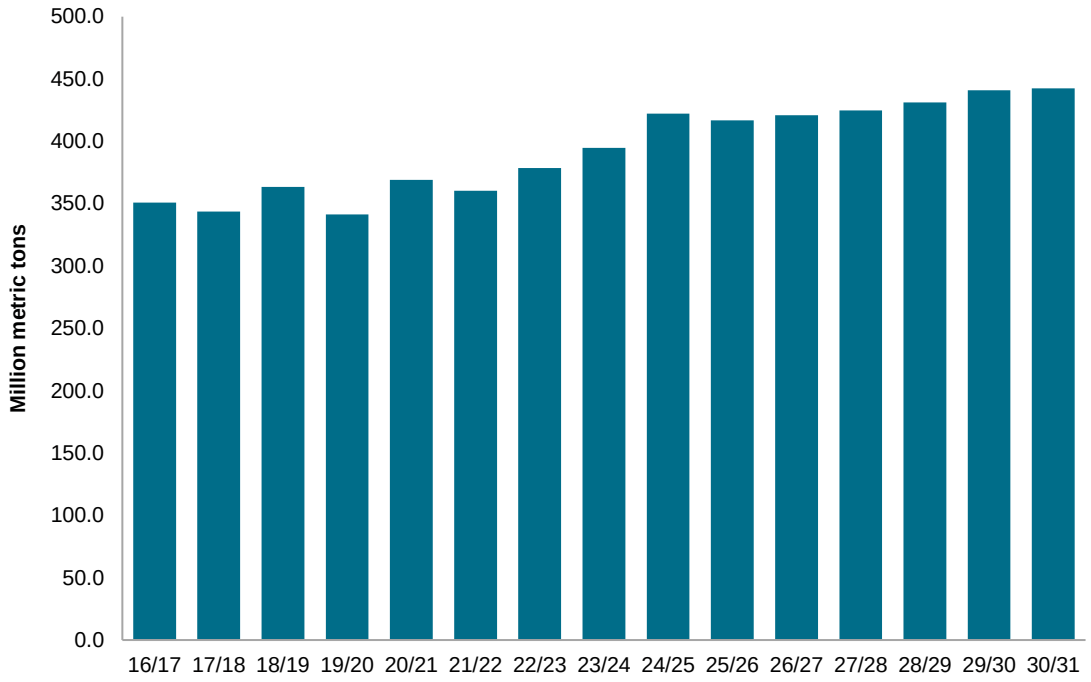


Source: S&P Global Commodity Insights.

- Global wheat production remained steady in 2024/25, only increasing 0.8 MMT to a total of 791.2 MMT. While Canada, the US, and Argentina experienced strong harvests, this was offset by poor yields in Russia. Global supplies of wheat is expected to grow by 47.1 MMT by 2030/31 to a total of 838.3 MMT with the main increases originating from the EU and Ukraine.
- Global wheat imports declined by 9.6 MMT for a total of 212.4 MMT with the decline being driven by lower imports from China, Turkey, and Indonesia. While global imports are expected to increase to 229.3 MMT by 2030/31, it will be 2027/28 before global wheat imports surpass levels experienced in 2023/24.

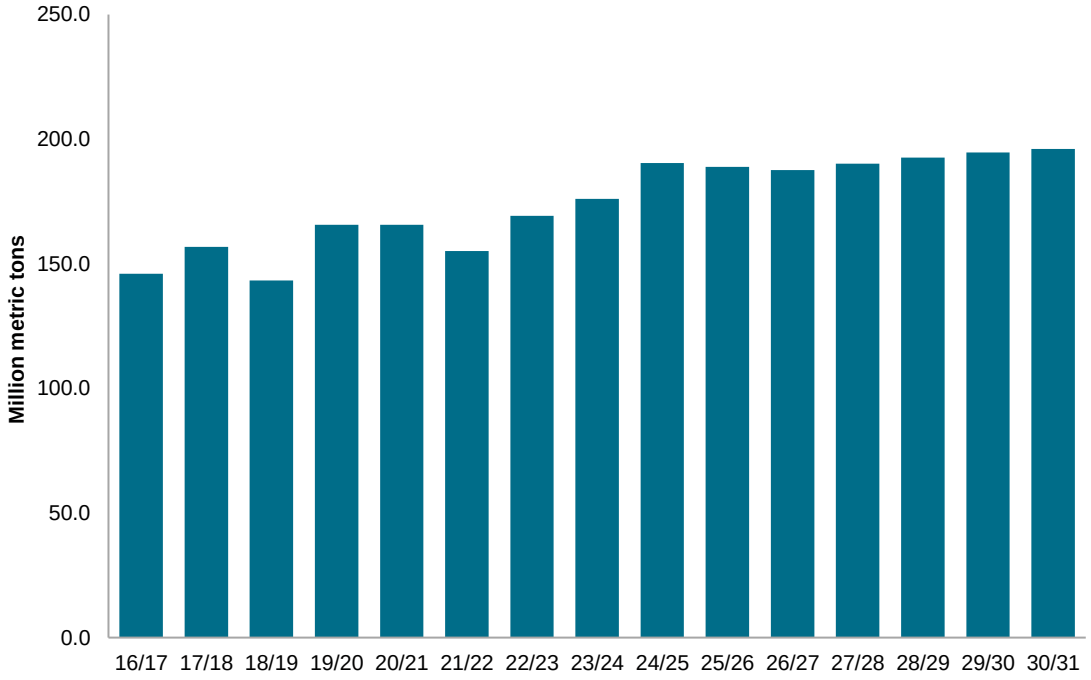
Global soybean production and imports are expected to steadily grow through the forecasted period

Global soybean production



Source: S&P Global Commodity Insights.

Global soybean imports



Source: S&P Global Commodity Insights.

- Global soybean production product increased to 422.2 MMT in 2024/25, a 27.5 MMT increase from 2023/24. This increase in global production is being driven by increased supplies from Brazil, the US, and Argentina. Sustained acreage growth in LATAM, driven by Brazil, and increasing global yields will result in a forecasted global soybean harvest of 442.5 MMT in 2030/31.
- World soybean imports increased by 14.5 MMT in 2024/25 for a total of 190.4 MMT with the increases being concentrated in Europe, Eurasia, and Asia, although Chinese imports decreased. Imports are projects to remain relatively steady and grow slowly through to decade to a total of 196 MMT by 2030/2031.

North Dakota Energy Outlook

The OPEC+ reduced its production by 258,000 b/d, totaling 33.43 million b/d. As of December, Production levels remain in line with OPEC+ voluntary targets

Conflict in the Middle East intensifies

- Following the U.S. election, a potential return to maximum sanctions enforcement in Iran could further reduce its oil exports and potentially influencing global oil markets.
- Red Sea disruptions continue but most non-Russian crude tankers are avoiding passage through the Red Sea and diverting around Africa.
- Ukraine – Russia tension escalates as Ukraine launches strikes on Russia using US-supplied missiles, prompting Russia to lower its nuclear weapon deployment threshold. This development could lead to fluctuations in oil prices. A potential Trump victory in the US election might help de-escalate the tension.

OPEC+ continues plan to increase production

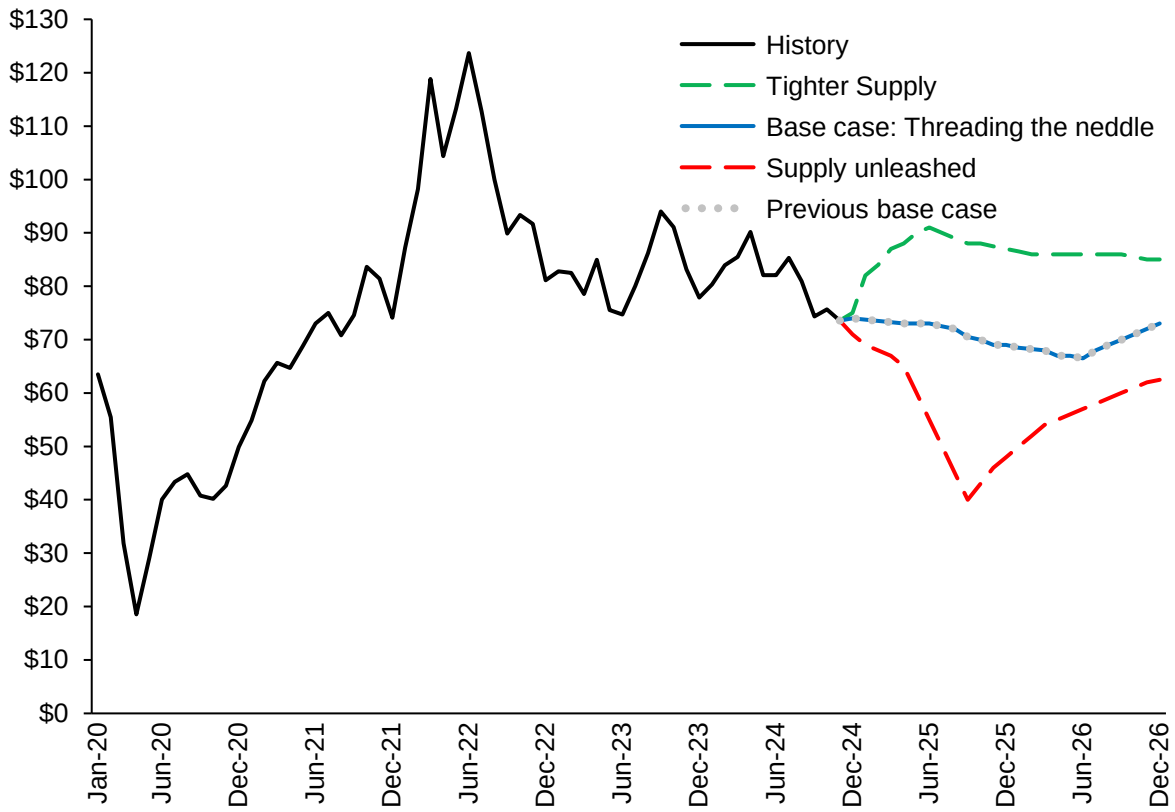
- In October, oil production by OPEC+ decreased by 258,000 b/d, totaling 33.43 million b/d, led by reduced output from Kazakhstan.
- As of December, Production levels remain in line with OPEC+ voluntary targets as Iraq and Russia reduce their production levels to within their quotas.

World economic outlook

- World oil (total liquids) demand growth for 2024 is at 1.03 million b/d, and demand is forecasted to accelerate in 2025 to 1.3 million b/d.
- Oil demand in China is growing at a slower pace. Total liquid demand will rise 188,000 b/d in 2024 and 293,000 b/d in 2025.
- Non-OPEC+ oil production is set to increase in 2025 by 1.0 million b/d, with major production growth coming from US, Canada, Brazil and Norway.

Short-term price forecast - The base case outlook suggests $69-$74/b range — assuming OPEC+ lowers its production growth target for 2025

S&P Global Commodity Insights Dated Brent price outlook ($/b)



Data compiled December 18, 2024.
Source: S&P Global Commodity Insights.

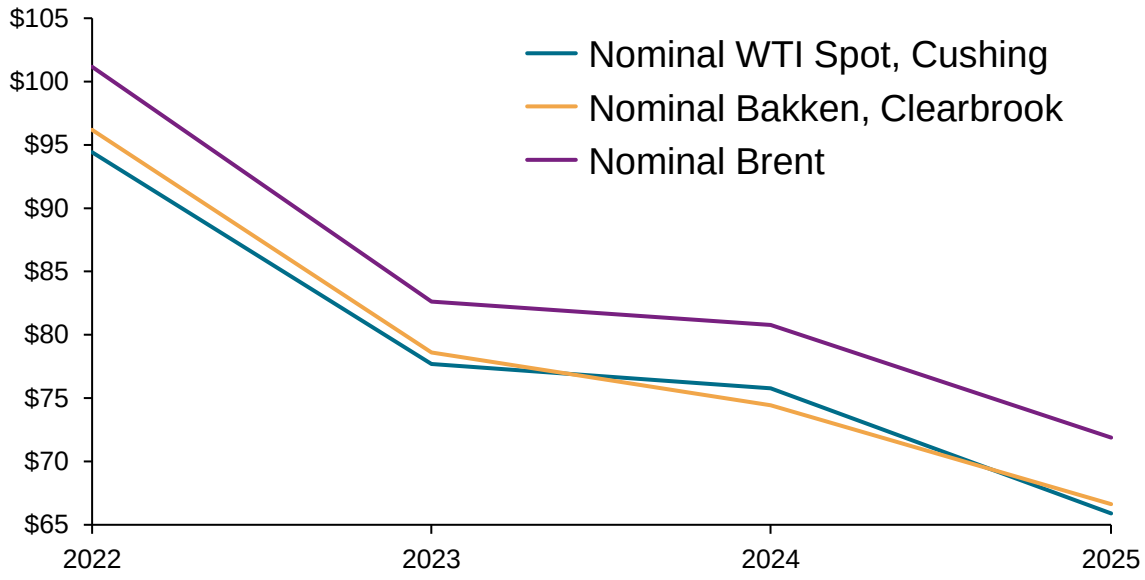
	2023	2024	2025
Historical	$ 82		
Market Management (Base case)		$ 81	$ 88
Falling oil supply (Tighter Supply)		$ 81	$ 72
Demand weakness (Supply unleashed)		$ 80	$ 55

- **Risks of OPEC+ Production Increases:** Uncertainty is high given possibility of OPEC+ increasing production in 2025 but at a lower rate than the OPEC+ plan. The December through January 2025 base case Dated Brent outlook average is $72/b.
- If OPEC+ implements full production increases, global crude oil inventory could build rapidly, potentially causing prices to drop significantly, possibly into the $40-$50/b range.

- **Opportunities for Tightening the Market:** Onshore crude inventories outside China remain low, creating some room for modest production increases. Alternatively, a production cut or supply contraction, particularly from Iran, could tighten the market and push oil prices back toward $90/b.

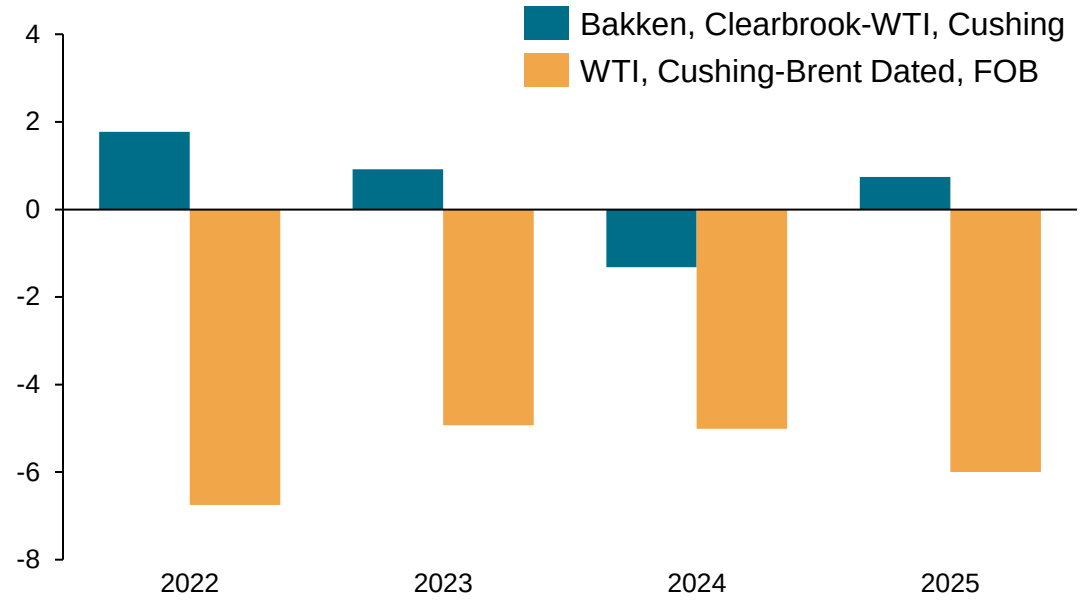
S&P Global projects a slight decline in 2025 oil prices due to OPEC+ planned increase in oil production late in 2024 and in 2025

Comparison between Bakken Clearbrook, WTI and Brent ($/b)



Data compiled December 2024.
Source: S&P Global Commodity Insights.

Price differentials for Bakken, Clearbrook - WTI and for WTI-Brent ($/b)

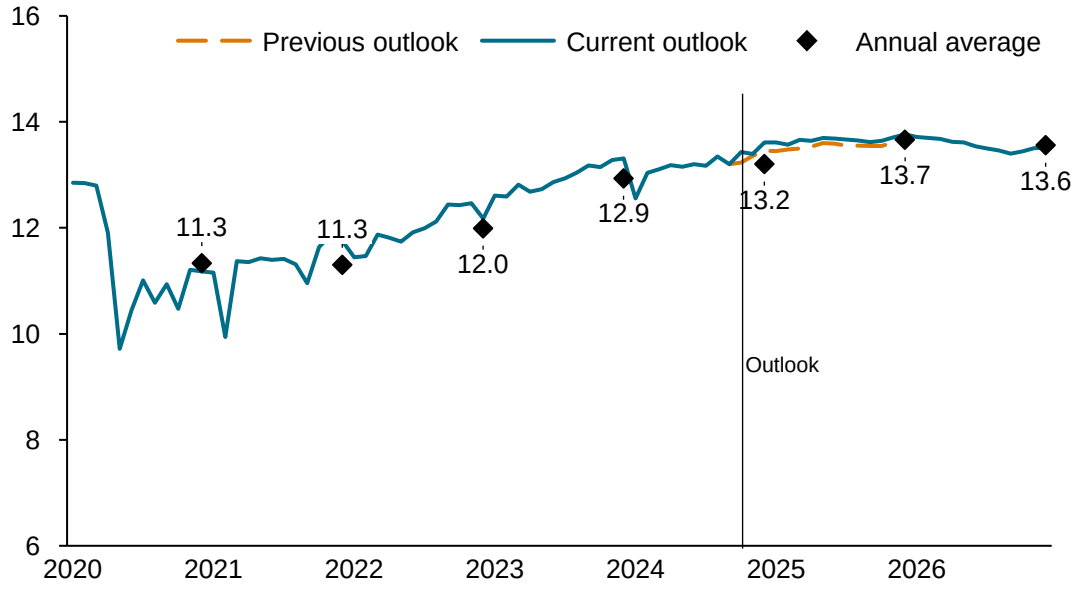


Data compiled December 2024.
Source: S&P Global Commodity Insights.

- As of December 17th, 2024, the WTI price stands at $70.1/b reflecting a decrease of about $0.6/b compared to last month. Brent is about $72.8/b, or $2.7/b higher than WTI.
- Bakken crude oil price at Clearbrook is tied to WTI. Bakken oil competes against other light crudes in the region primarily in the Chicago-Midwest market, the US Gulf Coast and the US East Coast, depending on transportation economics. Bakken price is expected to exceed the WTI in 2025 due to sweet spot exhaustion.

US crude oil production: Average output expected to be around 13.2 million b/d in 2024, and 13.7 million b/d in 2025

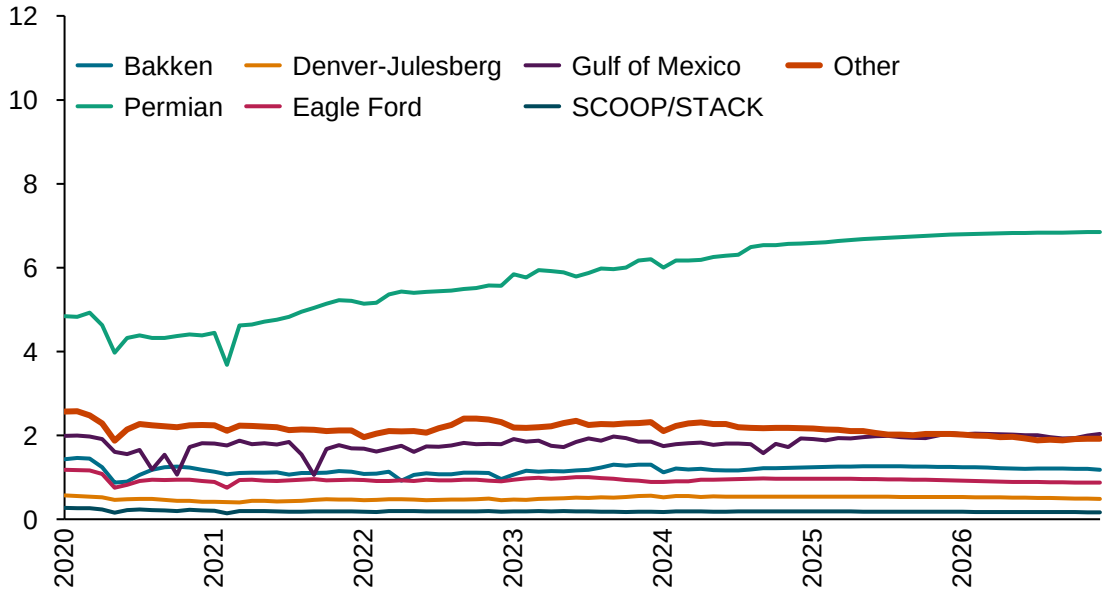
Monthly US crude oil production (million b/d)



Data compiled December 2024.
Source: S&P Global Commodity Insights.

- US oil production exceeded 13 million b/d
- Lower prices are expected to slow US onshore growth in 2025

US crude oil production by basin (million b/d)

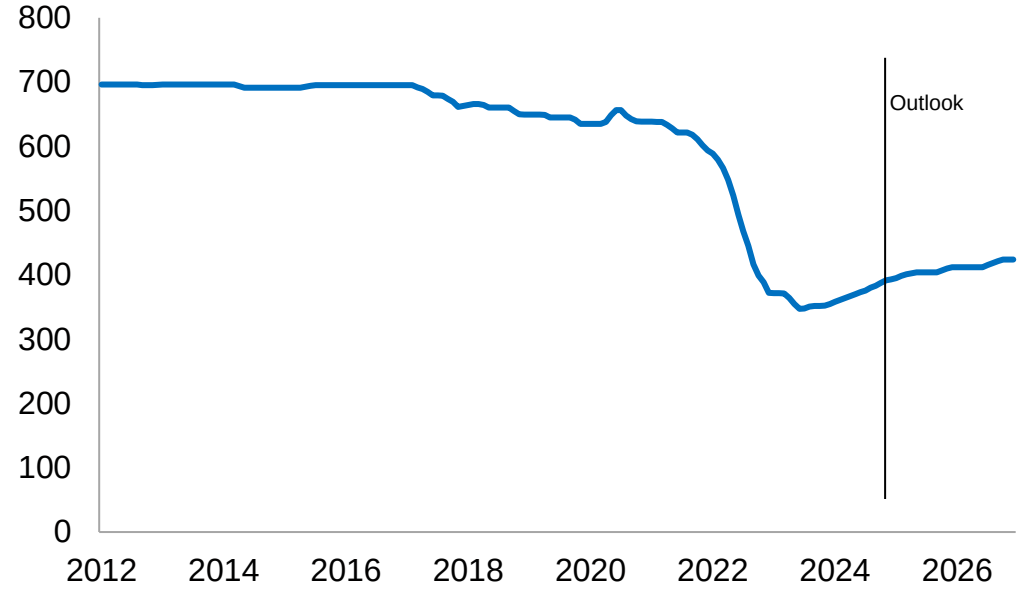


Data compiled December 2024.
Source: S&P Global Commodity Insights.

- The Permian continues to grow through 2026 while other US basins face decline or stagnation
- Lower production growth due to large acquisitions of private companies by public companies, as their aggregate portfolios are optimized for cash flow

As of November 15, 2024, the SPR inventory stood at 389 million barrels, just over half of its 714 MMbbl capacity

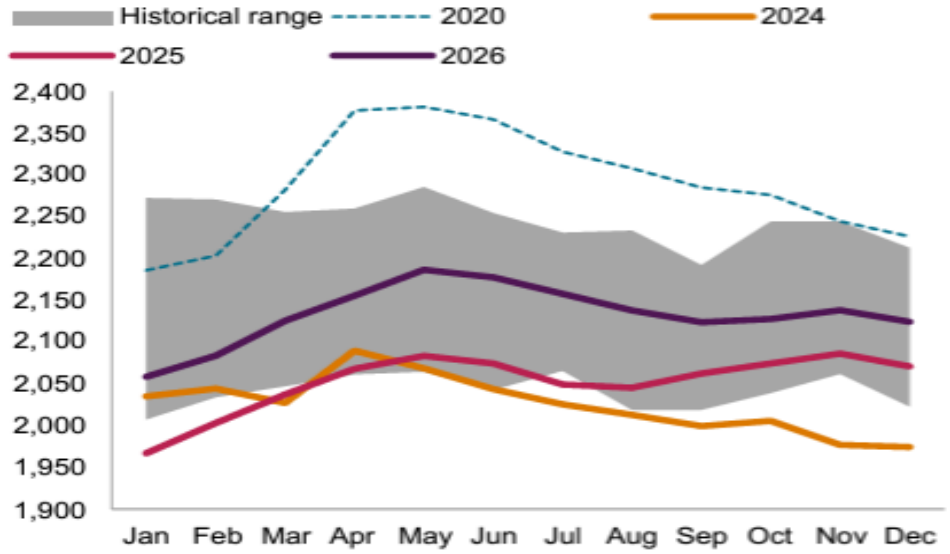
US SPR inventories, MMbbl



Data compiled December 2024.

Source: S&P Global Commodity Insigts.

Observable non-China global commercial crude oil inventories (billion barrels)



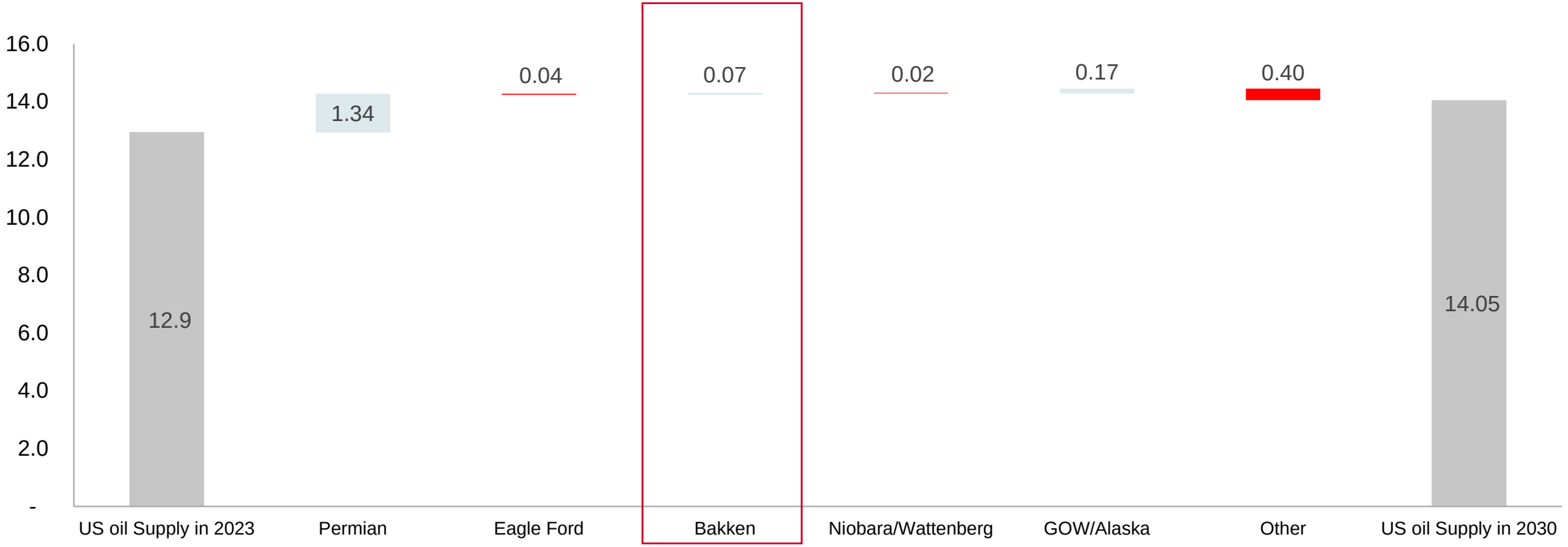
As of Dec. 18, 2024.

Source: S&P Global Commodity Insights.

- US oil production exceeded 13 million b/d
- Lower prices are expected to slow US onshore growth in 2025

Production in 2030 will be around 14.05 MMbbls/day, of which 1.2 MMbbls/day will come from the Bakken

US oil production outlook by play to 2030 (million b/d)



Data compiled January 2025.

Source: S&P Global Commodity Insights.

ND production update: after an all-time high producing well count in October, permitting and rig counts have contracted

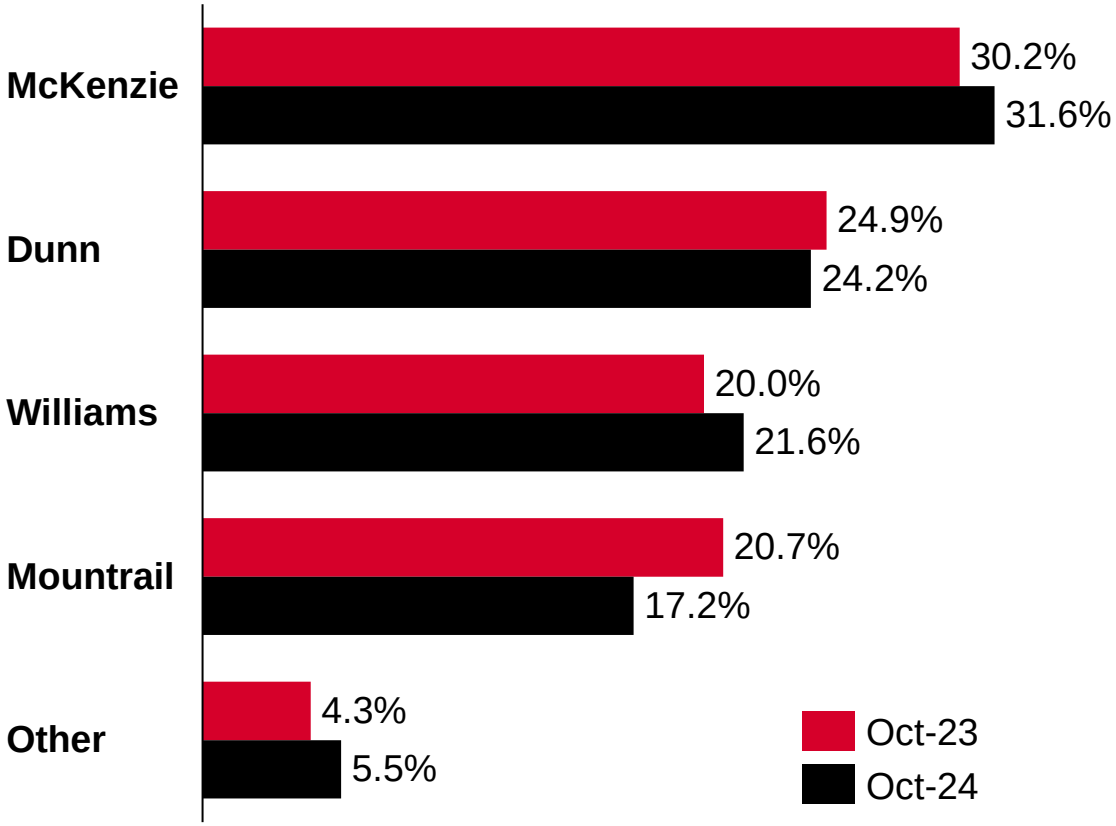
Item	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Change[2]
Oil Production(MMBbl/d)	1.19	1.17	1.18	1.20	1.18	N/A	⇔
Gas Production(Bcf/d)	3.49	3.46	3.53	3.56	3.42	N/A	⇔
Wells Permitted	78	107	100	100	111	78	↓
Rig Count	37	39	38	38	39	37	↓
New Wells Completed	55	79	97	58	95	98[1]	↑
Wells Waiting on Completion (DUC Wells)	372	372	383	376	331	N/A	⇔
Producing Well Count	19,025	19,049	19,116	19,200	19,334	N/A	⇔

- A decrease in producing well count is likely to lead to a flattening of oil production and gas production
- Permitting activity has dropped off from October, but rig activity is stable and could rise in the next year
- The drilling rig count remains steady due to mergers and acquisitions but is expected to increase
- Drilling - activity is expected to increase slightly as operators continue to maintain a permit inventory of approximately 12 months

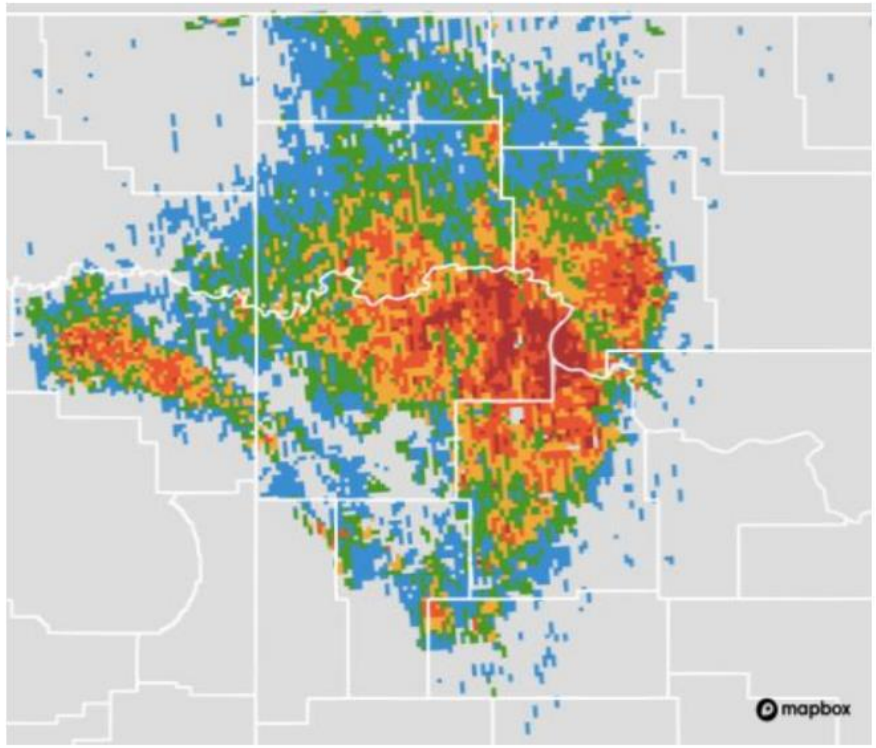
Source: North Dakota Department of Mineral Resources Director's Cut (as on 18th December)
Notes: 1. Preliminary number, it will be adjusted/updated in next updates 2. The change refers to the period from October-24 to November-24
3. Inactive wells include temporarily shut-wells or other wells that may resume production in the near future

Historical production by county – four counties have nearly 95% of all production. A slight shift from McKenzie/Mountrail counties to Dunn/Williams counties, all core counties

Historical oil production by county
% by county



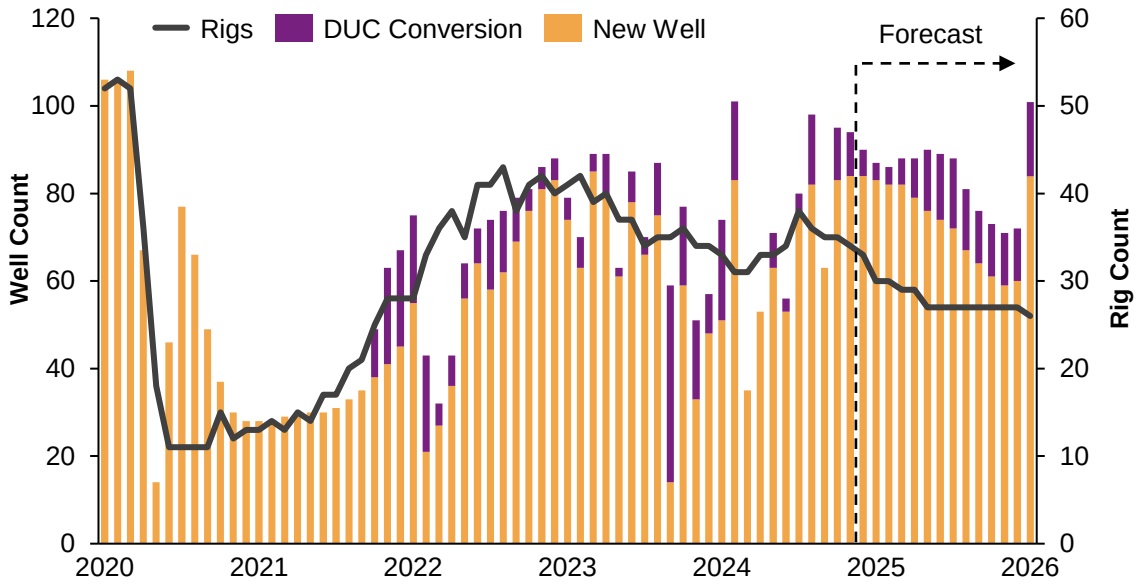
Bakken quality



Screenshot as of Sept. 6, 2023.
Source: S&P Global Commodity Insights upstream E&P content (Energy Studio: Impact).
Underlying base map provided by © Mapbox and © OpenStreetMap.org contributors.

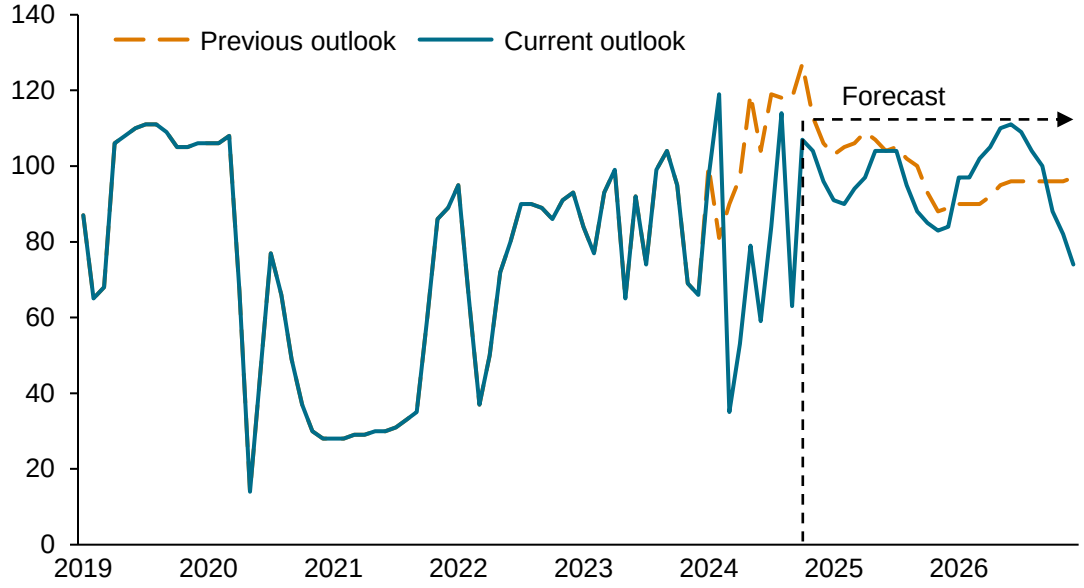
The latest monthly forecast considers roughly 93 new wells per month in 2025, reduced from 101 per month, on average accompanied by a moderate decrease in rig counts

Bakken historical and forecast well count and rigs



Data compiled December 2024.
Source: S&P Global Commodity Insights.

Bakken Base Case New Well Forecast

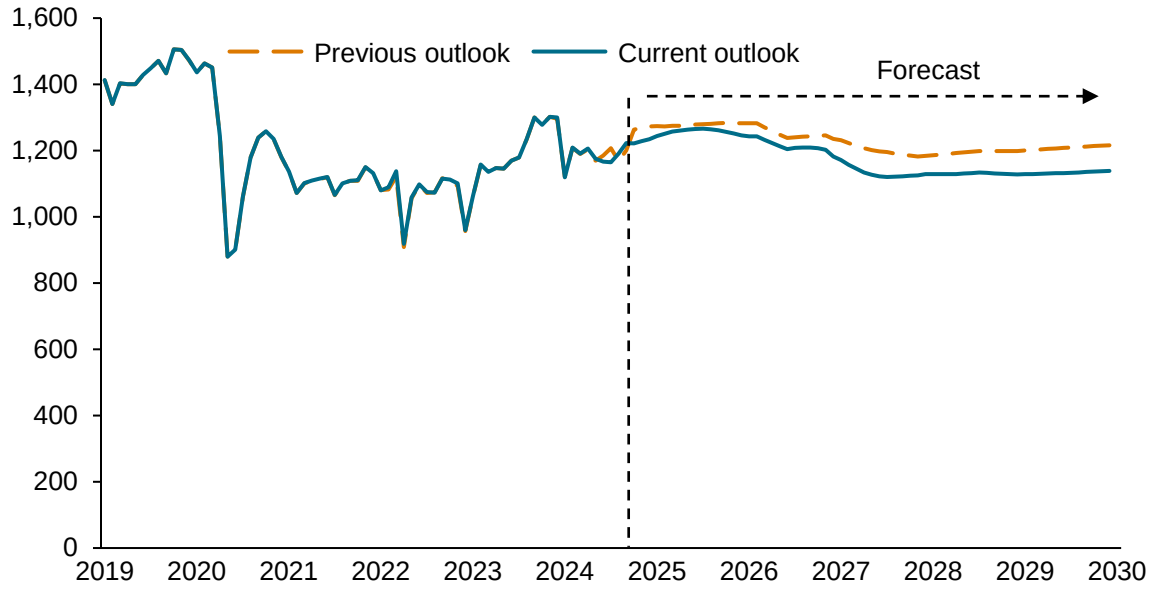


Data compiled December 2024.
Source: S&P Global Commodity Insights.

- New wells count is expected to reduce by end of 2025 as oil price is expected to dip in 2025
- The December 2024 long-term new well forecast is lower than the previous month's forecast as well counts in the play have been lower than expected

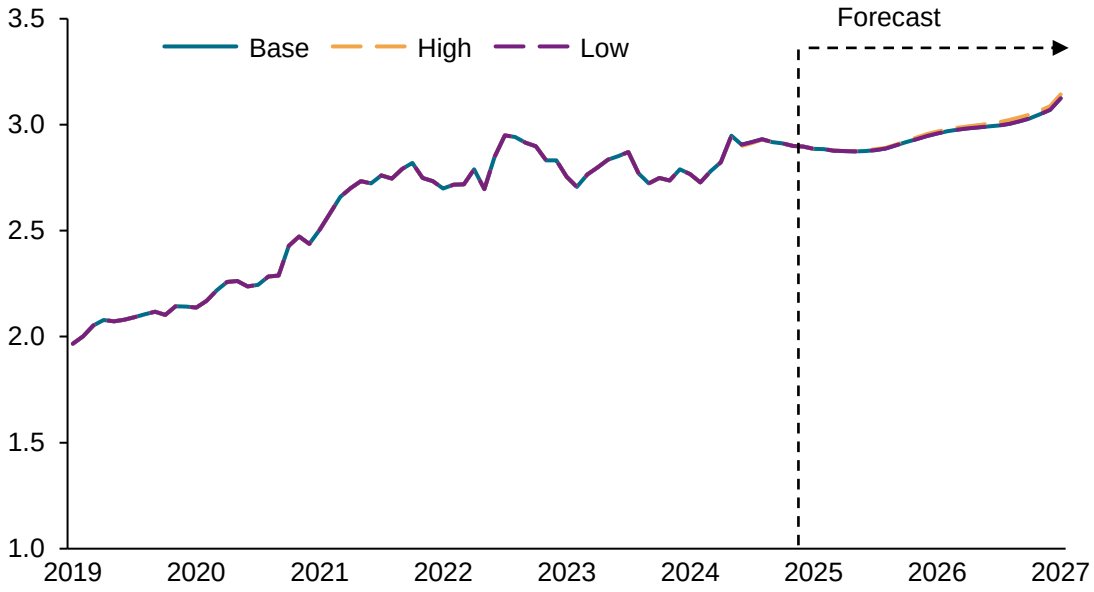
Oil production to remain steady at ~1.2 Million b/d through 2026

Bakken Base Case Oil Production Forecast (thousand b/d)



Data compiled December 2024.
Source: S&P Global Commodity Insights.

Bakken Historical GOR And Forecast By Case (Mcf/Bbl)

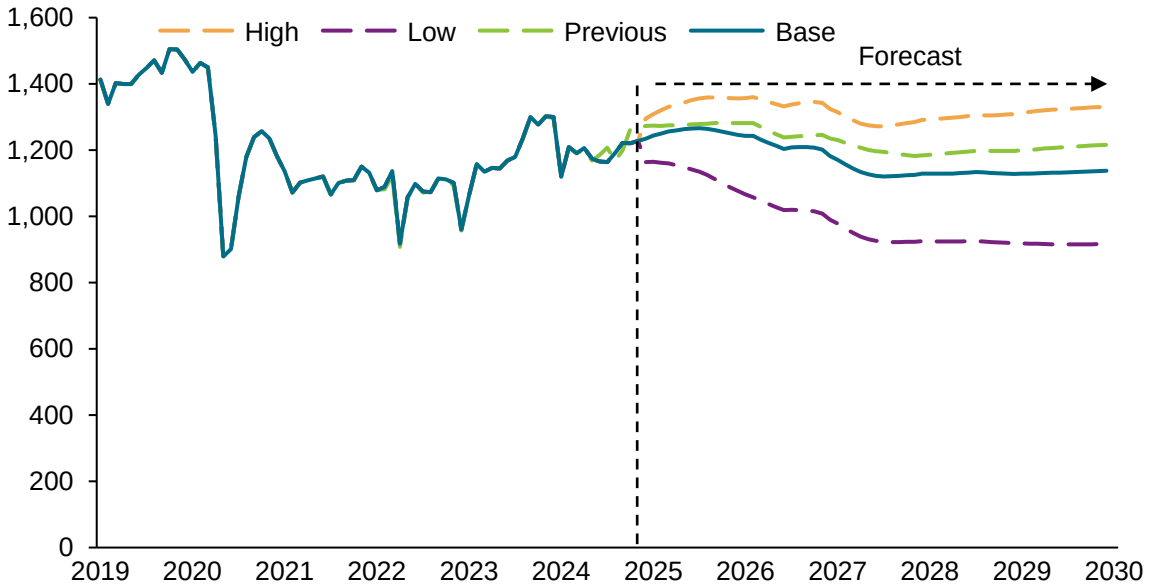


Data compiled December 2024.
Source: S&P Global Commodity Insights.

- North Dakota production increased compared to August 2024, according to state data
- The production drop year to year is attributed to cutbacks in spending resulting from increased mergers and acquisitions in the basin
- Despite longer laterals and greater completion intensity applied to the lower quality acreage, average productivity will continue to decrease
- Oil production is expected to remain flat in 2026, followed by a steady decline due to exhaustion of the core acreage in the play

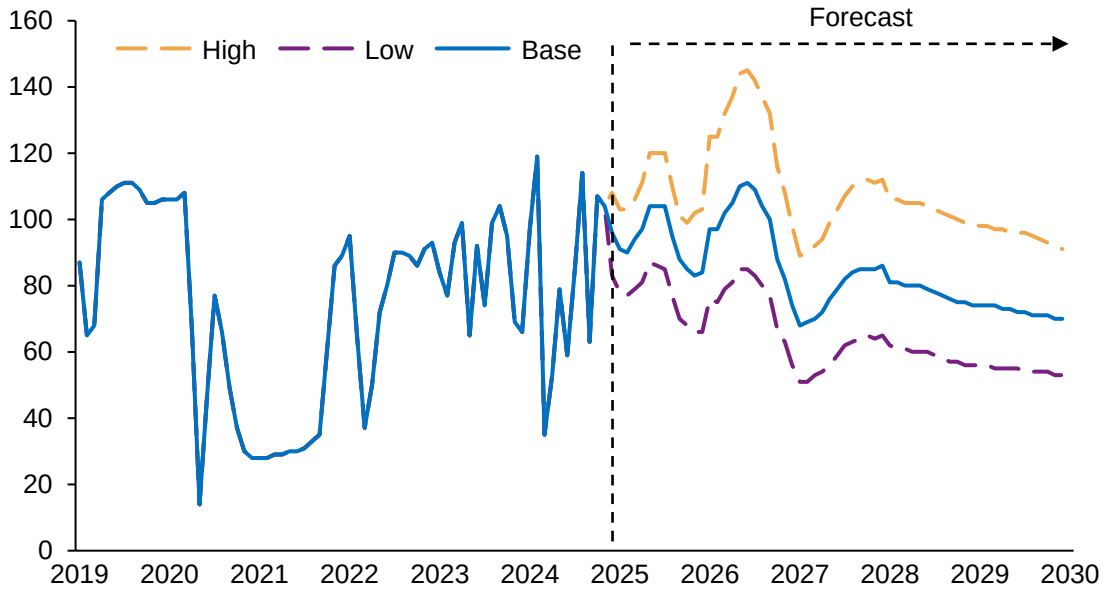
Bakken oil production base case needs oil prices in the $70s per barrel to get production levels to 1.2 million b/d by 2026

Bakken Historical Oil Production And Forecast By Case (thousand b/d)



Data compiled December 2024.
Source: S&P Global Commodity Insights.

Bakken Historical Well Count And Forecast By Case (Total New Wells)

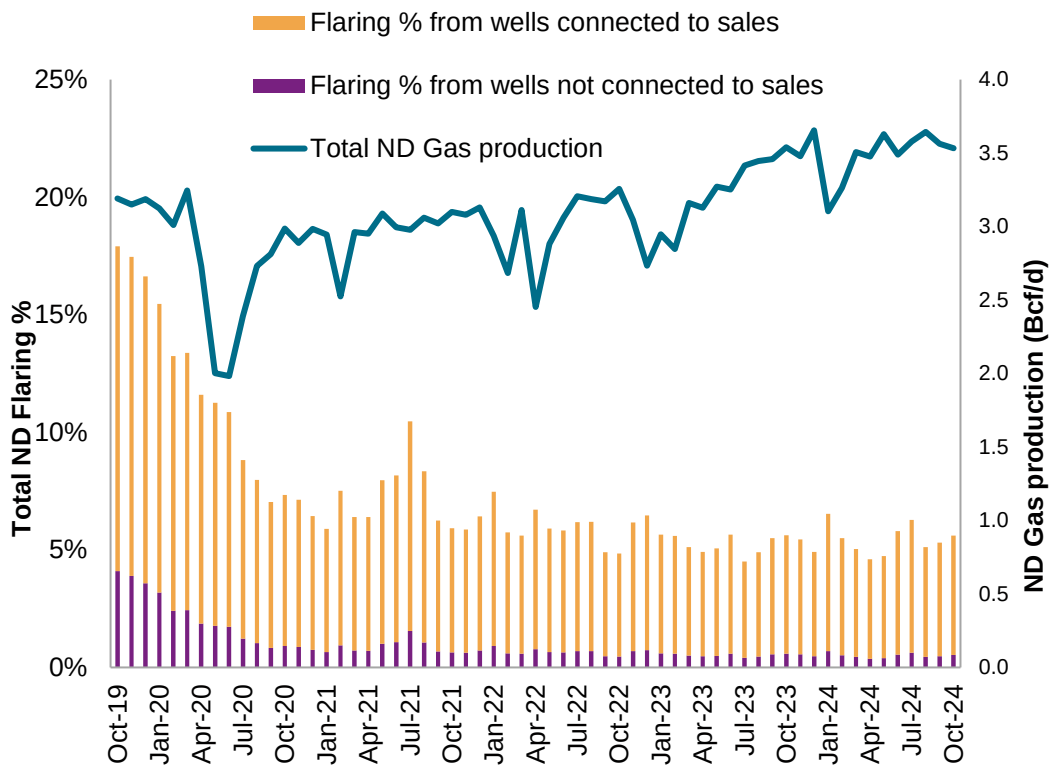


Data compiled December 2024.
Source: S&P Global Commodity Insights.

- The high case has an oil production rate of about 1.35 million b/d by 2026 with a 24% higher price than the Base case. The higher price outlook pushes the new well spuds to the 120-130 wells per month range.
- The low case considers a 17% weaker oil price than the one for the base case leading to lower reinvestment rates. In the low case new wells could be lower than ~70 per month, and oil production could drop below 1.0 million b/d. The low case also considers the shut down of the Dakota Access Pipeline (DAPL), which is currently being litigated.

Gas capture has improved significantly in recent years with a high capture rate of 94~95%, contributing to a more sustainable and environmentally responsible oil and gas industry in ND

North Dakota gas flaring trend vs gas production

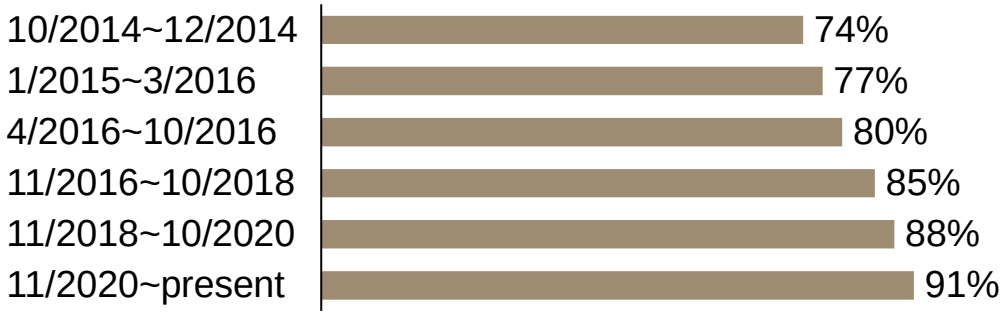


Data compiled in January 2025.

Source: S&P Global Commodity Insights.

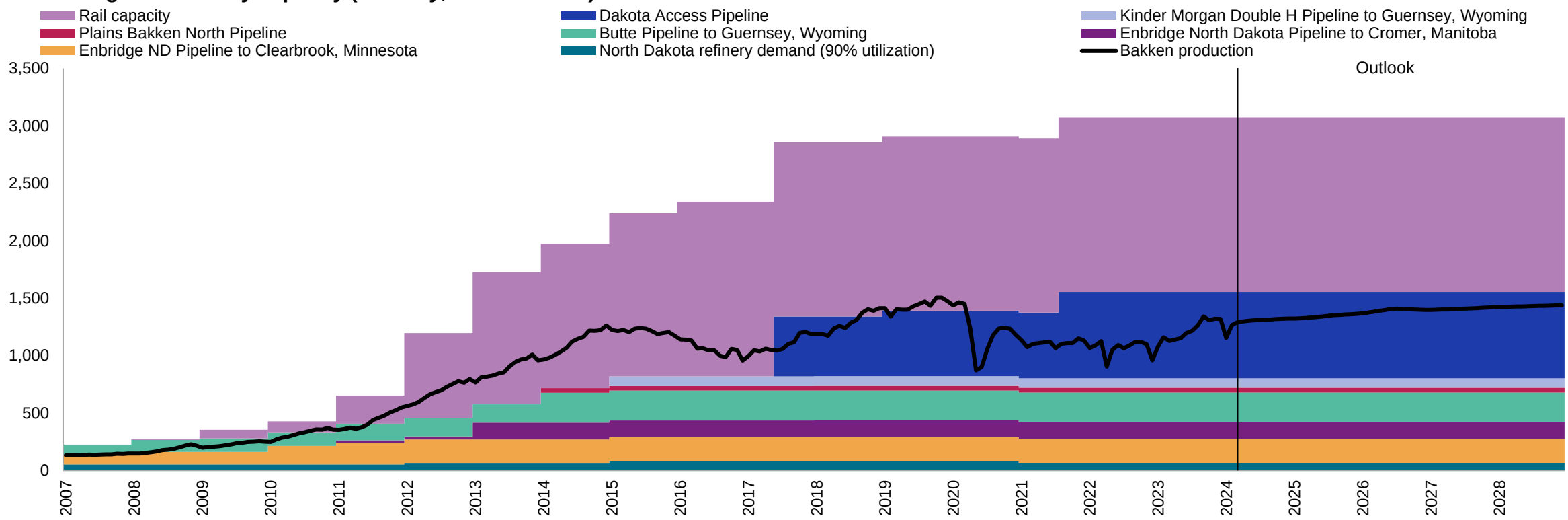
- Introduced in 2014, North Dakota Industrial Commission (NDIC) Order 24665 mandates that oil and gas companies limit the flaring of natural gas during production.
- This order aims to increase the capture of natural gas, reduce percentage of flared gas, and incentivize investment in gas capture infrastructure.
- Significant progress has been made, with 94% to 95% of natural gas being captured.
- In terms of flaring gas, 1% is from wells not connected to sales, which is likely due to a lack of pipelines, while the remaining 4% of flared gas indicates that the currently existing infrastructure is insufficient to handle the gas.

Gas capture goal by year



DAPL is key to the Bakken remaining competitive

Bakken region takeaway capacity (monthly, thousand b/d)

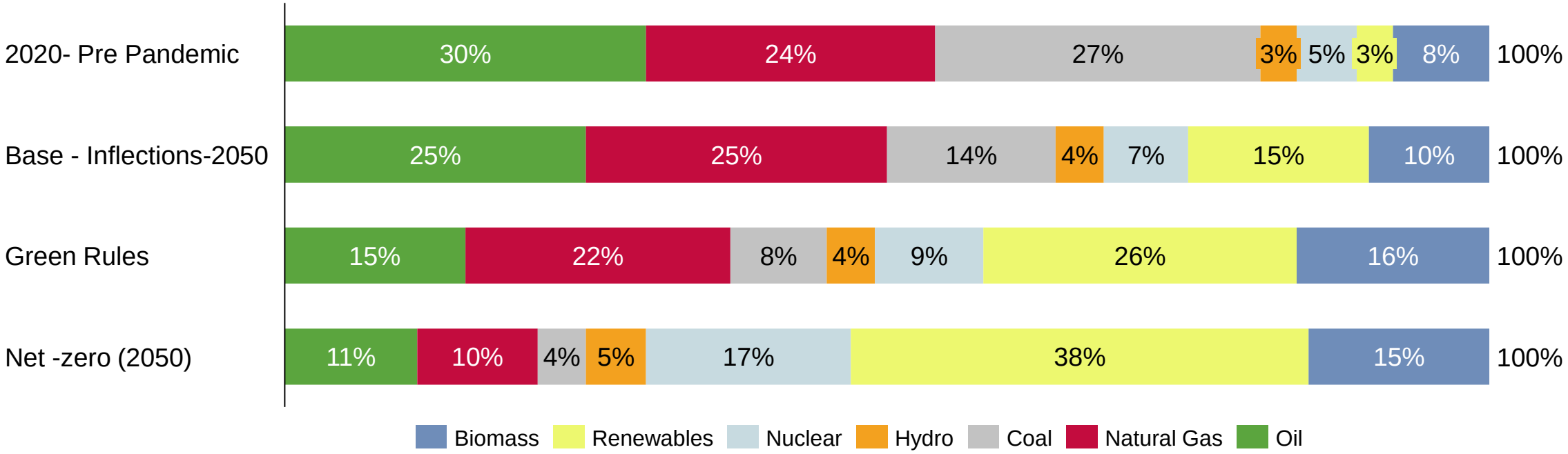


Data compiled December 2024.
Source: S&P Global Commodity Insights.

- The Dakota Access Pipeline (DAPL) is vital for Bakken crude oil, transporting approximately 750,000 b/d in 2023, which represents about half of the region's total supply to the market. Despite ongoing legal challenges and an environmental assessment pending by the Army Corps of Engineers, DAPL is expected to remain operational and may expand capacity to over 1 million b/d.

- If the DAPL were permanently shut down, transporting 750,000 b/d by rail could increase costs by $8 to $9 per barrel, negatively impacting Bakken's competitiveness against other U.S. oil sources.

Energy transition - Ambitious climate policies and net-zero emissions targets are driving a change in energy mix for all scenarios – Green Rules scenario will not meet the goals of Paris compliance



- As a result of the oil-price crash due to the pandemic new emphasis by industry and government on clean energy has shifted. The current projected mix of energy sources has reduced reliance on oil and coal (which are more carbon intensive than natural gas) and increased reliance on renewables, mainly wind and solar

- Projected increases in average global temperature by 2100 for each scenario

  - Pre-pandemic 3.1 ℃
  - Base – inflections 2.6 ℃
  - Green Rules 1.9 ℃
  - Net – zero 1.5 ℃

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Market Intelligence

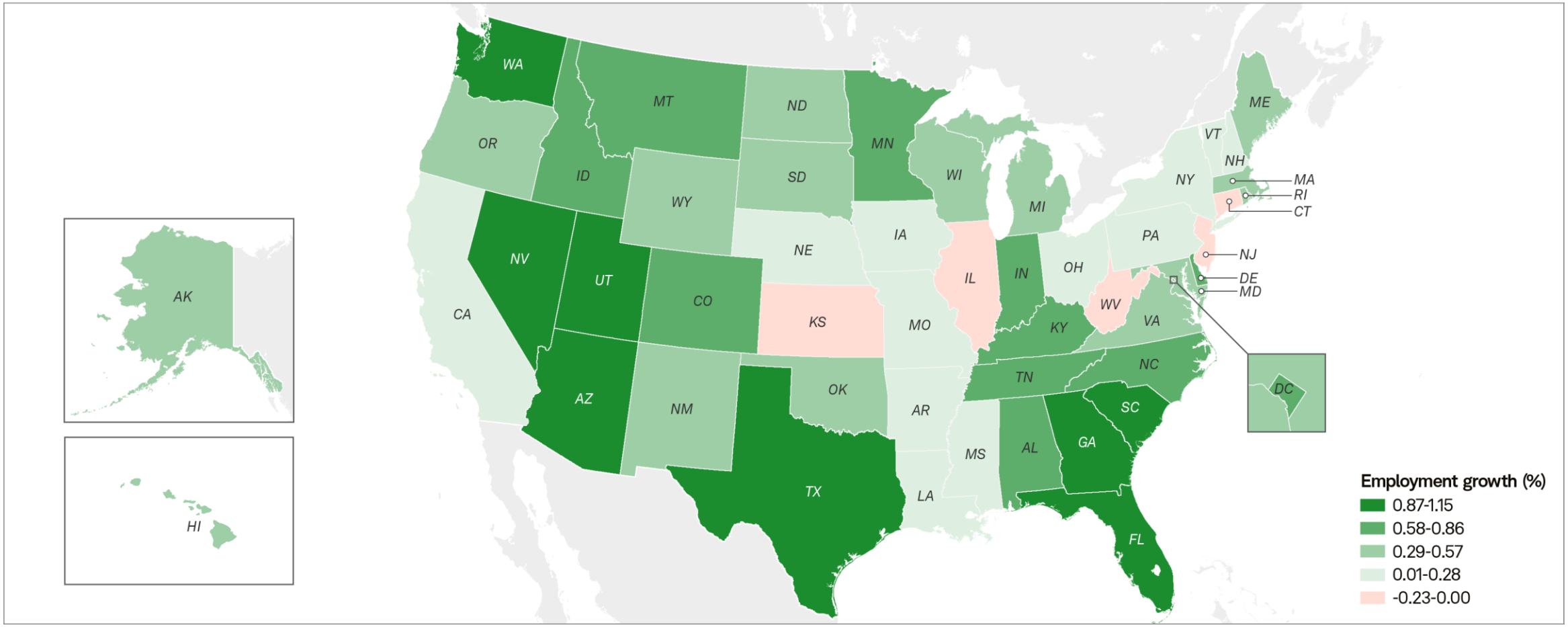
Economic Outlook: North Dakota

US regional economies overview

- Employment growth in October weakened, with payrolls declining in 32 states and the District of Columbia, for the first time since July 2023. Hurricanes Helene and Milton most likely depressed hiring in the southeastern states, while strikes against The Boeing Co., along with strikes against other companies, impacted the West. Over the last 12 months, all states added jobs.
- On a regional level, labor market weakness had been driven by decreases in the South, West and Northeastern region, with states such as Washington, Montana, Florida, Maryland and Delaware leading the decline. The North Central region was the only region to add jobs, with state hiring in Arkansas and Missouri propping up the region. The primary sectoral driver of declining employment nationally, in absolute terms, was the professional and business sector, followed by manufacturing. The only strength in hiring was from the education and healthcare sector.
- Thus far, 47 states have either returned to or surpassed their pre-pandemic peak of employment. Vermont was the most recent to do so, with a return to peak in July. The only states left to have not returned to peak are Maryland, Louisiana, Hawaii and the District of Columbia.

Payrolls will continue to expand across most states over the next year

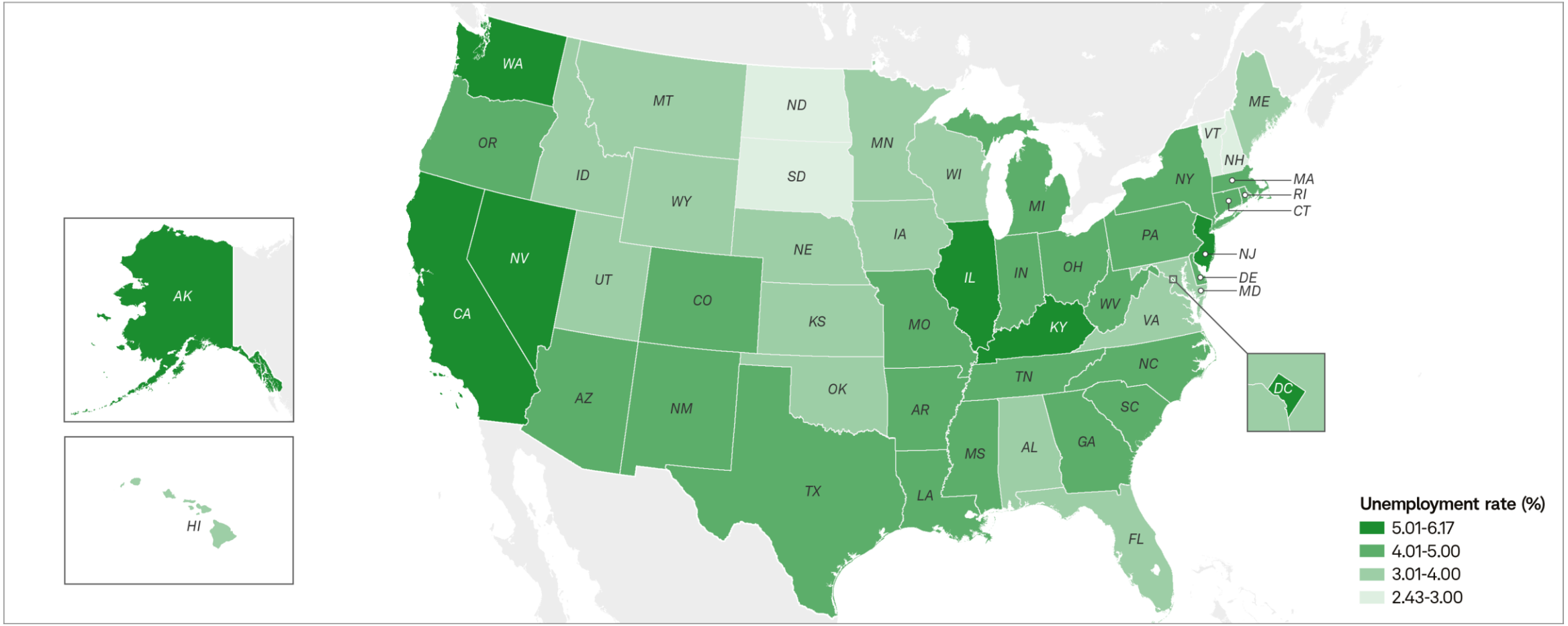
Employment growth, Q4 2024–Q4 2025



Data compiled Dec. 19, 2024.
Source: S&P Global Market Intelligence: 240138-01.

Unemployment rates will rise slightly in 2025 as economic growth moderates

Unemployment rate, Q4 2025



Data compiled Dec. 19, 2024.
Source: S&P Global Market Intelligence: 240139-01.

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Macroeconomic Outlook

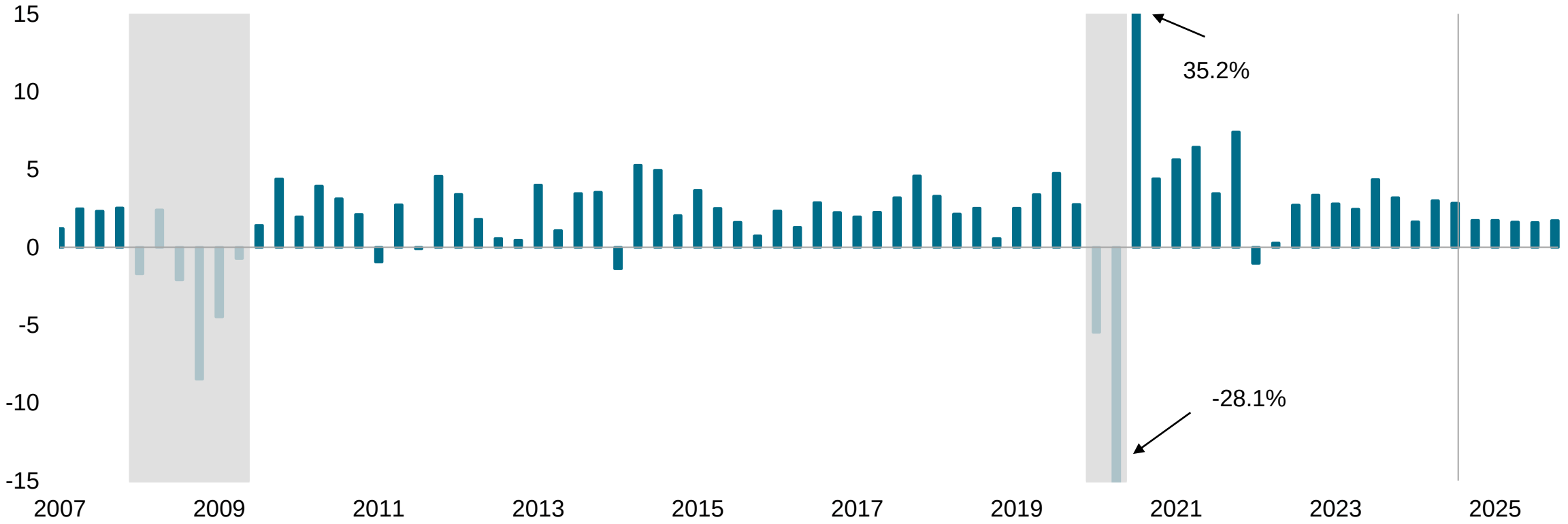
Fallout from tariffs to weigh on US GDP growth

- S&P Global Market Intelligence looks for 2.7% GDP growth this year, followed by 1.9% growth in 2025 and 1.8% growth in 2026. The latter two figures are 0.1 and 0.3 percentage point below last month's forecast. The markdown to growth reflects the net effect of several new and important developments. In this month's forecast, we have included our initial take on policies likely to be implemented by the incoming Trump administration and Republican-controlled Congress: personal and corporate tax cuts, tariffs, a crackdown on undocumented immigration, and deportations. Personal and corporate tax cuts are expected to boost growth, while tariffs, slower immigration, and deportations are expected to subtract from growth.
- Fallout from tariffs is expected to prove damaging to US economic activity. This forecast assumes the implementation of a 10% universal tariff along with a 30% tariff on imports from mainland China, all of which begin going into effect in the second quarter of 2025 and ramp up over four quarters. This will give rise to a period of elevated inflation. The Federal Reserve responds by pausing its easing cycle in mid-2025. This, in turn, will support higher interest rates, a stronger dollar, and tighter financial conditions than in our November baseline that will weaken aggregate demand in the near term. Furthermore, we expect foreign countries to respond with retaliatory tariffs on US exports.

Growth chugs along in 2024

Real GDP growth

Annual percent change



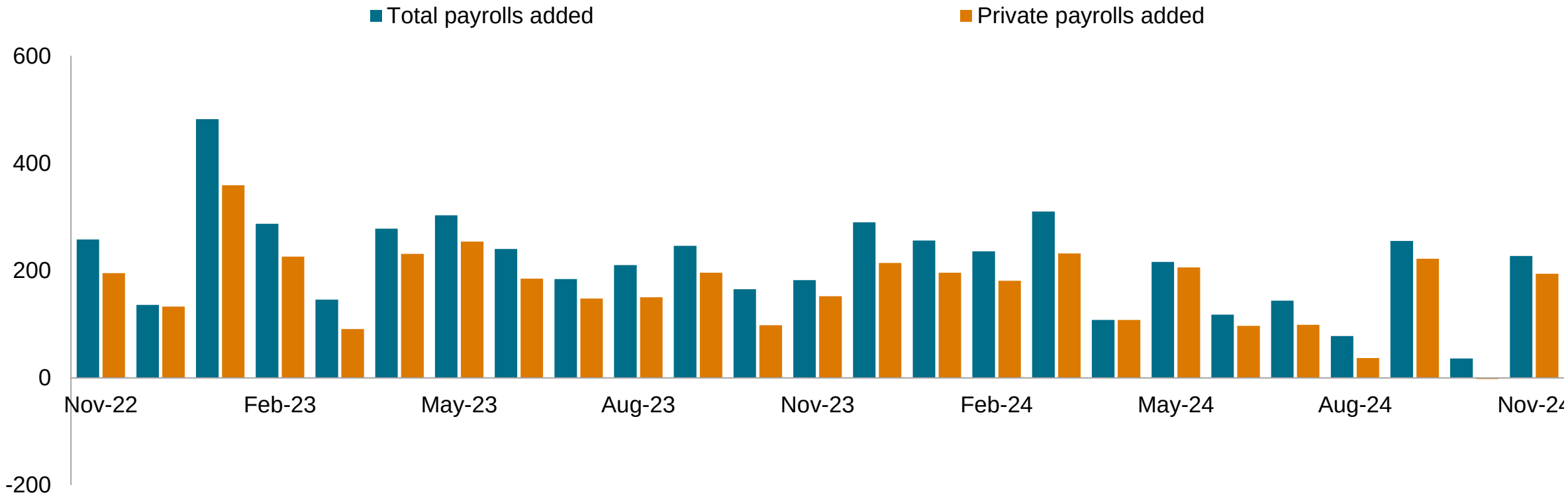
Data compiled Dec. 20, 2024.

Sources: Bureau of Economic Analysis, S&P Global Market Intelligence.

US payrolls increased by 227 thousand in November

Change in nonfarm payrolls

Thousands



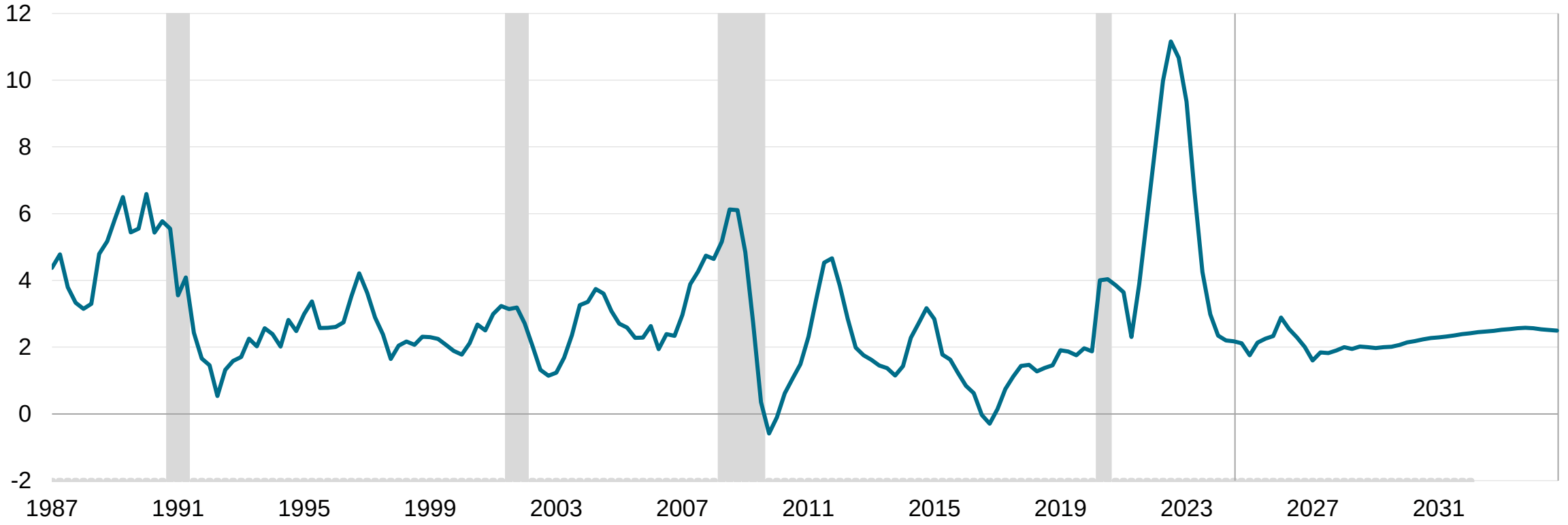
Data compiled Dec. 20, 2024.

Sources: Bureau of Labor Statistics.

12-month inflation in food prices has stabilized near 2%

Consumer Price Index for food and beverages, NSA

Percent change from a year earlier



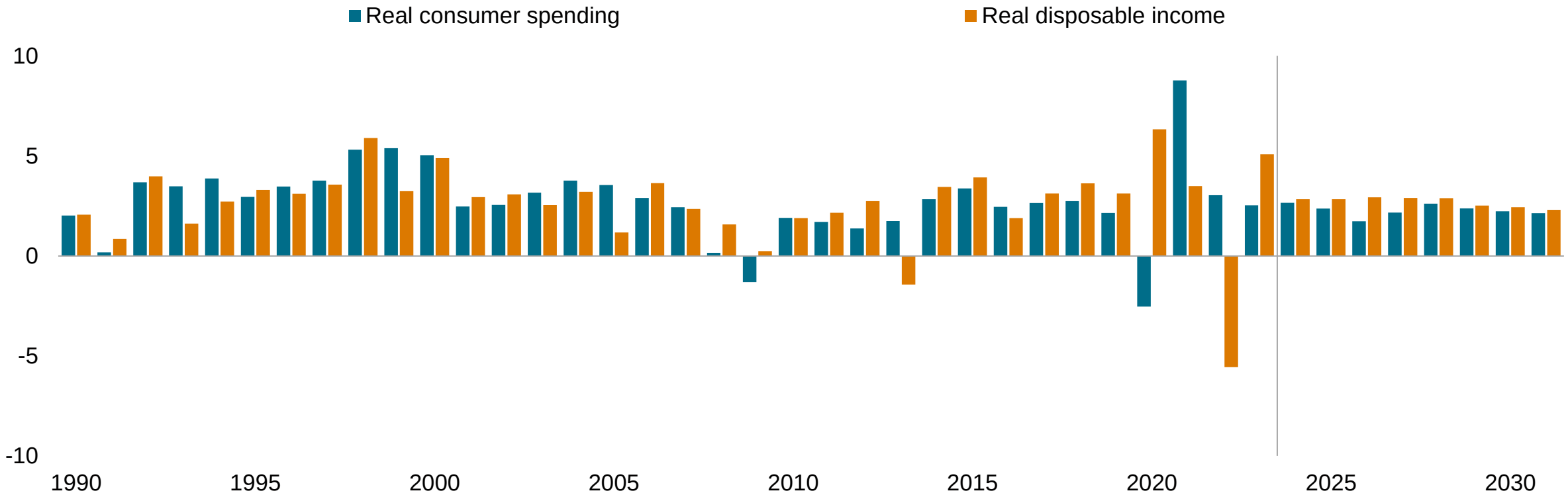
Data compiled Dec. 20, 2024.

Sources: Bureau of Labor Statistics, S&P Global Market Intelligence.

Real disposable income growth moves down slightly in 2024

Real consumer spending and disposable income

Percent change from a year earlier



Data compiled Dec. 20, 2024.

Sources: Bureau of Economic Analysis, S&P Global Market Intelligence.

Risks to the US forecast

Risks to the US forecast

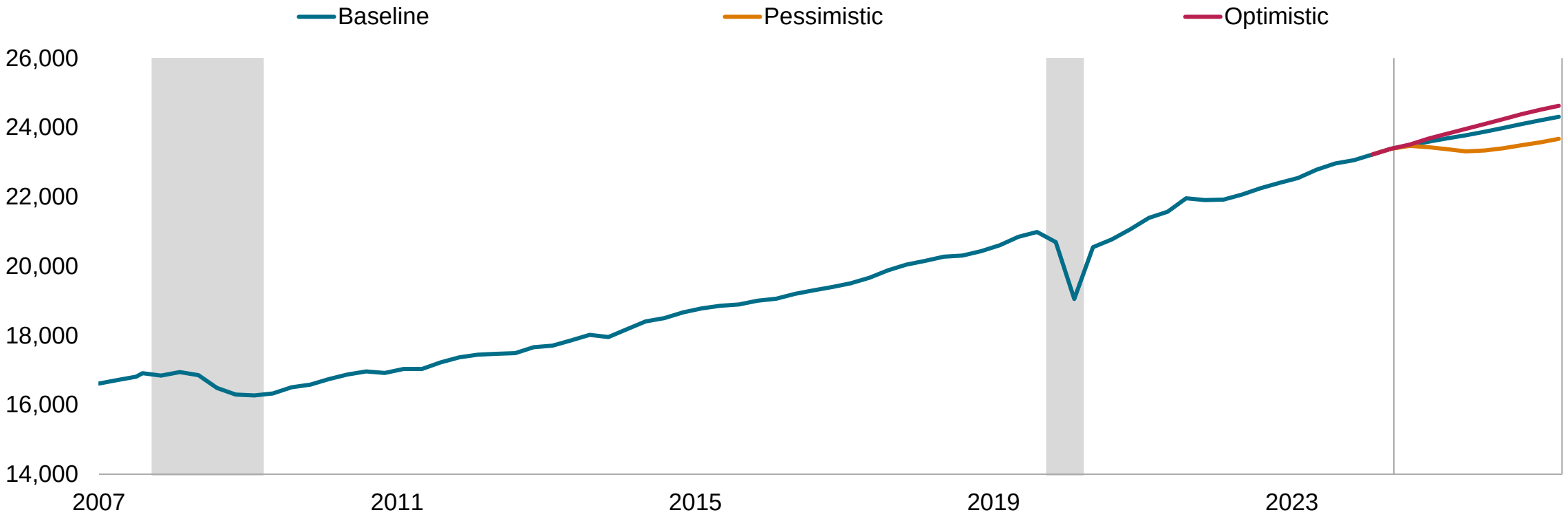
	Baseline (55%)	Pessimistic (25%)	Optimistic (20%)
GDP growth	Real GDP rose 2.9% in 2023. Growth continues at 2.7% in 2024 and 1.9% in 2025.	Real GDP growth comes in at 2.7% in 2024 and slows to 0.3% in 2025.	Real GDP growth ticks down to 2.7% in 2024 and moves to 2.6% in 2025.
Consumer spending	Consumption dropped from 3.0% in 2022 to 2.5% in 2023. Growth continues at 2.7% in 2024 and 2.4% in 2025.	Spending growth nudges up to 2.6% in 2024 and decelerates to 0.4% in 2025.	Spending accelerates to 2.7% in 2024 and 2.8% in 2025.
Housing	Housing starts fell from 1.55 million in 2022 to 1.42 million in 2023 then will decline to 1.35 million in 2024 and 1.31 million in 2025.	Housing starts will drop to 1.35 in 2024 and 1.27 million in 2025.	Housing starts will fall to 1.35 million in 2024 and slip to 1.33 million in 2025.
Inflation	Core personal consumption (PCE) price inflation rose by 4.1% in 2023 and will moderate to 2.8% in 2024 and move to 3.0% in 2025.	Core PCE price inflation cools to 2.8% in 2024 and rises to 3.2% in 2025.	Core PCE price inflation moderates to 2.8% in 2024 and ticks up to 2.9% in 2025.
Business fixed investment	Rose 6.0% in 2023 and rises 3.7% in 2024 and 1.9% in 2025.	Rises 3.5% in 2024 before falling 1.8% in 2025.	Will rise 3.7% in 2024 and 3.0% in 2025.

Data compiled Dec. 20, 2024.
Source: S&P Global Market Intelligence.

Real GDP in alternative scenarios

Real GDP

Billions of chained 2017 dollars



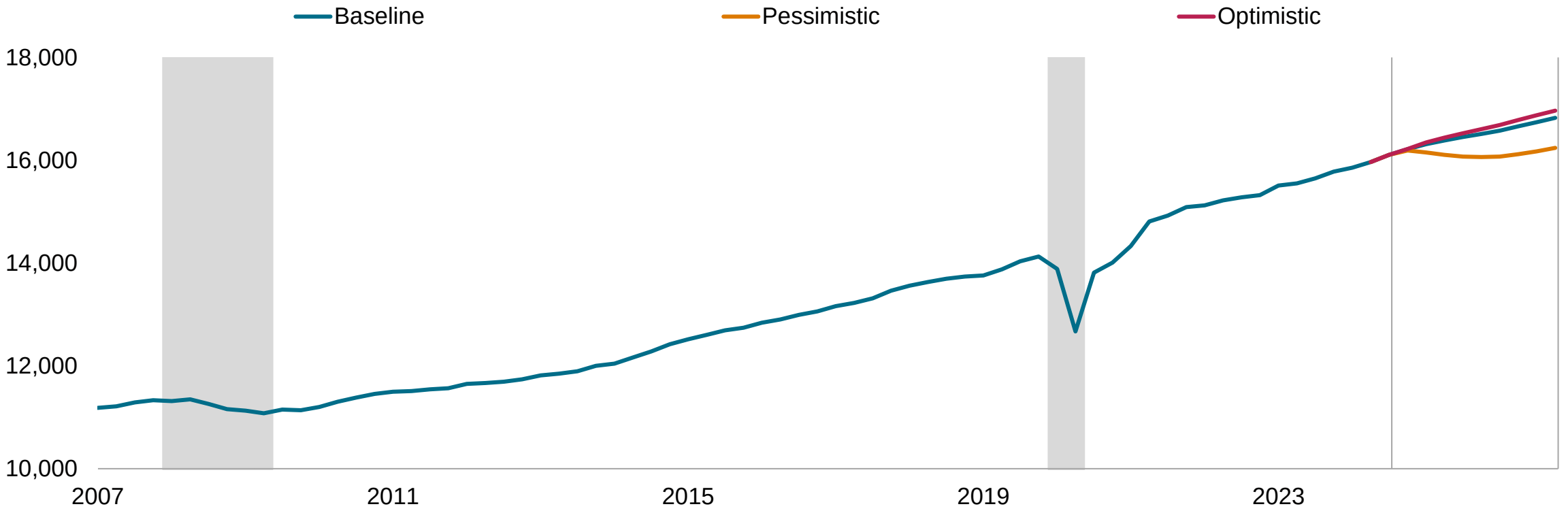
Data compiled Dec. 20, 2024.

Sources: Bureau of Economic Analysis, S&P Global Market Intelligence.

Real consumer spending in alternative scenarios

Real consumer spending

Billions of chained 2017 dollars



Data compiled Dec. 20, 2024.

Sources: Bureau of Economic Analysis, S&P Global Market Intelligence.

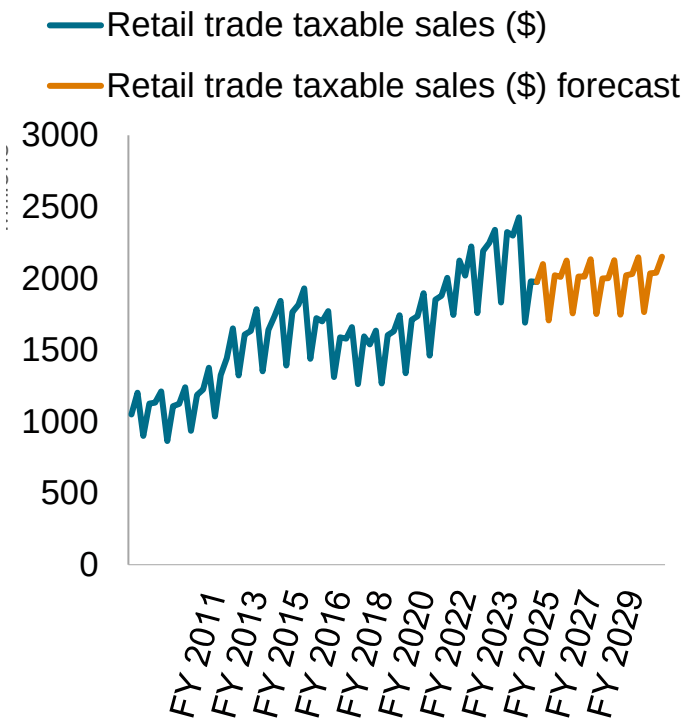
S&P Global
Market Intelligence

Appendix: revenue graphs and methodology

Taxable sales by sector

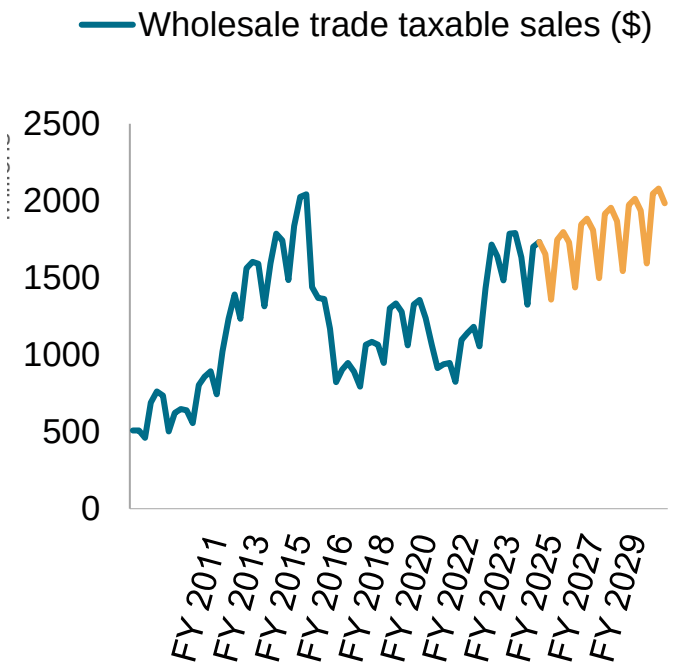
- There are fifteen taxable sales sectors that are modeled. The five largest sectors are retail trade, wholesale trade, mining and oil, accommodation and food services, and manufacturing.

Retail trade taxable sales ($M)



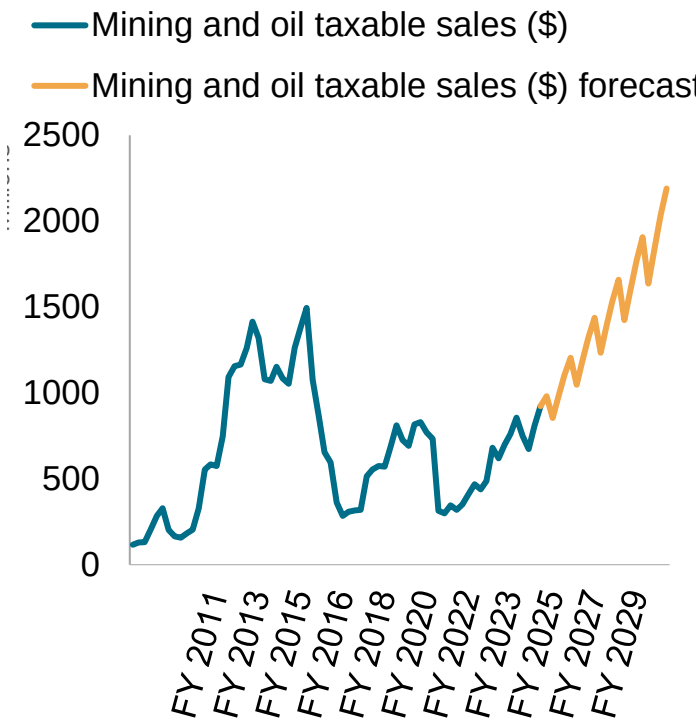
As of Jan. 2025.
Source: S&P Global

Wholesale trade taxable sales ($M)



As of Jan. 2025.
Source: S&P Global

Mining and oil taxable sales ($M)

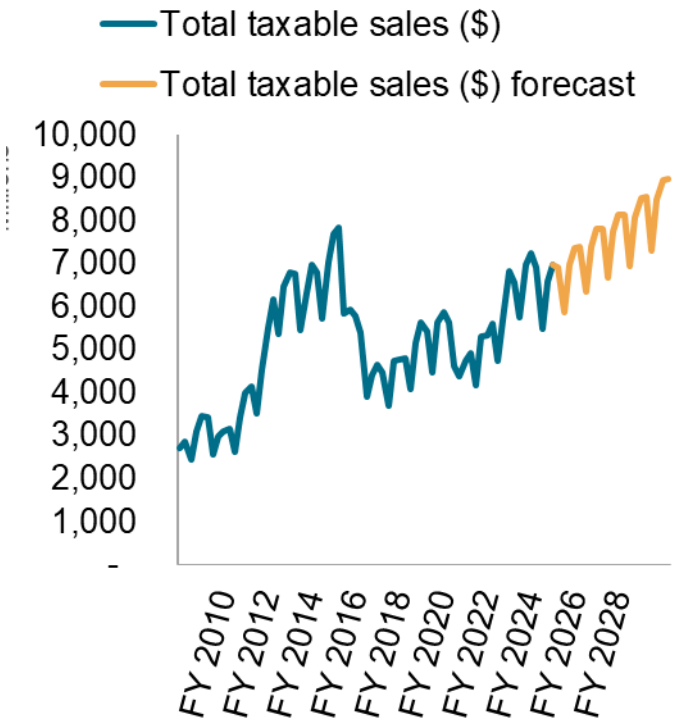


As of Jan. 2025.
Source: S&P Global

Taxable sales by sector

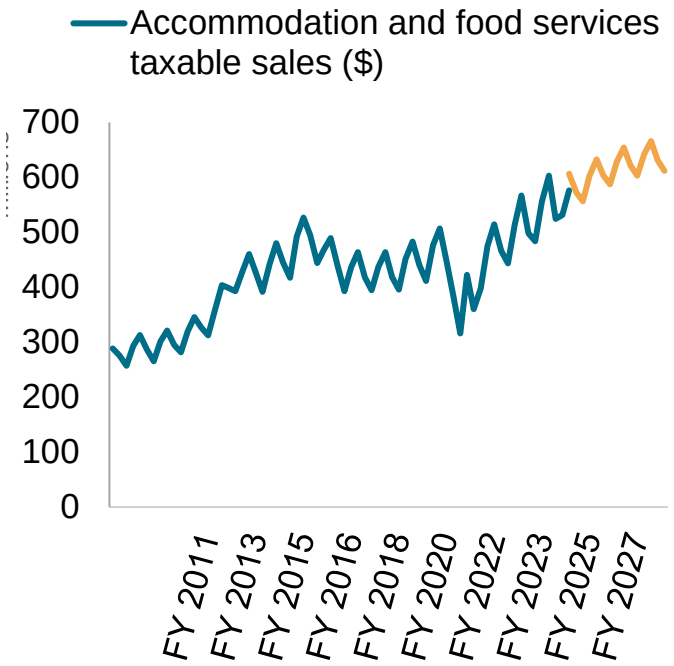
- There are fifteen taxable sales sectors that are modeled. The five largest sectors are retail trade, wholesale trade, mining and oil, accommodation and food services, and manufacturing.

Total taxable sales ($M)



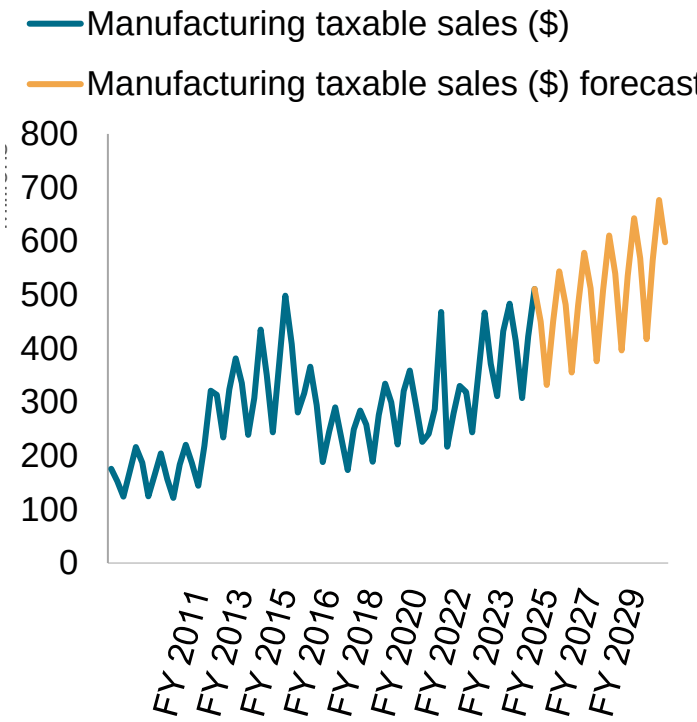
As of Jan. 2025.
Source: S&P Global

Accommodation and food taxable



As of Jan. 2025.
Source: S&P Global

Manufacturing taxable sales ($)



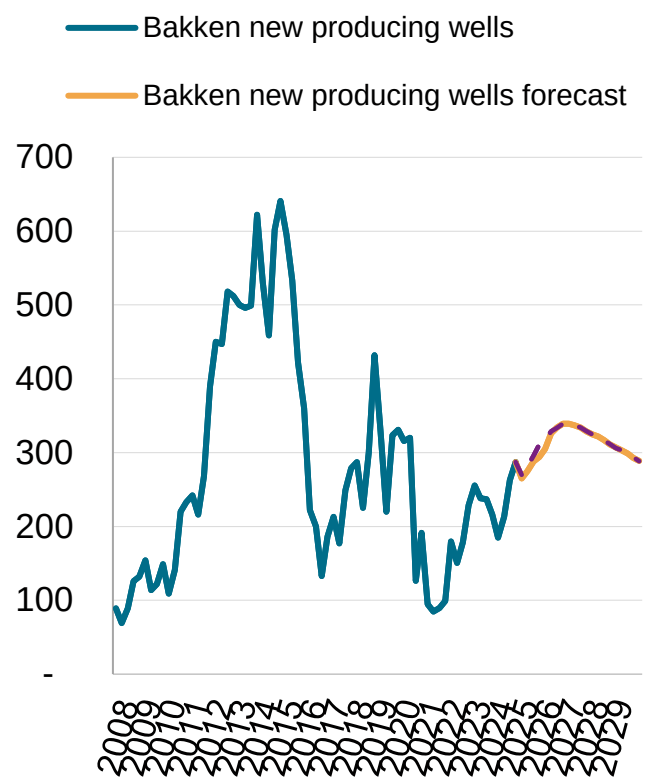
As of Jan. 2025.
Source: S&P Global

Drivers of taxable sales sectors

- The number of new producing wells in the Bakken play is the main driver in four of the five largest taxable sales sectors; these sectors are wholesale trade, mining and oil, accommodation and food services, and manufacturing
- Of the fifteen taxable sales models, nine include Bakken new producing wells as a driver.
- Sector-specific gross state product numbers for North Dakota are also used as drivers for some sector models like wholesale trade, and accommodation and food services.
- In the equation for retail trade taxable sales, inflation and population are included as drivers.

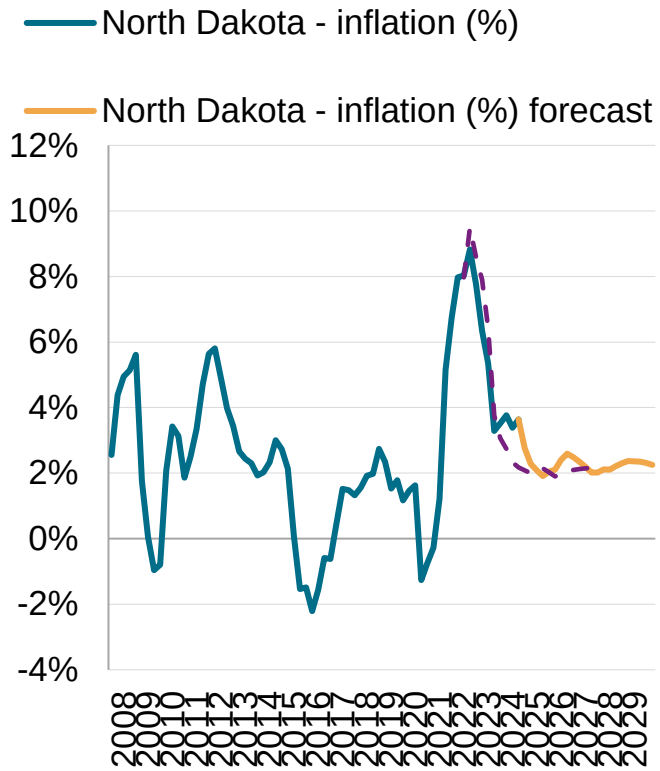
Drivers of taxable sales sectors

Bakken new producing wells



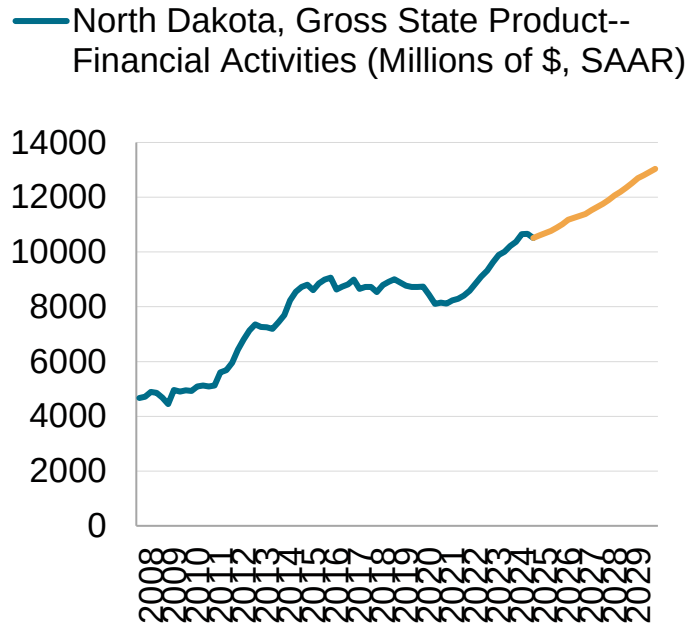
As of Jan. 2025
Source: S&P Global Market Intelligence.

North Dakota - inflation



As of Jan. 2025.
Source: S&P Global Market Intelligence.

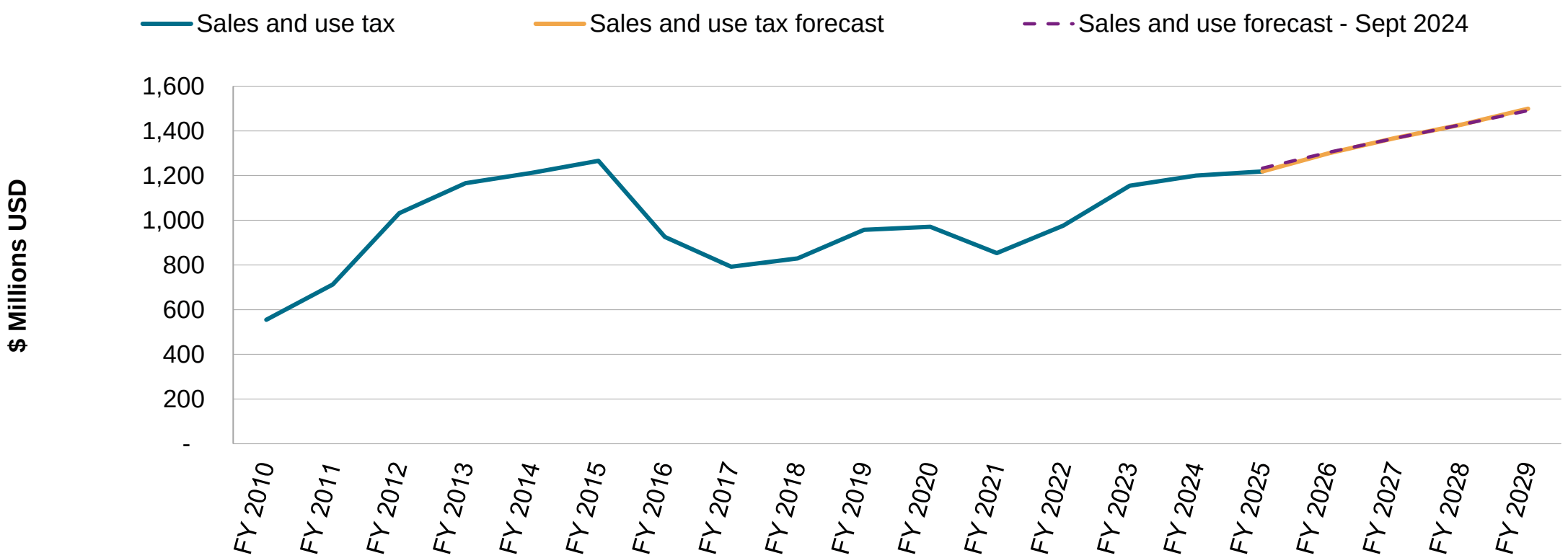
North Dakota, Gross State Product--Accommodation and Food Services (Millions of $,



As of Jan. 2025.
Source: S&P Global Market Intelligence.

Sales and use tax revenue

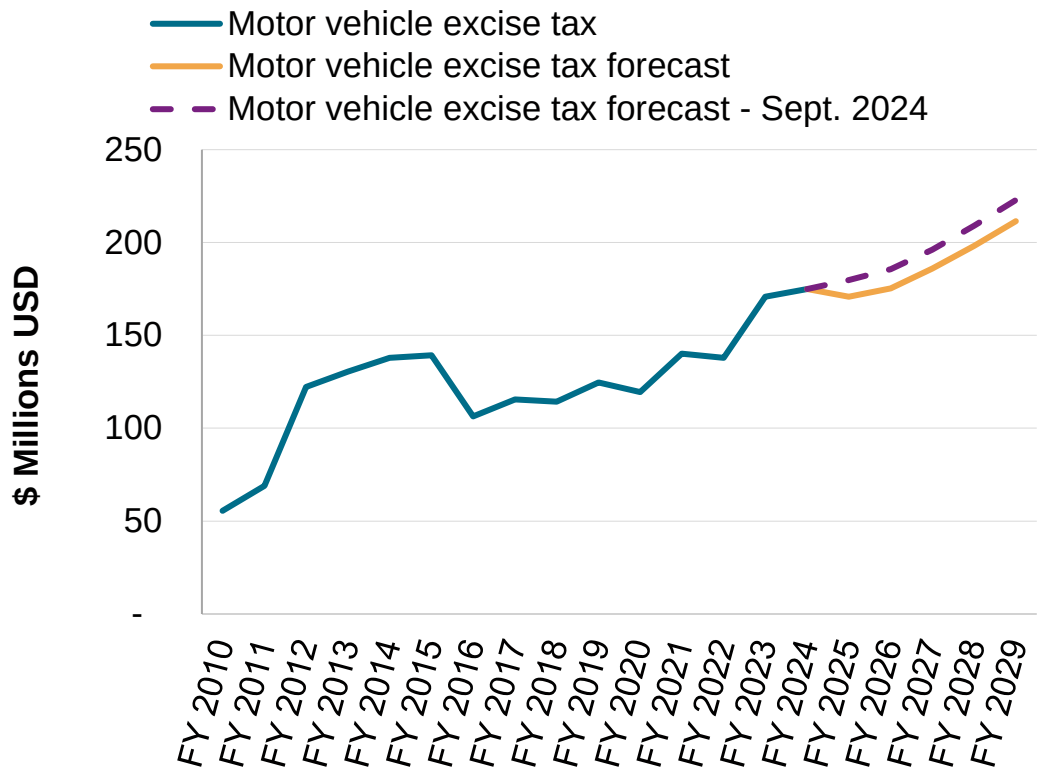
Sales and tax use forecast



As of Sep. 2024
Source: S&P Global Market Intelligence.

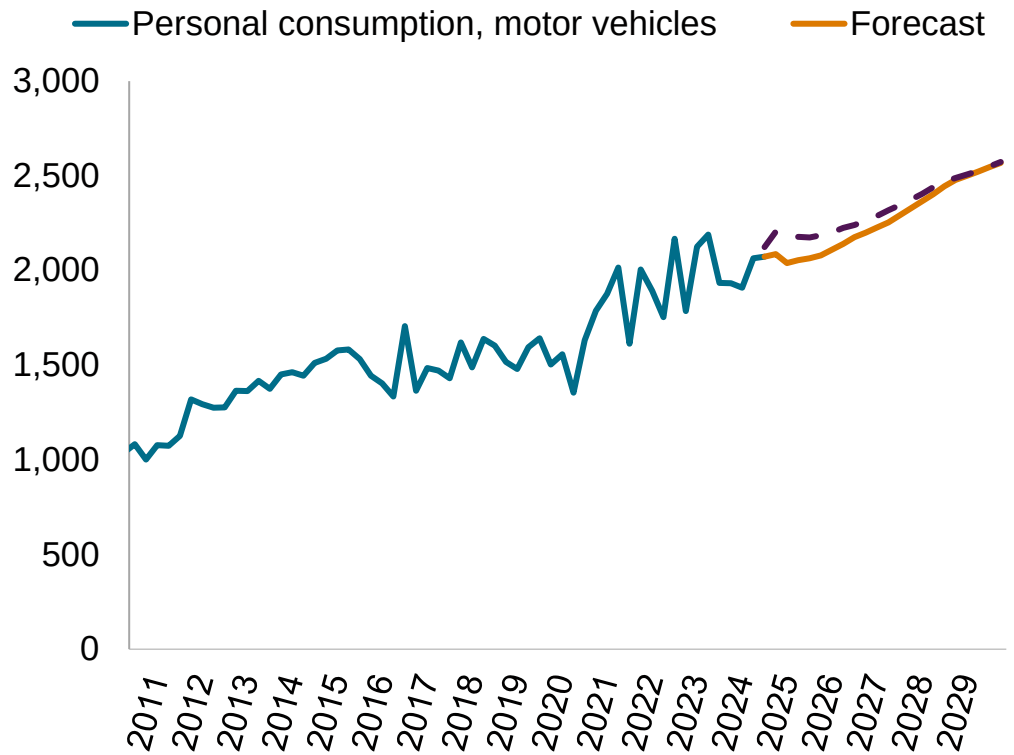
Motor Vehicle excise taxes and driver

Motor vehicle excise tax forecast



Note: Beginning in FY2024, approximately 50% of MV excise taxes were redirected from the general fund
Source: S&P Global Market Intelligence.

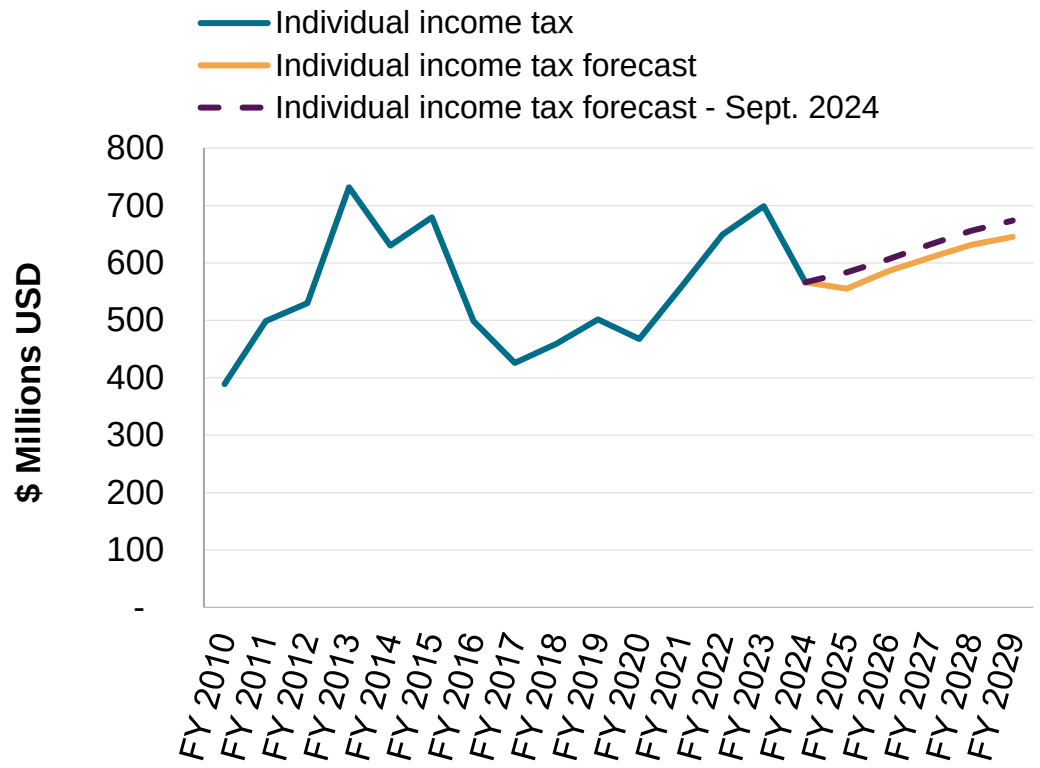
Personal consumption, motor vehicles



As of Jan. 2025.
Source: S&P Global

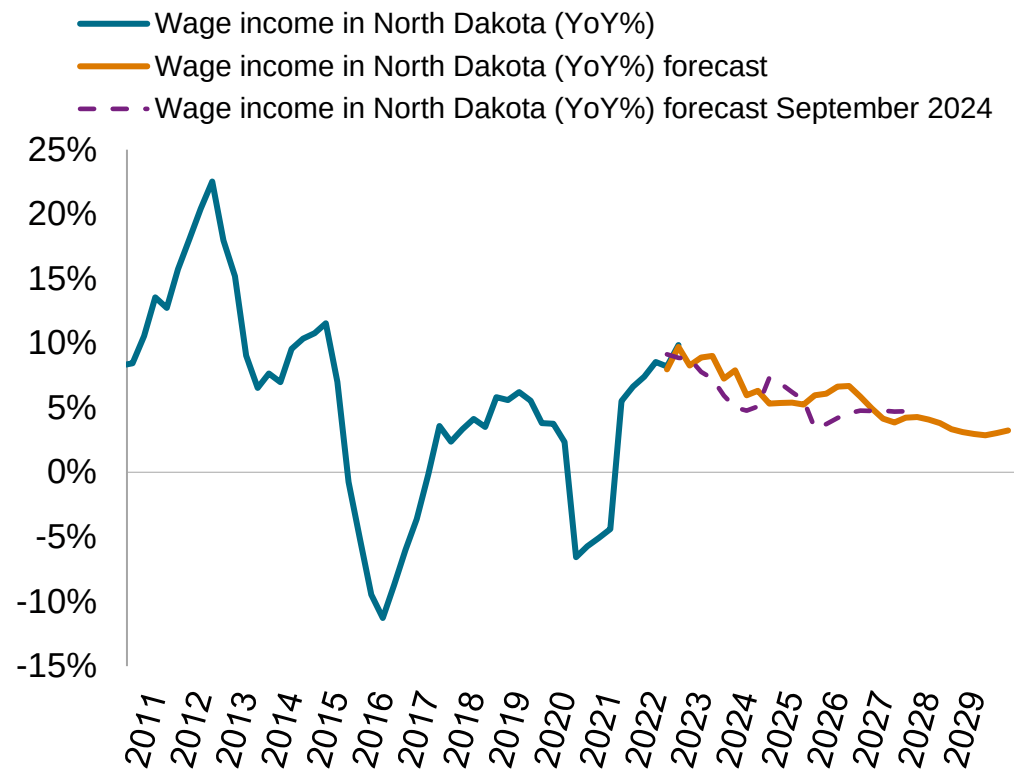
Individual Income taxes and drivers

Individual income tax forecast



As of Dec 2024
Source: S&P Global Market Intelligence.

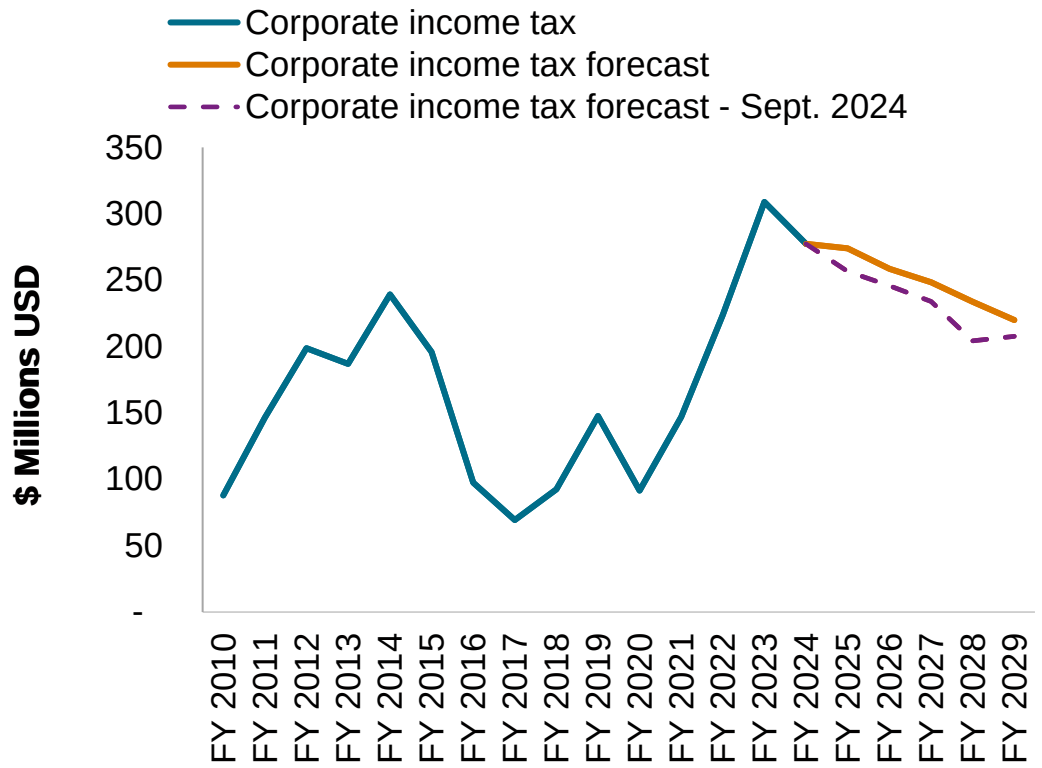
Wage income in North Dakota (YoY growth)



As of Dec. 2024.
Source: S&P Global

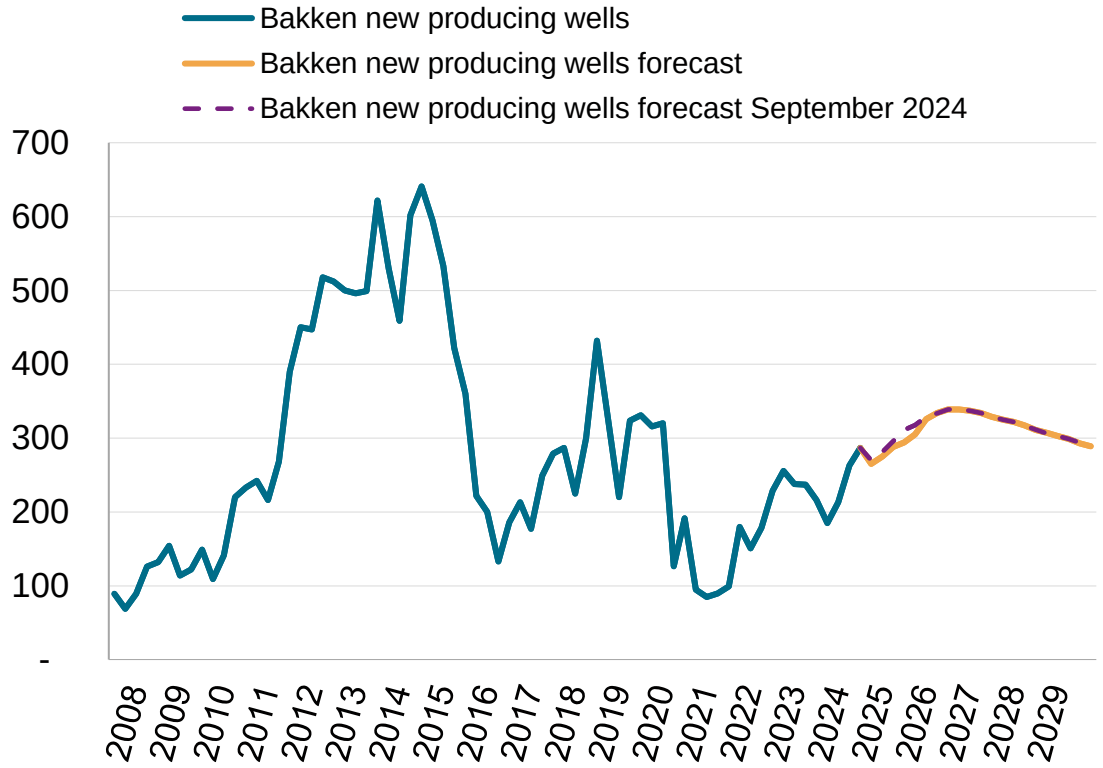
Corporate income tax revenue

Net Corporate Income Tax forecast



As of Jan 2025
Source: S&P Global Market Intelligence.

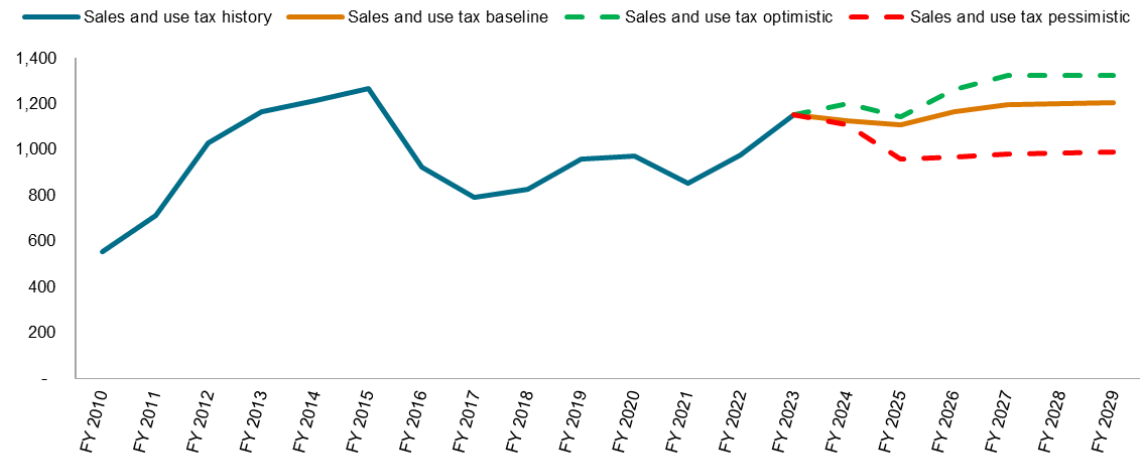
Bakken new producing wells



As of Jan. 2025
Source: S&P Global Market Intelligence.

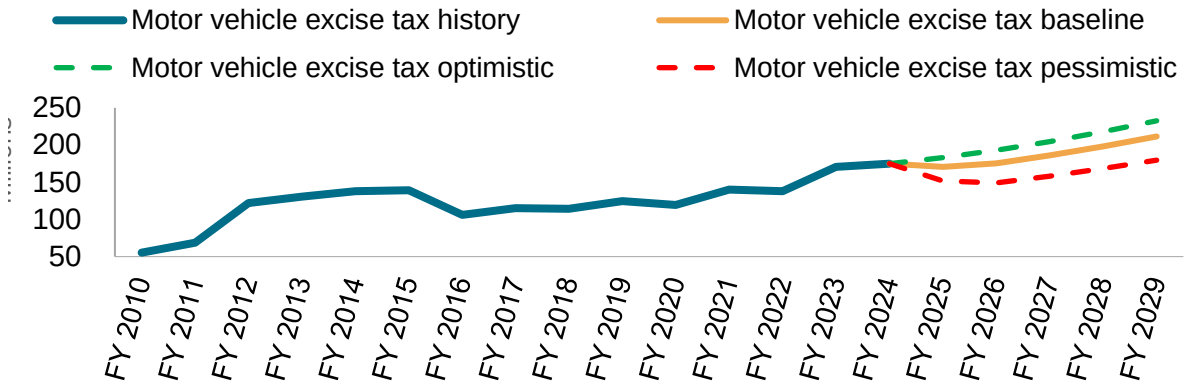
Optimistic and pessimistic scenarios

Sales and use tax forecast scenarios, $ millions



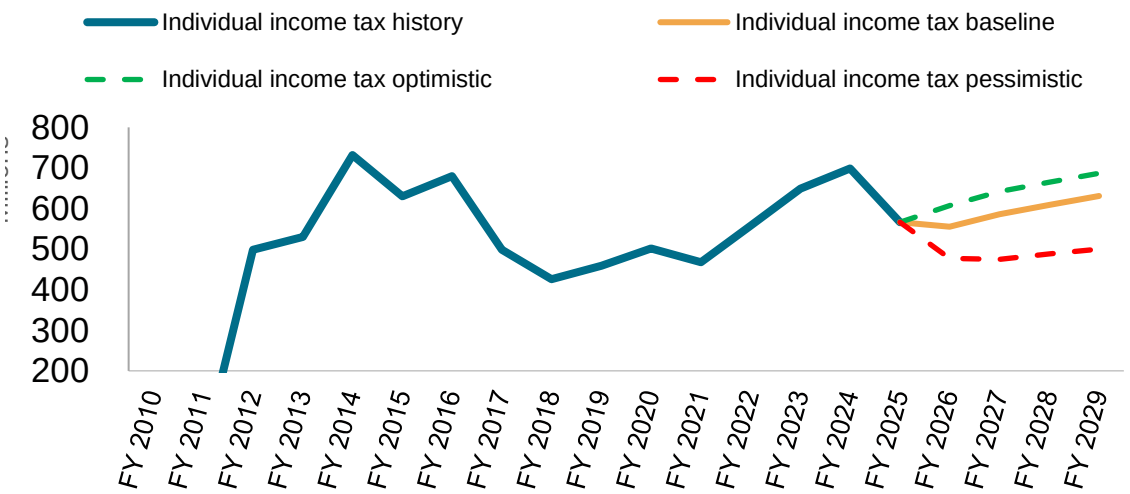
Source: S&P Global

Motor vehicle excise tax forecast scenarios, $ millions



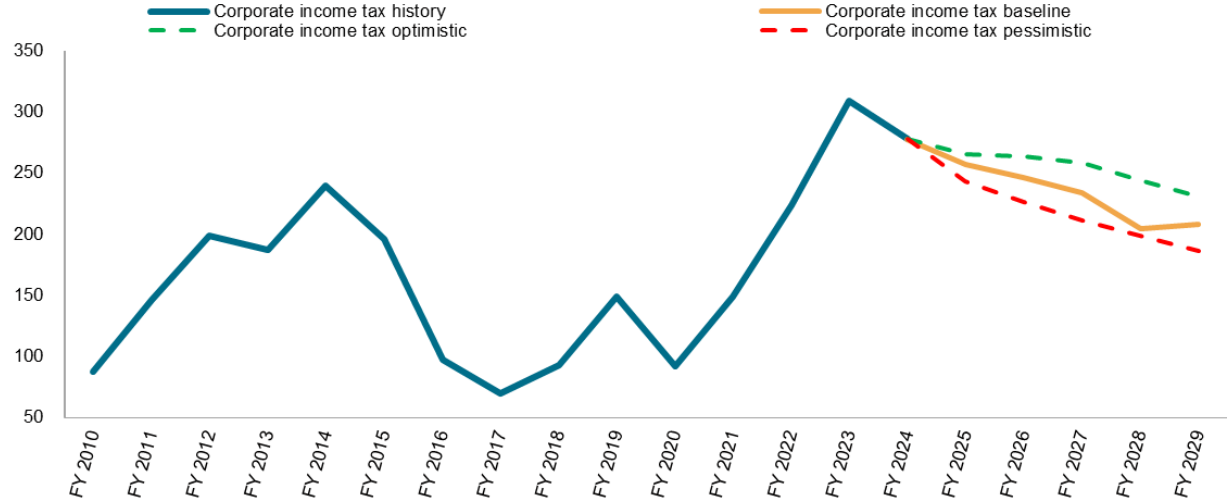
Source: S&P Global

Individual income tax forecast scenarios, $ millions



Source: S&P Global

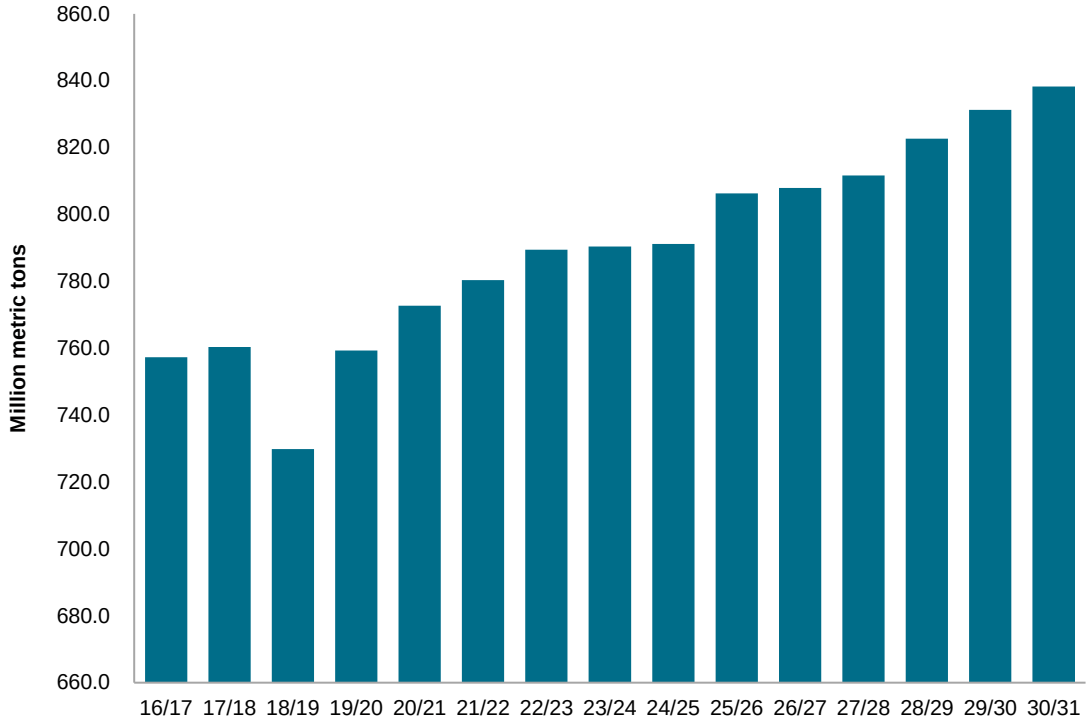
Corporate income tax forecast scenarios, $ millions



Source: S&P Global

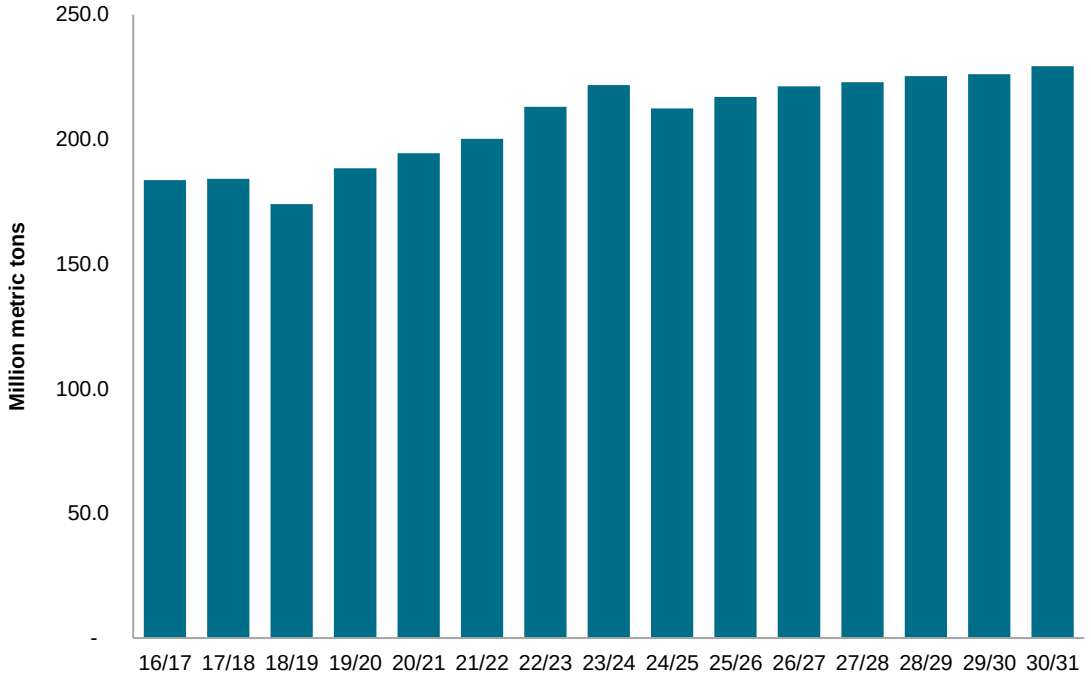
While global wheat production will grow steadily through 2030, global wheat imports are projected to grow at a much slower pace

Global wheat production



Source: S&P Global Commodity Insights.

Global wheat imports

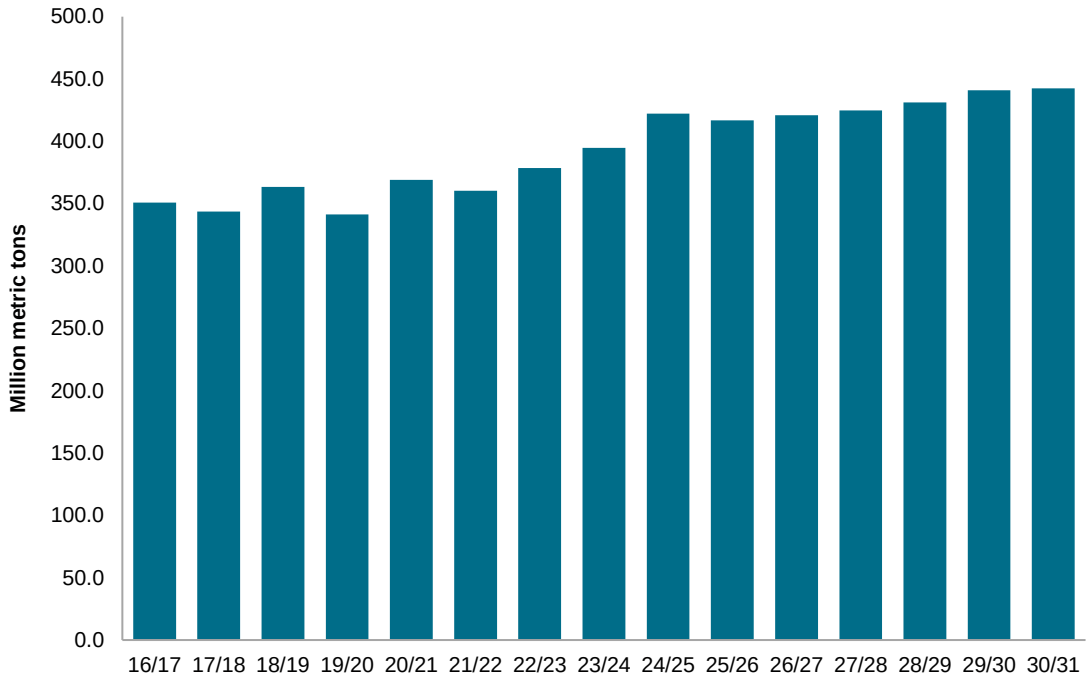


Source: S&P Global Commodity Insights.

- Global wheat production remained steady in 2024/25, only increasing 0.8 MMT to a total of 791.2 MMT. While Canada, the US, and Argentina experienced strong harvests, this was offset by poor yields in Russia. Global supplies of wheat is expected to grow by 47.1 MMT by 2030/31 to a total of 838.3 MMT with the main increases originating from the EU and Ukraine.
- Global wheat imports declined by 9.6 MMT for a total of 212.4 MMT with the decline being driven by lower imports from China, Turkey, and Indonesia. While global imports are expected to increase to 229.3 MMT by 2030/31, it will be 2027/28 before global wheat imports surpass levels experienced in 2023/24.

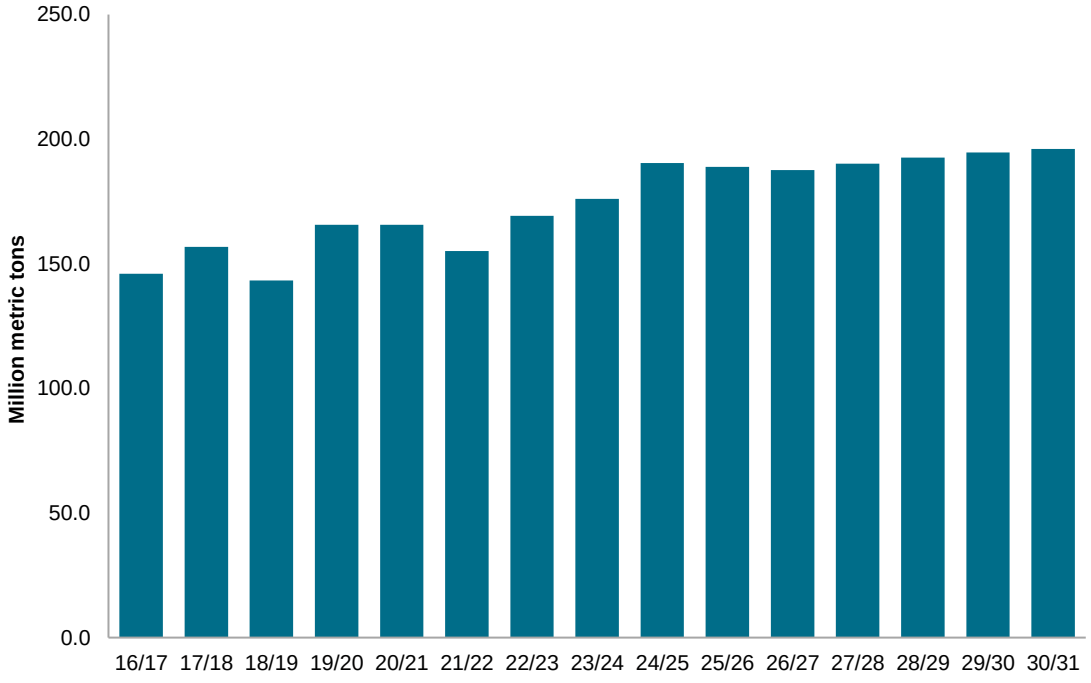
Global soybean production and imports are expected to steadily grow through the forecasted period

Global soybean production



Source: S&P Global Commodity Insights.

Global soybean imports



Source: S&P Global Commodity Insights.

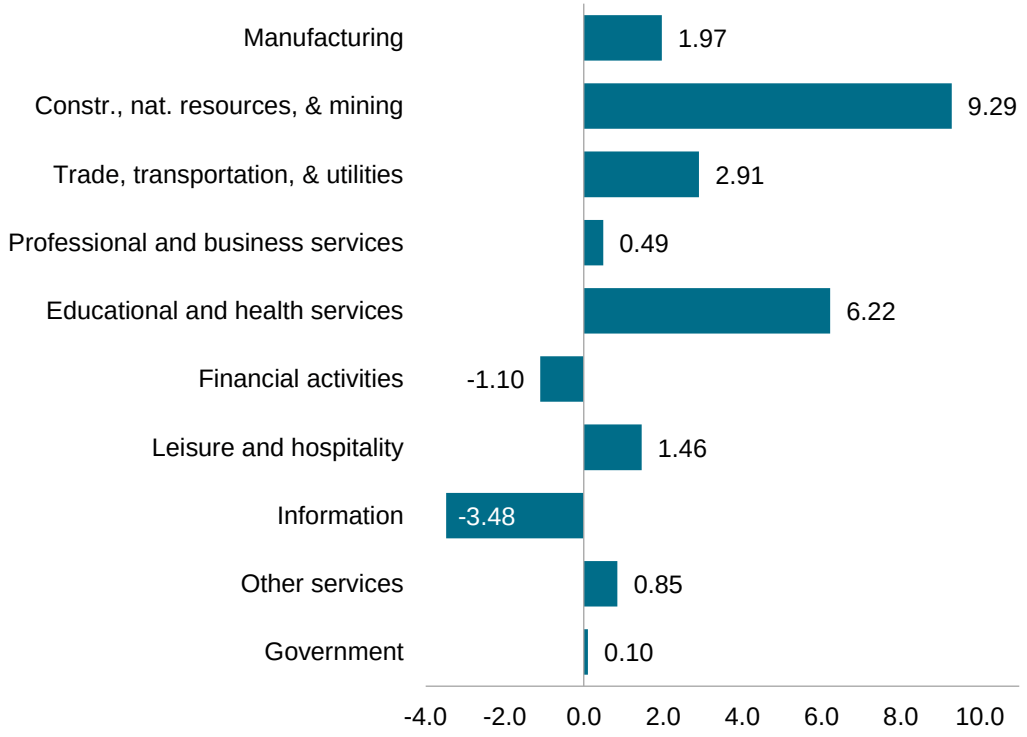
- Global soybean production product increased to 422.2 MMT in 2024/25, a 27.5 MMT increase from 2023/24. This increase in global production is being driven by increased supplies from Brazil, the US, and Argentina. Sustained acreage growth in LATAM, driven by Brazil, and increasing global yields will result in a forecasted global soybean harvest of 442.5 MMT in 2030/31.
- World soybean imports increased by 14.5 MMT in 2024/25 for a total of 190.4 MMT with the increases being concentrated in Europe, Eurasia, and Asia, although Chinese imports decreased. Imports are projects to remain relatively steady and grow slowly through to decade to a total of 196 MMT by 2030/2031.

West North Central: Low population growth weakens outlook for service sectors and personal income

Key performance indicators, 2023–25 (average annual % change)

Data compiled December 2024.
Source: S&P Global Market Intelligence.

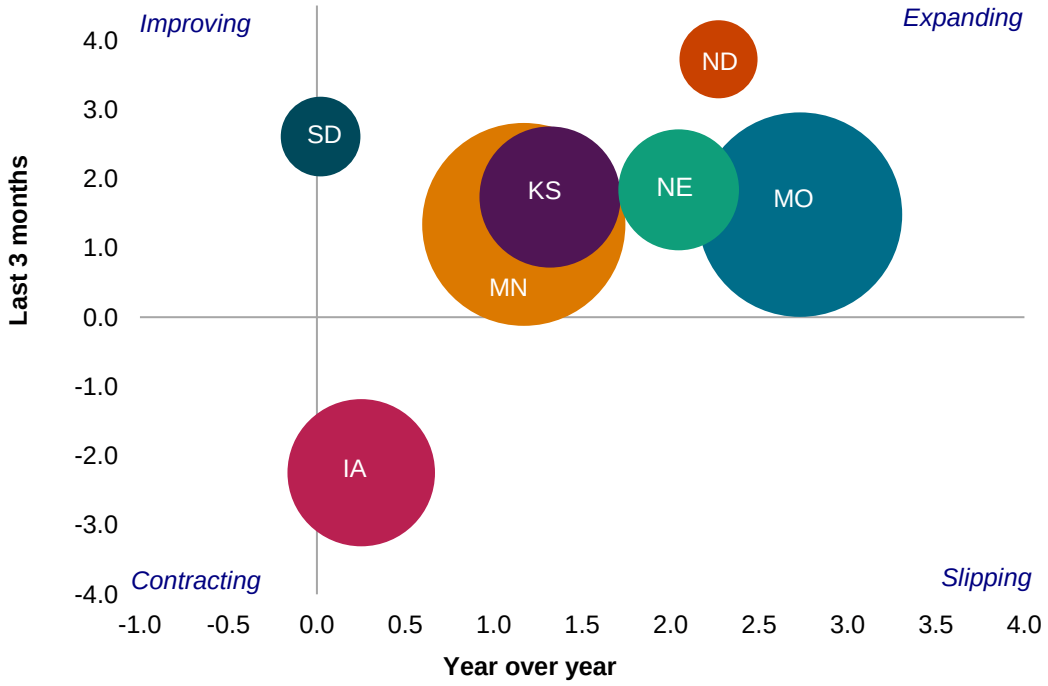
Change in employment, November 2024 vs February 2020, West North Central (% change)



Data compiled December 2024.
Source: Bureau of Labor Statistics.

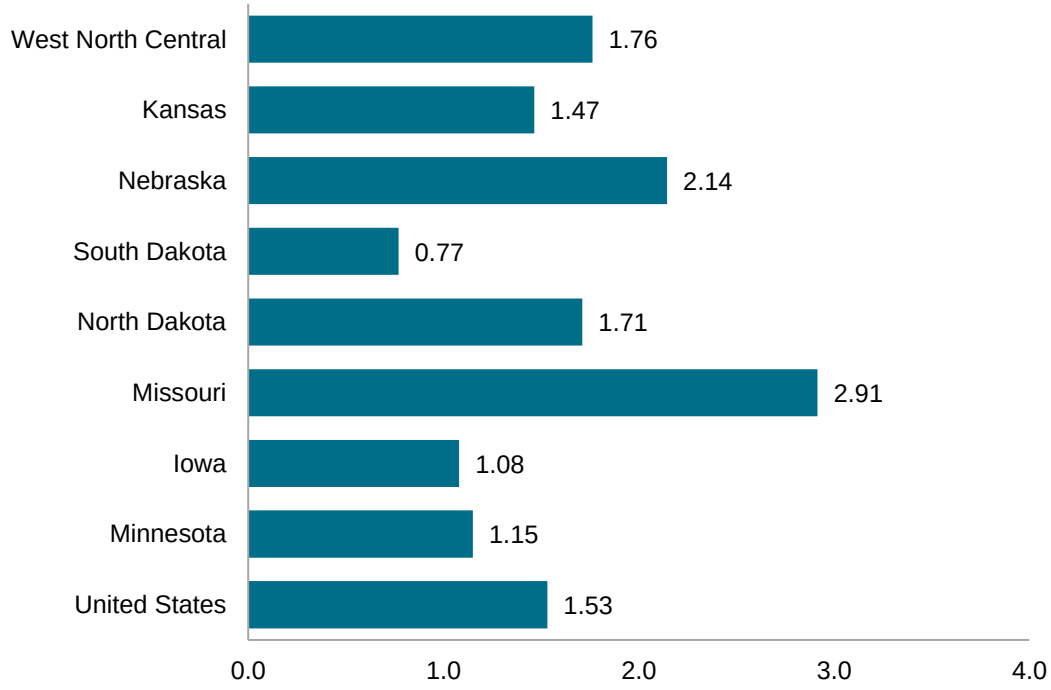
West North Central: Region continues expansion except for Iowa, which is on the verge of contracting

Employment momentum in November 2024, West North Central (% change, annual rate)



Data compiled December 2024.
Size of each data point represents state employment level for the most recent month.
Sources: Bureau of Labor Statistics; S&P Global Market Intelligence.

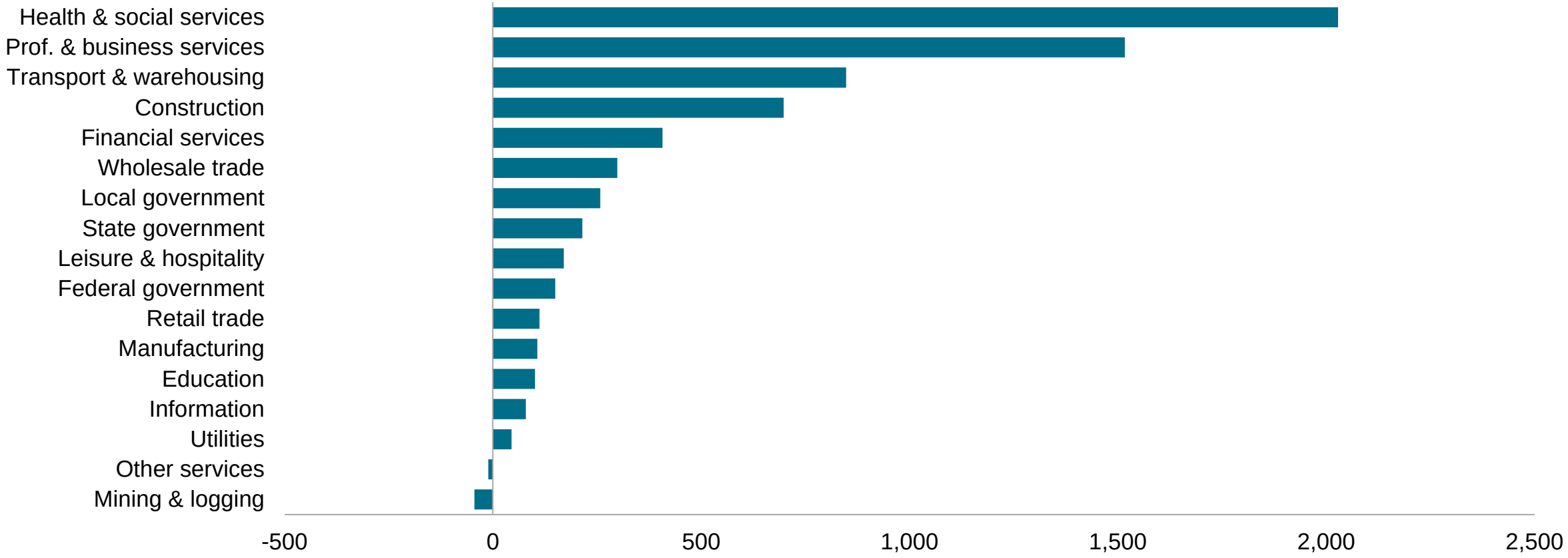
Employment growth in the third quarter of 2024, West North Central (% change vs. year earlier)



Data compiled December 2024.
Sources: Bureau of Labor Statistics; S&P Global Market Intelligence.

Most employment categories are now above their pre-pandemic peak

Payroll employment compared to the pre-pandemic peak, thousands, (November 2024)



Data compiled Dec. 20, 2024.

Source: Bureau of Labor Statistics.

S&P Global

January 14, 2025

Economic Forecasting and Industry Report

The State of North Dakota

Table of Contents

I. Project Overview

North Dakota Legislative Assembly goals:

- The North Dakota Legislative Assembly sought the support of a professional services firm with the capabilities to support the state's revenue estimating and economic forecasting efforts.
- The Legislative Assembly required that a consultant either have or develop the economic modeling framework that can address how the economy impacts its revenue streams.
- The end-product required of the Legislative Assembly's consultant will be used for updating the 2023-25 biennium revenue forecast and developing the 2025-27 biennium revenue forecast.
- The information must be provided in context of both short- and long-term economic behavior with forecast expectations of the national economy as well as detailed economic forecasts specific to North Dakota's economy.
- All forecasted values will be provided in terms of a baseline, optimistic, and pessimistic scenarios with probability assignments to each outcome. And finally, in addition to their quantitative requests, the North Dakota Legislative Assembly requires the qualitative assessment of both national and local economic conditions and demographic trends that are driving these projections.

About S&P Global:

- On February 28, 2022, S&P Global and IHS Markit completed their merger, creating a leading information services provider with a unique portfolio of highly complementary assets.
- S&P Global offers an enhanced value proposition for our global customer base across data & analytics, ratings, benchmarks, indices, commodities & energy, transportation, and engineering. These products allow us to better serve our customers with a broader and deeper portfolio of unique solutions and increased scale.
- By providing in-depth analysis and forecasts down to the local level, S&P Global's team of over 300 economists and analysts serve as valuable extensions to our client organizations' staff and provide the data and analysis they need to make high impact business and policy decisions.
- As much as possible, S&P Global has utilized our existing US Macroeconomic and Regional modeling infrastructure to meet the Legislative Management's economic forecasting requirements. This allowed S&P Global to immediately begin the more detailed work on behalf of the State tax revenue models and minimized the development cost associated with building new models.

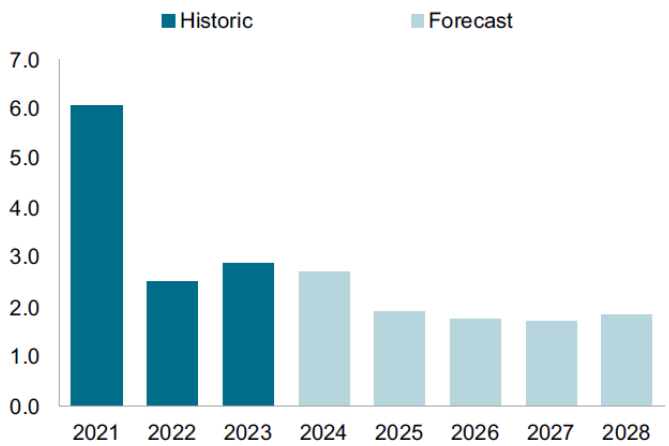
II. Major Economic and Demographic Drivers

US Macroeconomy

Somewhat stronger growth, lower peak unemployment rate

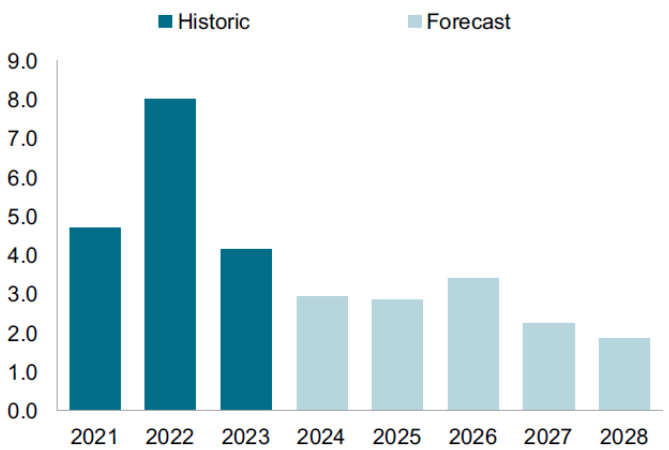
- We look for 2.7% GDP – growth this year, followed by 1.9% growth in 2025 and 1.8% growth in 2026. The latter two figures are 0.1 and 0.3 percentage point below last month's forecast, respectively.
- The markdown to growth reflects the net effect of new developments, including our initial take on policies likely to be implemented by the incoming Trump administration and Republican-controlled Congress: personal and corporate tax cuts, tariffs, a crackdown on undocumented immigration and deportations.
- Fallout from tariffs is expected to prove damaging to US economic activity. This forecast assumes the implementation of a 10% universal tariff and a 30% tariff on imports from mainland China. This gives rise to a period of elevated inflation, to which the Federal Reserve is forecast to respond by pausing its easing cycle in mid-2025. This, in turn, gives rise to tighter financial conditions than in our November baseline, which will weaken aggregate demand. Furthermore, we expect foreign countries to respond with retaliatory tariffs on US exports.
- Deportations combined with a sharply reduced inflow of immigrants will reduce US aggregate supply and aggregate demand. This forecast assumes net international migration will be reduced, relative to Census projections, by about 500,000 per year during the four years of the Trump presidency.
- This will create labor shortages and increased wage pressure in some industries, reinforcing inflation resulting from tariffs. A reduced immigrant population, moreover, will immediately reduce consumption demand and eventually reduce housing demand and construction.

Real GDP (% change, year on year)



Data compiled Dec. 17, 2024.
Source: S&P Global Market Intelligence.

Consumer price inflation (% change, year on year)



Data compiled Dec. 17, 2024.
Source: S&P Global Market Intelligence.

The outlook for inflation remains moderate.
Its future course will be determined by policies implemented by the Federal Reserve. S&P Global Market Intelligence analysts assumed that the Fed will try to contain inflation over the forecast period. The Consumer Price Index (CPI) is expected to average 2.5% annual increases in 2022–52, up from 2.4% in 1991–2021. The broader-based GDP deflator will rise 2.4% per year.

Underpinnings of slowdown, and risks

On a fourth-quarter over fourth-quarter basis, GDP growth slows in our forecast from 3.2% in 2023 to 2.4% in 2024 and further to 1.7% in 2025. The factors we have long projected would underpin this slowdown remain in place: restrictive monetary policy, ceased tailwinds that boosted growth through 2023, a strong US dollar, and conditions which portend weakening equity values. The growth that we estimate for 2024 and that we forecast for 2025 and 2026 is below potential GDP growth, supporting our expectation that the unemployment rate will continue to drift higher. Risks to the outlook remain in the policy space, as it is unclear exactly how far the Trump administration will go with tariffs and whether (and the extent to which) the Federal Reserve will respond to the inflation caused by tariffs. In this forecast, we continue to assume a 10% universal tariff with a 30% tariff imposed on imports from China. We also continue to assume that the Federal Reserve pauses its easing cycle beginning in mid-2025 for roughly one year.

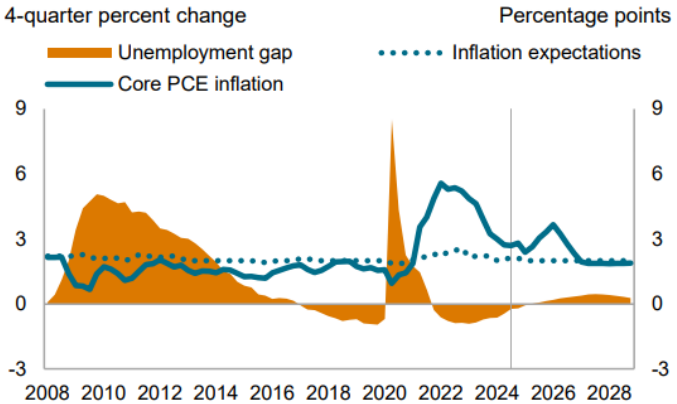
2025 coming into (market) view

The most important update to the near-term outlook over the last two months has been the incorporation into our forecast of the policies that the Trump administration and Republican-controlled Congress are likely to put in place. In short, those policies include tax cuts, tariffs, and deportations. We have made the case that, in 2025, these policies will give rise to higher inflation, a slower pace of monetary policy easing, higher interest rates, a stronger dollar, and tighter financial conditions generally. Similar sentiment was reflected in the Summary of Economic Projections that accompanied the December 18 meeting of the Federal Open Market Committee, in which 2025 projections for inflation and the federal funds rate were revised materially higher. Fed Chair Powell indicated that, indeed, some Fed officials had incorporated preliminary estimates of the economic effects of some potential policy changes from the incoming administration into their forecasts. Financial market indicators are comporting with our view as well. At the time of this writing, futures markets were pricing in a 78% probability no more than 50 basis points of Federal Reserve rate cuts by the December 2025 meeting, up from a 57% probability one month ago. Over the last month, moreover, term Treasury yields as well as private borrowing costs have risen.

State & local fiscal policy

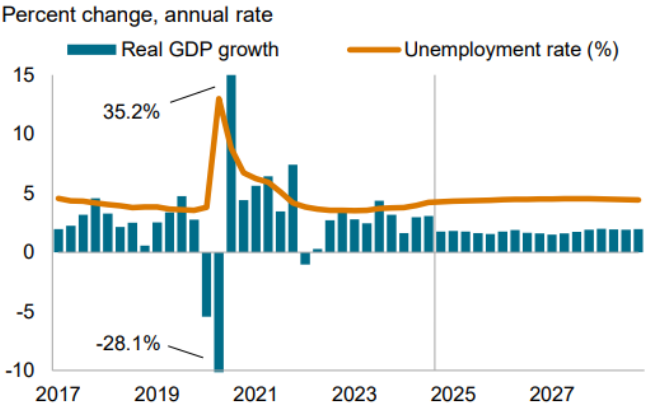
After enjoying surpluses in 2021 and 2022 that were supported by COVID relief measures, state and local budgets have returned to deficit. However, unspent pandemic-era funds as well as monies authorized under the Infrastructure Investment & Jobs Act (IIJA) mitigate pressures to reduce state and local spending. IIJA spending is reflected in state and local gross investment. The pandemic-era policy of continuous enrollment in Medicaid expired April 2023, and states are assumed to trim Medicaid rolls from 2025 through 2027.

Core PCE inflation firms due to tariffs through 2026



As of Dec. 31, 2024.
Sources: S&P Global Market Intelligence; Philly Fed; BEA; BLS.

Growth to slow over 2025–2027



As of Dec. 31, 2024.
Sources: S&P Global Market Intelligence; BEA; BLS.

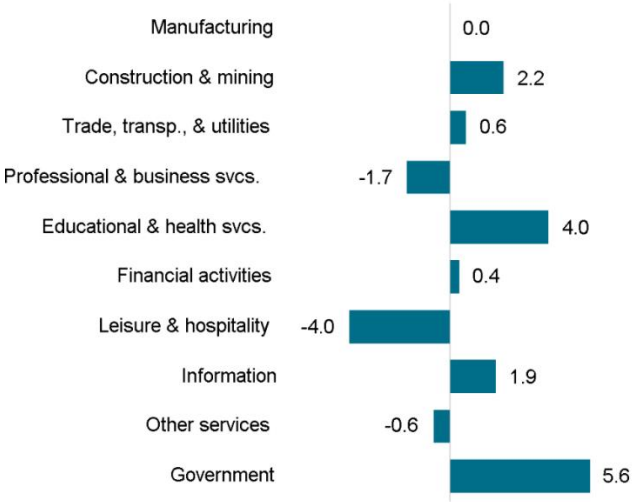
North Dakota Economy

Economic fallout from the early 2020 oil correction lingers

Employment in North Dakota advanced by a robust 2.3% year over year during November 2024, well above the US average (1.4%). The education/health and government sectors were the dominant job creators in November, accounting for 80% of the overall job gains and more than offsetting declines in information, business services and leisure/hospitality. The unemployment rate remains among the lowest in the nation at just 2.4% in November, but it has been inching up over the latter half of 2024.

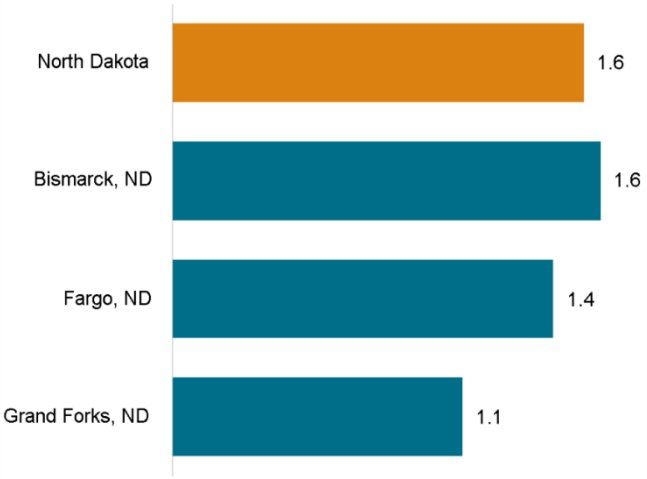
The US oil mining sector is in much better shape following the sharp COVID-19 pandemic correction. US field production surpassed pre-pandemic levels in 2023 and has since climbed higher. However, the recovery has been uneven across states. North Dakota field production of crude oil grew strongly over 2023 but has mostly been moving sideways over 2024. In fact, November 2024 production (35,988 barrels) remained well below the November 2019 level (46,421 barrels) according to the US Energy Information Association. This sluggish recovery in the Bakken Formation, a key driver of the state's economy, contrasts with the robust growth seen in the Permian Basin, particularly in Texas and New Mexico, which have attracted a significant share of post-pandemic investment.

Employment growth by sector, October 2024



Data compiled November 2024.
Source: S&P Global Market Intelligence.

Employment growth by MSA, October 2024



Data compiled November 2024.
MSA = metropolitan statistical area.
Source: S&P Global Market Intelligence.

Issues to watch

- North Dakota is positioning itself to get a piece of the emerging hydrogen power economy as the US transitions to low-carbon energy sources. North Dakota is part of the Heartland Hydrogen Hub with Minnesota, Montana and Wisconsin. The US Department of Energy selected the hub to be awarded close to $1 billion in its efforts to advance low-carbon hydrogen production. North Dakota is also home to the National Center for Hydrogen Technology (NCHT) in Grand Forks. The NCHT was established by the Energy & Environmental Research Center at the University of North Dakota and focuses on research on a variety of hydrogen technologies as well as provides assistance to businesses developing hydrogen applications. Hydrogen would serve as a means to diversify its energy industry away from oil and natural gas and attract high-paying jobs to the state.
- The state of the US oil industry will be a prominent force behind the performance of North Dakota's economy over the next several years. Just when the oil industry started to see sustained growth following the 2015–16 correction, the pandemic threw oil markets into a tailspin. The impact was sudden, with North Dakota rig counts plunging to nine to 11 rigs over the latter part of 2020. This is half the amount as the worst week during the 2015–16 correction. Fortunately, rig counts trended higher over 2021–23, peaking at 41 early last year. Rigs have stabilized in the low

  30s so far in 2024.

Near-term developments

Employment growth in North Dakota will decelerate over 2025, weighed down by a maturing business cycle and further easing in oil prices. All told, job growth in North Dakota will register gains of 1.2% in 2025 (down from 1.5% in 2024). The

education/health and government sectors will be the top job creators, but weakness in the trade/transportation and mining sectors will constrain overall growth.

North Dakota outlook over the next four quarters

	Baseline scenario (55% probability)			Pessimistic (25% probability)			Optimistic (20% probability)		
	Level	Percent	Rank	Level	Percent	Rank	Level	Percent	Rank
Year-over-year change (Q4 2025)									
Employment	+1,809	+0.4	27	-467	-0.1	1	+1,911	+0.4	33
Personal income (mil.$)	+4,037	+6.9	1	+3,732	+6.4	1	+4,367	+7.4	1
Real gross state product (mil. 2017$)	+882	+1.4	29	+787	+1.3	2	+1,327	+2.2	31
Level (Q4 2025)									
Unemployment rate (%)	2.9		49	3.5		49	2.8		48
Housing starts	2,791		46	2,680		46	2,891		46

Data compiled December 2024.
Source: S&P Global Market Intelligence.

Employment growth in North Dakota will average 0.2% annually through 2029, a tick below the US average (0.3%). Topline gains will be hampered by job losses in manufacturing and retail trade and slow growth in many services industries. Mining employment will also contract during this period due, in part, to weakening oil prices over the near term. The education and health and government sectors will be the top job creators over the next five years.

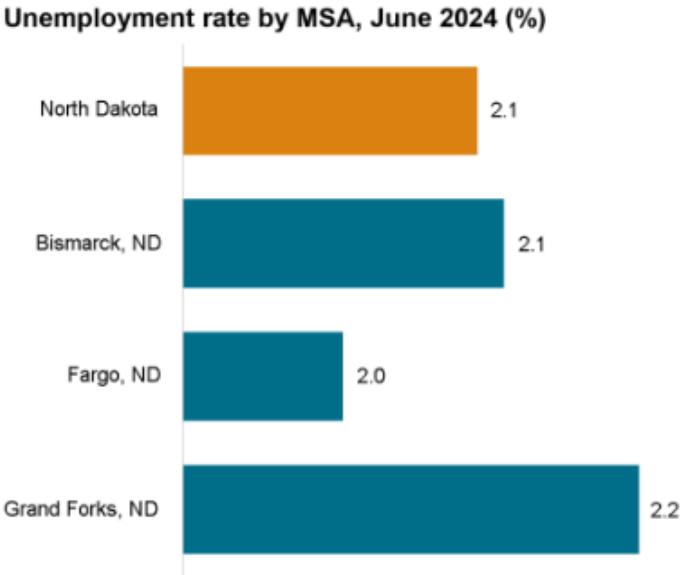
Strengths

- Despite the ups and downs, the Bakken region remains a viable play. Oil production is a key support for tax revenues and high-paying jobs.
- The eastern part of the state, especially Fargo, is the main driver of the state's knowledge economy and is helping it diversify from traditional industries such as agriculture.

Weaknesses

- Agriculture in North Dakota is susceptible to weather events such as droughts, floods, and extreme temperatures, which can significantly impact crop yields and farm incomes.
- The North Dakota economy is heavily reliant on the oil and gas industry, making it vulnerable to fluctuations in global energy prices and demand.
- The state faces challenges in attracting and retaining skilled workers, particularly in sectors including technology and healthcare.

Data compiled August 2024.
CAGR = compound annual growth rate.
Source: S&P Global Market Intelligence.



Data compiled August 2024.
MSA = metropolitan statistical area.
Source: S&P Global Market Intelligence.

Labor force and demographics

In 2023, North Dakota was the 48th-largest state by population, with 784,000 residents. That was up slightly from 779,000 in 2020. The state saw enormous growth in the decade between 2010 and 2020, when North Dakota was one of the fastest-growing states in the country thanks to the oil boom migration. Energy development has since cooled in the Bakken and population gains have fallen dramatically as a result.

North Dakota boasts a well-educated workforce: its educational system has one of the country's highest percentages (93%) of ninth graders who go on to graduate from high school; the national average is 89%. In addition, the state has a higher proportion of population possessing at least an associate degree, which stood at 45% in comparison with the national average of 44%. Still, low population density, its unfavorable climate, and lack of proximity to other major population centers limits its appeal for corporate expansion activity.

III. Special Industries

Oil

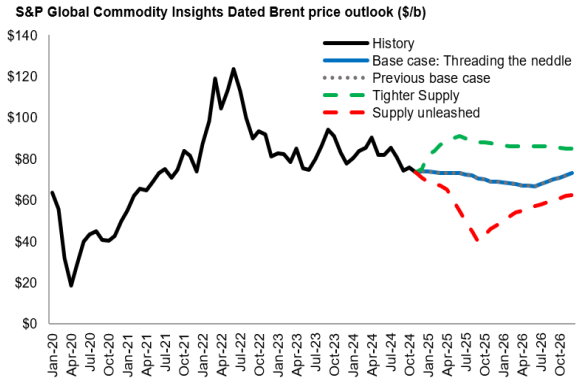
A. Global and North American Fundamentals

Global Markets:

OPEC+: The group announced on June 2, 2024, a planned increase of 2.5 million b/d in oil production, to be implemented over a 12-month period. The initial plan was to commence this increase in October 2024. However, in September 2024, oil prices plummeted to 18-month lows, with Brent crude nearing $70 per barrel. Consequently, the production increases were postponed to December 2024. As of December, production levels remained aligned with OPEC+ voluntary targets, as Iraq and Russia adjusted their outputs to stay within their quotas.

Middle East: The ongoing conflict in the Middle East persists, posing risks to oil supply if infrastructure is compromised or if exports face disruptions from further sanctions against Iran. Following the U.S. election, a potential reinstatement of maximum sanctions enforcement in Iran could further diminish its oil exports, thereby influencing global oil markets. Additionally, disruptions in the Red Sea continue, with most non-Russian crude tankers opting to bypass the area by diverting around Africa.

Russia: The conflict with Ukraine has entering its fourth year, with no short-term resolution anticipated. Russia's relations with the West are also expected to remain strained over the next three years. As tensions escalate, highlighted by Ukraine's strikes on Russia using U.S.-supplied missiles, Russia has lowered its nuclear weapon deployment threshold, which may lead to fluctuations in oil prices. Should Russia expand its territorial gains in Ukraine, further sanctions are likely to be imposed. Despite having alternative markets for its hydrocarbon exports that mitigate the impact of sanctions, Russian crude and condensate production is projected to decline from approximately 10.6 million b/d in 2024 to 7.8 million b/d by 2050.

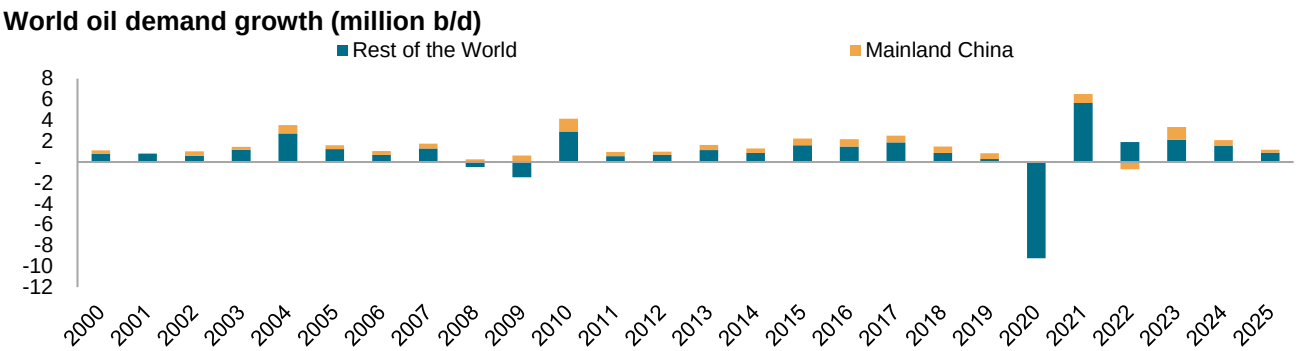


	2023	2024	2025
Historical	$82		
Market Management (Base case)		$81	$88
Falling oil supply (Tighter Supply)		$81	$72
Demand weakness (Supply unleashed)		$80	$55

Data compiled December 2024
Source: S&P Global Commodity Insights
@ 2024 S&P Global

Figure 3-1a: Low-base-high Brent oil price forecasts

China: Oil demand in China is anticipated to reach around 16 million b/d in 2024. For 2025, demand is expected to grow by 1.6%, equating to an increase of 258,000 b/d; however, this growth is less than previously forecasted due to ongoing weaknesses in the infrastructure sector, reduced profits in the chemical industry, and a shift from fossil fuel-based road transport to alternative travel modes and cleaner energy sources. Total liquid demand in China is projected to rise by 188,000 b/d in 2024 and by 293,000 b/d in 2025. Moreover, non-OPEC+ oil production is expected to increase by 1.0 million b/d in 2025, with significant growth coming from the U.S., Canada, Brazil, and Norway.



Data compiled December 2024.
Source: S&P Global Commodity Insights.
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Figure 3-1b: World oil demand growth.

Short-term oil price: The short-term price forecast is characterized by significant uncertainty, driven by several competing factors:

- The base case outlook suggests a Brent crude oil price range of $69 to $74 per barrel, assuming OPEC+ reduces its production growth target for 2025. This perspective considers that OPEC+ will increase production, but at approximately half the rate indicated in their latest announcement from June 2024.

- The low price scenario, termed "Supply Unleashed," anticipates a potential collapse in oil prices if OPEC+ adheres to its planned 2.5 million b/d production expansion, even amidst weakening oil demand. Additionally, non-OPEC+ countries, including the U.S., Canada, Brazil, and Norway, are projected to increase production by over 800,000 b/d between the end of 2024 and the first quarter of 2025.

- The high price case, referred to as "Tighter Supply," incorporates the possibility of strong demand coupled with reduced supply, which could occur if OPEC+ decides to cut production further.
- It is expected that WTI prices will be about $2 per barrel lower than Brent prices across all scenarios.
- All price forecasts consider a deceleration in global demand growth, estimated at around 1.5 million b/d for 2024 and 1.2 million b/d for 2025. Despite this weakening trend, demand growth is still anticipated to remain robust, with increases of 1.9 million b/d in the fourth quarter of 2024 and 2.1 million b/d in the first quarter of 2025.

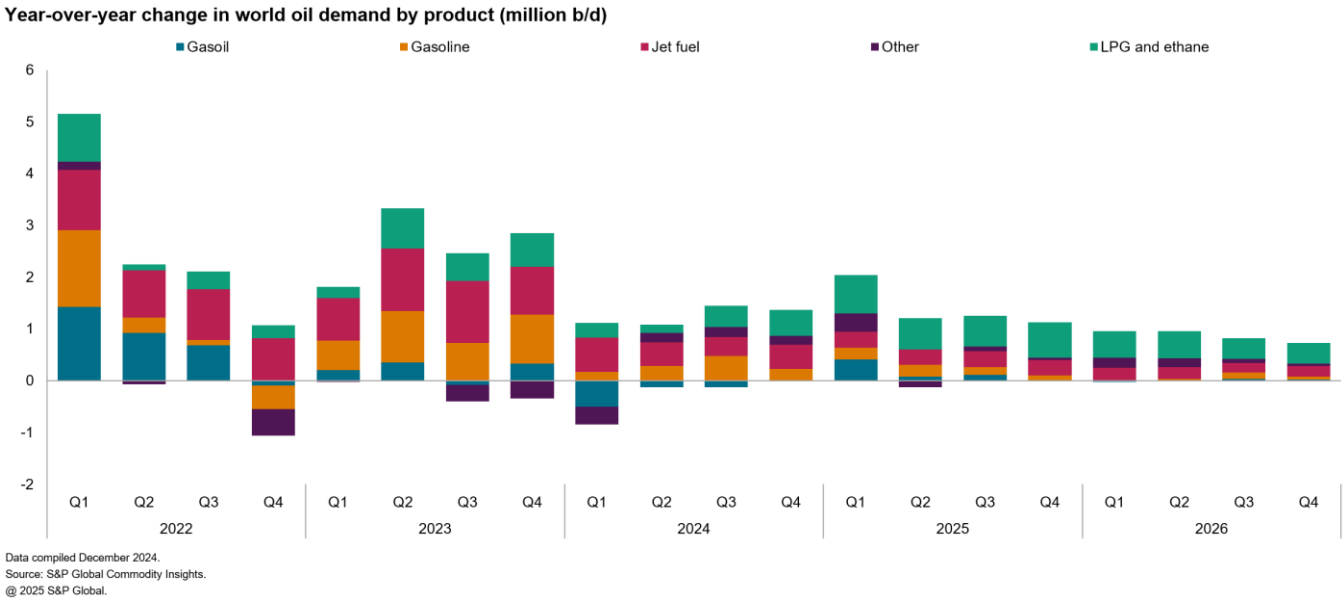


Figure 3-2: World oil demand growth by product.

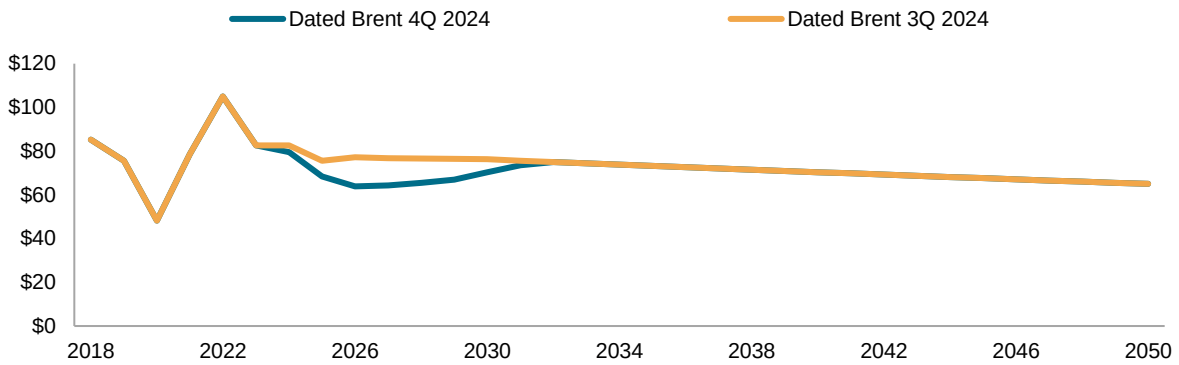
Risks associated with OPEC+ production increases remain high, particularly regarding the potential for OPEC+ to raise production in 2025, albeit at a reduced rate compared to their original plan. The average Dated Brent outlook for December through January 2025 is projected at $72 per barrel. Should OPEC+ fully implement its planned production increases, global crude oil inventories could rise rapidly, potentially driving prices down significantly, possibly into the $40 to $50 per barrel range.

Opportunities for tightening the market exist, as onshore crude inventories outside of China remain low, providing some capacity for modest production increases. Conversely, a production cut or supply contraction, especially from Iran, could tighten the market and drive oil prices back toward $90 per barrel.

Long-term oil price

- Global prices are expected to decline slowly in real terms as demand wanes due to ample supply both within and outside of OPEC+. The Brent crude price outlook has been revised downwards, with projections indicating a price of approximately $68/b in 2025 and $71.3/b in 2026, reflecting a well-supplied market and weaker-than-anticipated demand, particularly influenced by the rapid penetration of electric vehicles in China.

Brent oil price long term forecast in real terms



Data compiled December 2024.
Source: S&P Global Commodity Insigts.

Figure 3-3: Dated Brent forecast.

- Global oil demand growth is slowing after a post-pandemic surge, with a potential peak by 2030. While gasoil and diesel use in China likely peaked last year, gasoline demand is expected to peak this year, reflecting long-term declines seen in the U.S. and Europe. Demand growth is forecasted at 1 million b/d in 2024, 1.3 million b/d in 2025, and 1 million b/d in 2026, with refined products, including biofuels, growing only modestly. Emerging markets may see gains, but declining road fuel demand in major economies could offset them, driven by efficiency improvements and the transition to electric vehicles.

- Petrochemical demand and NGL supply are reducing the reliability of total liquids balances for crude price forecasts, with crude-only balances indicating a surplus in 2025 that will shrink by 2032, supporting a price recovery to $75/b by 2032. WTI prices are expected to stay below $70 until 2030, prompting U.S. producers to reduce output amid declining demand. OPEC+ has delayed its planned output increase to April 2025, interpreting this as a strategy to avoid production unless prices exceed $70/b. It is not foreseen a formal OPEC+ production increase beyond the UAE's 300,000-b/d quota, with an expected overproduction of 600,000 b/d contributing to supply growth outside of OPEC+.

- OPEC+ is facing production cuts as Russia experiences steep declines, with the outlook reduced by an average of 0.6 million b/d through 2032 to align with demand forecasts. Russian production is projected to drop from 9.1 million b/d in 2024 to 7.9 million b/d by 2032 due to limited market access and reduced investment. Meanwhile, crude oil production outside of OPEC+ is expected to grow beyond 2030, primarily driven by U.S. tight oil output, with additional growth from Canada, Guyana, Brazil, and several emerging African countries, although these developments depend on securing necessary investments.

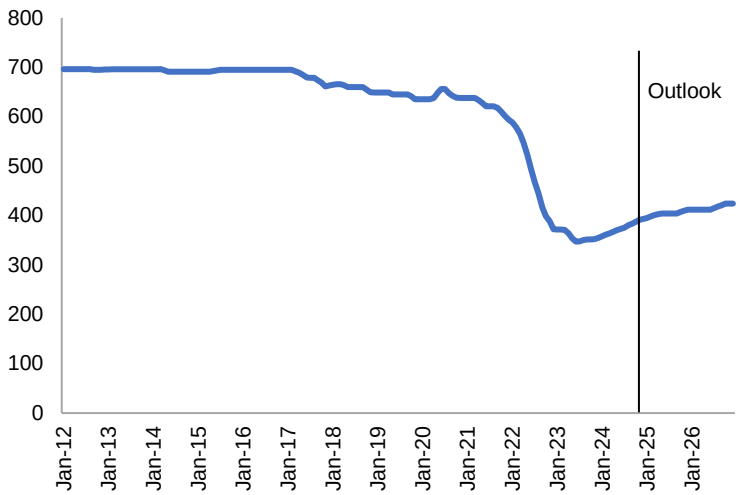
- U.S. oil growth is slowing despite policy support, with the production forecast lowered to 14.3 million b/d by 2032, as WTI prices are expected to remain below $70/b until 2031 due to global oversupply. While prices should still support free cash flow for operators, allowing gradual growth and capital returns to investors, long-term output relies more on market conditions and Wall Street investment than on political policies. Additionally, the Brent-WTI spread is projected to narrow to under $5 in 2026, as U.S. production growth slows and pressure on Permian crude pipelines eases, with the overall U.S. supply peak revised down from 15.1 million b/d in 2030 to 14.8 million b/d in 2035.

US Markets:

Total US annual average growth of 317,000 b/d in 2024 is expected, with an average yearly production of 13.2 million b/d. For 2025, forecasted growth is about 429,000 b/d and the expected annual average output is 13.7 million b/d.

- Onshore production growth in the US Lower 48 is projected to decelerate from 365,000 b/d in 2024 to 280,000 b/d in 2025, driven by a softer oil price landscape as operators focus on maximizing free cash flow. Meanwhile, output from the Gulf of Mexico is anticipated to rise by 162,000 b/d.
- US crude and condensate output averaged 13.18 million b/d in May, a decline of about 60,000 b/d from April, according to the latest EIA monthly data. The decline was primarily observed in US Gulf of Mexico (GOM) and North Dakota with each down 46,000 b/d and 43,000 b/d, respectively. These declines were partially offset by increases in the Permian Basin as Texas production was up by 35,000 b/d and New Mexico production increased 20,000 b/d since April 2024.

US SPR inventories, MMbbl



Data compiled December 2024.
Source: S&P Global Commodity Insigts.

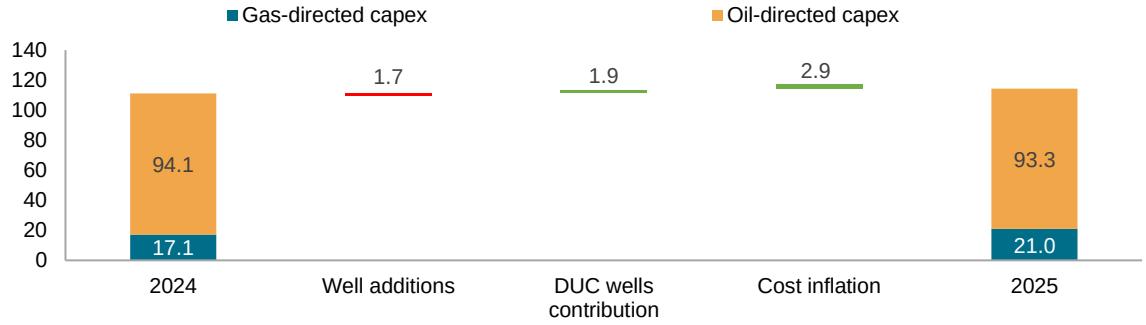
Figure 3-4: US SPR inventory history

- The US Lower 48 onshore rig count recovered modestly to 581, from 578 in June, and is expected to increase to 601 by year-end to compensate for baseline declines. Some of the decline in rig count is perpetuated by increased rig efficiency (faster drilling). The US Lower 48 onshore rig count is expected to average 597 in 2024 (down from 705 in 2023) and 643 in 2025. Though rig activity is recovering since the pandemic, rig activity is lower than previously expected as many large private companies have been acquired by public companies lowering production growth guidance as their aggregate portfolios are optimized for cash flow.
- Following an unprecedented amount of oil released by the Biden administration from the Strategic Petroleum Reserve (SPR) in 2021 and 2022, the US Department of Energy (DOE), began restocking the reserve and has purchased about 50 million barrels this year. As of September 5, 2024, the SPR inventory amounted to 376.8 million barrels, which was slightly above half of its design capacity of 714 million barrels (Figure 3-4).
- The DOE plans to purchase up to 3 million barrels of sour crude oil for delivery to the Bryan Mound SPR site in April and May 2025. Approximately 5.5 million barrels were expected to be added to the SPR between November and December 2024. Since restocking began, the DOE has acquired over 47 million barrels, and as of November 15, 2024, the SPR inventory stood at 389 million barrels, just over half of its 714 million barrel capacity.

Investment in the US oil markets could be impacted by the following dynamics:

- Stable 2025 oil prices will bring lower production growth as spending increases are not enough to offset deteriorating acreage quality.
- Capital expenditure (Capex) budgets are expected to increase in 2025 compared to 2024, totaling $2.9 billion, primarily due to inflation. DUCs are expected to play a crucial role in keeping production levels up in 2025 (see Figure 3-5).

US onshore Capex growth in $ billion



Data compiled December 2024.
Source: S&P Global Commodity Insights.

Figure 3-5: 2023 – 2024 US onshore Capex growth

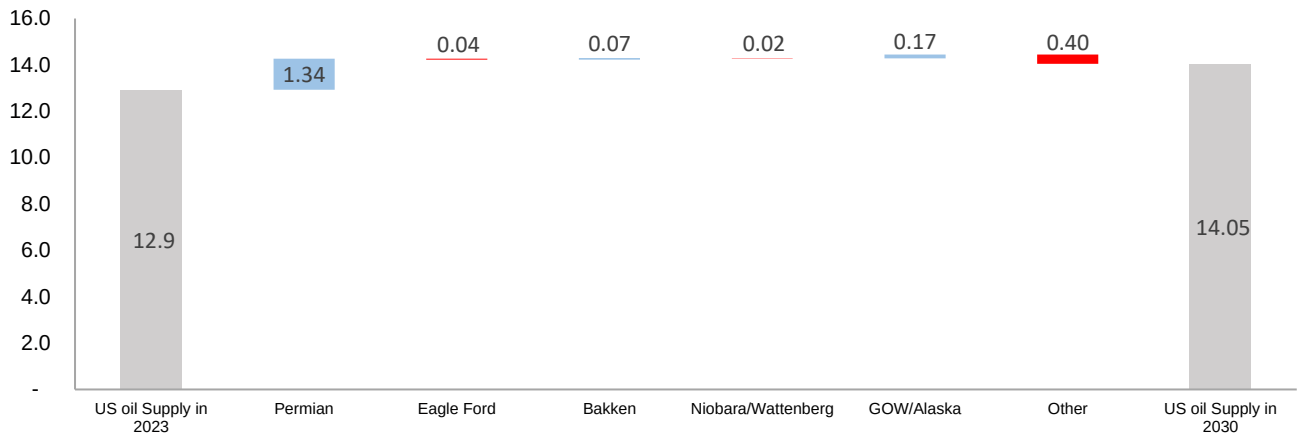
- Environmental, Social and Governance (ESG) compliance and regulations will become increasingly important.
    - Most international oil companies are committed to some form of net zero emissions targets diverting investments and resources away from traditional oil and gas projects. The pressure from ESG is likely to increase over time having a great impact in the long run.

B. Outlook for North Dakota and the Bakken/Three Fork

A steady oil price environment with West Texas Intermediate (WTI) averaging near $80/b, rising rig efficiency and bigger well completions allowed US supply to grow about 1 million b/d in 2023, and reach 12.9 million b/d, the fastest pace since 2019. The price environment is expected to remain stable to generate further US supply growth through 2030, although growth becomes more difficult as maturing plays offer worsening acreage quality with less productive wells.

S&P Global projects that US oil supply will be 14.05 million b/d by 2030, driven primarily by growth in Permian Basin. The Bakken is expected to contribute 1.2 million b/d, approximately 9%, of the total U.S. oil supply (Figure 3.6).

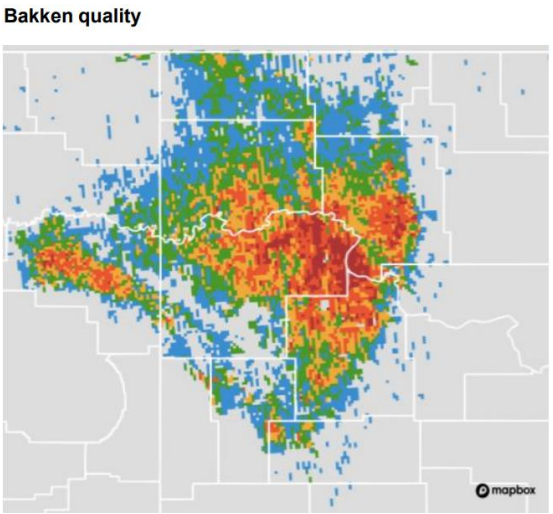
US oil production outlook by play to 2030 (million b/d)



Data compiled January 2025.
Source: S&P Global Commodity Insights.

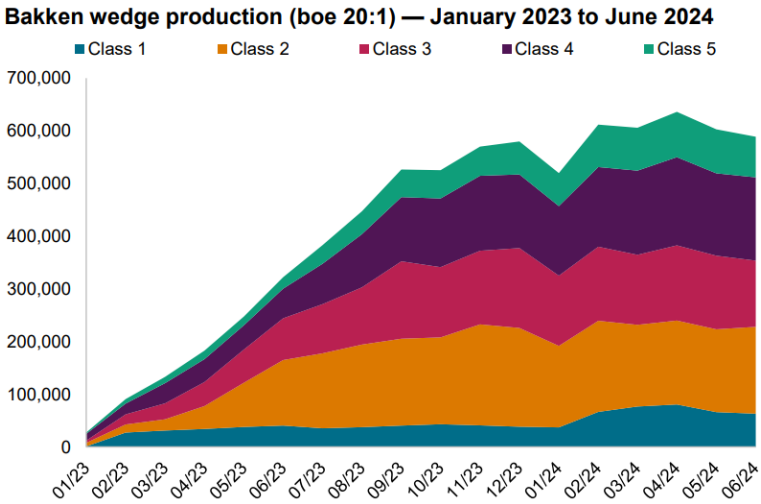
Figure 3-6: Basins contributing to future US oil supply

Remaining resource base and acreage quality: The Bakken/Three Forks play is already experiencing sweet spot exhaustion. Average well productivity peaked in 2020 and has declined since then despite operators improving lower quality acreage by increasing lateral lengths and completion intensity. S&P Global has designated five acreage classes for the play, with class 1 being the best (see Figure 3-7a). While the economics of class 1 acreage typically encourage activity, the scarcity of drilling opportunities has compelled operators to concentrate on class 2 and class 3 acreage. Nevertheless, the economic conditions in these areas have generally been favorable for activity. With a lower price forecast for 2025 and 2026, a modest shift towards high-grading is anticipated as producers prioritize cash flow over volume.



Screenshot as of Sept. 6, 2023.
Source: S&P Global Commodity Insights upstream E&P content (Energy Studio: Impact).
Underlying base map provided by © Mapbox and © OpenStreetMap.org contributors.

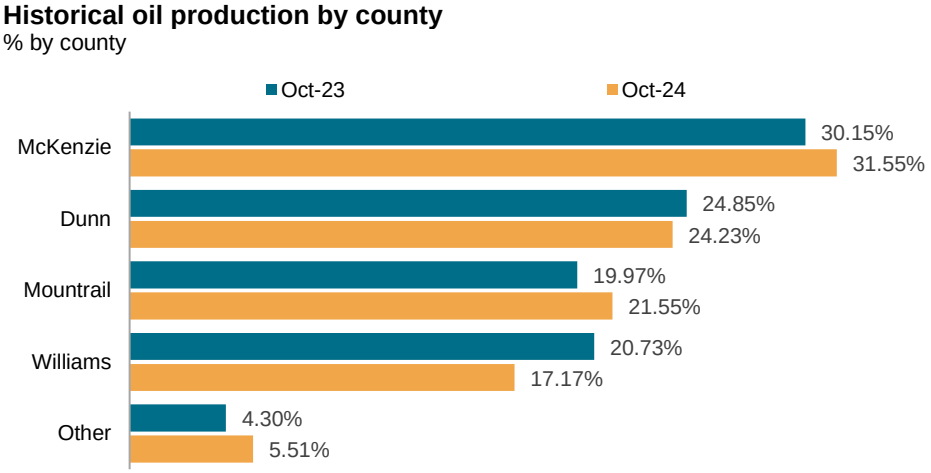
Figure 3-7a: Bakken play and acreage classes



Data compiled December 2024.
Source: S&P Global Commodity Insights.

Figure 3-7b: Acreage class depletion

Production by county: Historically, McKenzie, Dunn, Mountrail, and Williams contributed up to 94% of total Bakken/Three Forks production (see Figure 3- 8). As class 1 acreage wanes, production increases have shifted to Dunn and Williams, but McKenzie continues to play a significant role while Mountrail area production continues its decline.



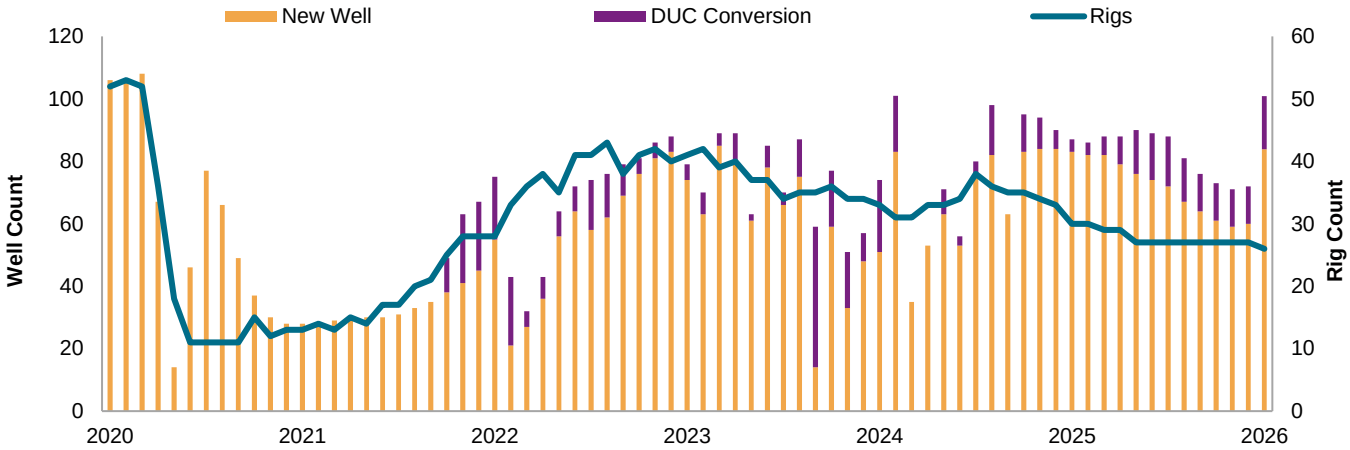
Data compiled in January 2025
Source: North Dakota Oil & Gas Division - Monthl Oil and Gas.

Figure 3-8: North Dakota % production by county

Short-term Drilling Forecast: Recent acquisitions have consolidated acreage positions across a few global public companies that now operate a large portion of the play's production. These companies have a wide global portfolio which is expected to compete with investment in the Bakken. Producers are still actively drilling in the play, with 2024 rig counts exceeding 30. While this is lower than the pre-pandemic counts in the 50's, it is still a significant expansion over 2020 and 2021 (see Figure 3.9). S&P Global projects that more than 80 wells (with some variability) will come on stream each month. However, over the next three years, the (drilled, but uncompleted) DUC well inventory of around 400 wells will contribute significantly to this total.

The DUC contribution is significant because fewer rigs are needed to maintain production levels and completing a DUC well costs about 65% of what a new drilled and completed well would cost.

Bakken historical and forcast well count and rigs

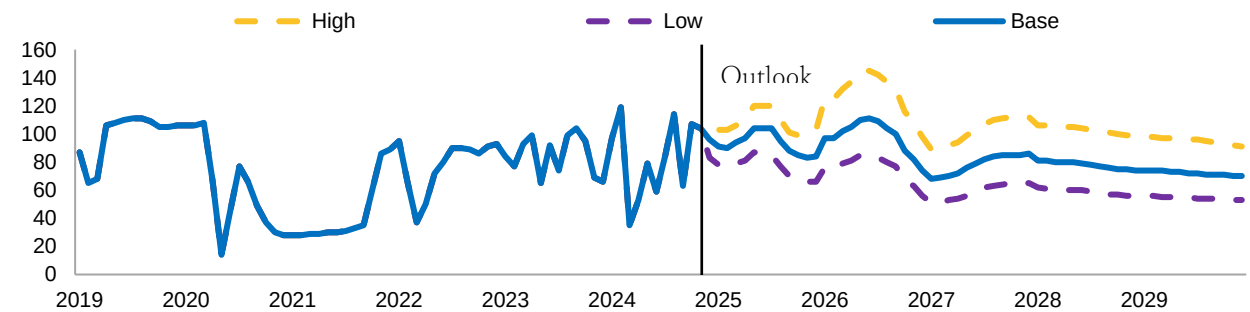


Data compiled December 2024.
Source: S&P Global Commodity Insights.

Figure 3-9: New wells including DUCs – Bakken play

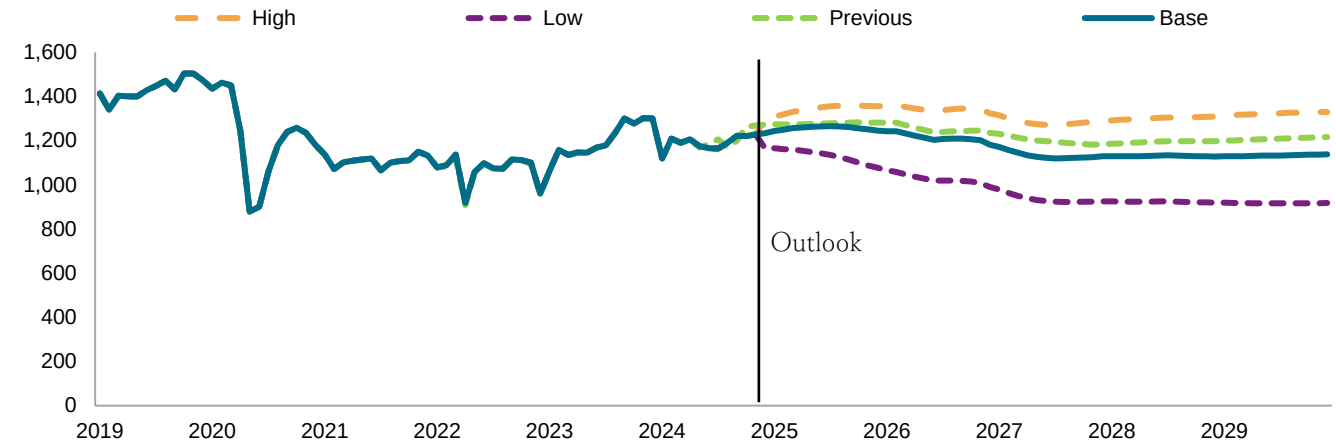
Long-term low, base, and high cases: Three different Bakken scenarios were developed offering a range of drilling and oil production outlooks through 2030 (Figures 3-10 and 3-11). The base case new well count and the oil production considers that companies will continue to actively drill in the play reaching a maximum of about 111 wells per month in the middle of 2026 and an oil production of about 1.2 million b/d, before declining afterwards. The base case incorporates oil prices in the $70/b-$80/b range. The high case applies a 24% higher oil price outlook than the base case driving the new well spuds to the 130-140 wells per month range, and an oil production rate of about 1.35 million b/d. The low case assumes a 17% weaker oil price than the one for the base case that would lead to lower reinvestment rates. In the low case new wells range from 70-80 per month, and oil production would be around 1.0 million b/d. The low case also assumes the potential shut down of the Dakota Access Pipeline (DAPL), which is currently being litigated.

Bakken Historical Wll Count and Forecast By Case (Total New Wells)



Data Compiled December 2024.
Source: S&P Global Commodity Insights.

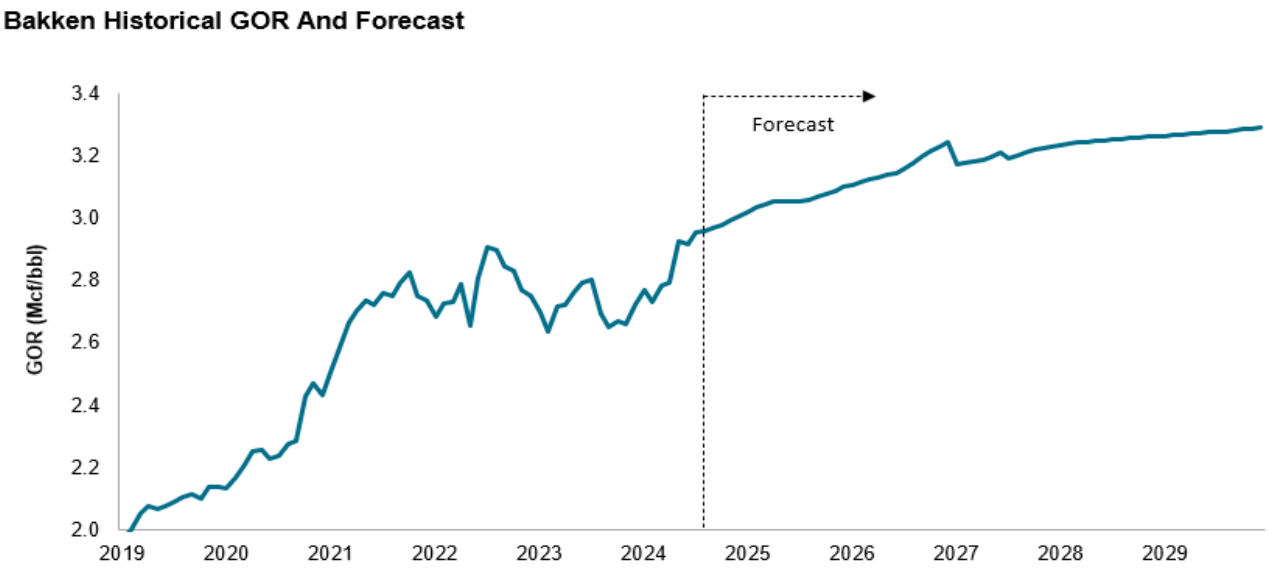
Figure 3-10: Low-Base-High drilling forecasts. Bakken play



Data Compiled December 2024.
Source: S&P Global Commodity Insights.

Figure 3-11: Low-Base-High oil production forecasts – Bakken play

Associated gas production relative to oil production is projected to increase from the current level of 3.5 Bcf/day to 4.2 Bcf/day by the end of the forecast period. Over the life of a typical well, the gas-oil ratio rises. This mean that as the average age of the wells in a play increases the amount of gas produced will increase relative to oil. The differences in the new well additions between the outlooks are not enough to present a material impact on the resulting outlook of the GORs, respectively (Figure 3-12).



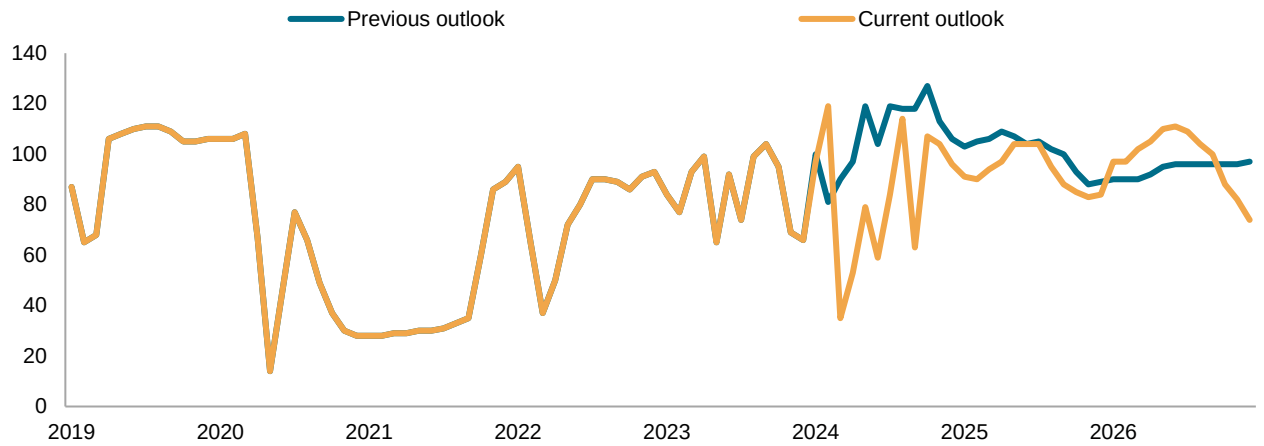
Data compiled in September 2024.
Source: S&P Global Commodity Insights.

Figure 3-12: Gas oil ratio (GOR) forecast – Bakken play

Gas takeaway capacity is an on-going concern in the Bakken. In the past high amounts of excess gas was flared, but these volumes have been reduced with 95% of the produced gas being handled by current infrastructure. As gas production is forecasted to increase, some additional infrastructure will be needed to transport and process associated gas to market.

Change in forecast since October 2024: The November 2024 new well and oil production forecast is slightly lower relative to the October 2024 forecast (Figures 3.13 and 3.14) over the next six months. This is due to rig counts and oil prices being lower than expected partly because of the severe weather and fire that the region experienced. On November 2024, Brent oil price was $74.47/bbl and WTI was $69.67/bbl. In contrast, Brent oil price was about $74.33/bbl in September 2024. A peak in new wells and oil production is expected around late December 2026 followed by a decline due to exhaustion of the core acreage in the play.

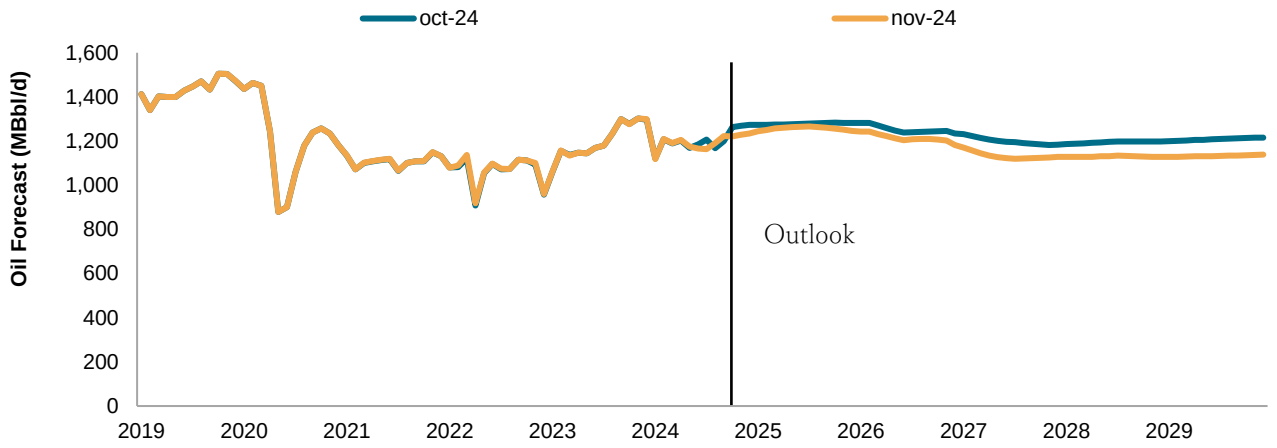
Bakken Base Case New Well Forecast



Data compiled December 2024.
Source: S&P Global Commodity Insights.

Figure 3-13: New wells including DUCs – Bakken play

Bakken Base Case Oil Production Forecast



Date compiled December 2024.
Source: S&P Global Commodity Insights.

Figure 3-14: Oil production forecast – Bakken play

DAPL Shut-down Risk to the forecast: The Dakota Access Pipeline (DAPL) is crucial for maintaining the competitiveness of Bakken crude oil. In 2023, the DAPL transported approximately 750,000 b/d, accounting for about half of all Bakken supply to the market. The pipeline delivers crude to the midwestern hub at Patoka, Illinois, and connects to ETCOP, which transports barrels to Nederland on the Gulf Coast. Although the DAPL has faced legal challenges and is awaiting an environmental assessment by the Army Corps of Engineers, it is likely to remain operational, with the potential for expansion to over 1 million b/d depending on shipper interest. Bakken output currently lags about 300,000 b/d below its pre-pandemic peak of 1.5 million b/d. The recent reset in output and the expansion of DAPL have decreased reliance on rail transport, with only about 133,000 b/d of Bakken crude being transported by rail in 2023, primarily to the East and West Coasts.

As output recovers, Bakken pipeline takeaway capacity appears adequate, and further expansion of existing pipeline systems is likely if Bakken production surpasses its previous highs. If the DAPL were to be permanently shut down, the need to transport the full 750,000 b/d by rail could significantly increase costs, adding $8 to $9 per barrel compared to pipeline transport, which would diminish the Bakken's competitiveness against other U.S. oil sources. Additionally, the perception that rail transport is less safe and more environmentally concerning than pipeline transport could further deter investment in the Bakken play.

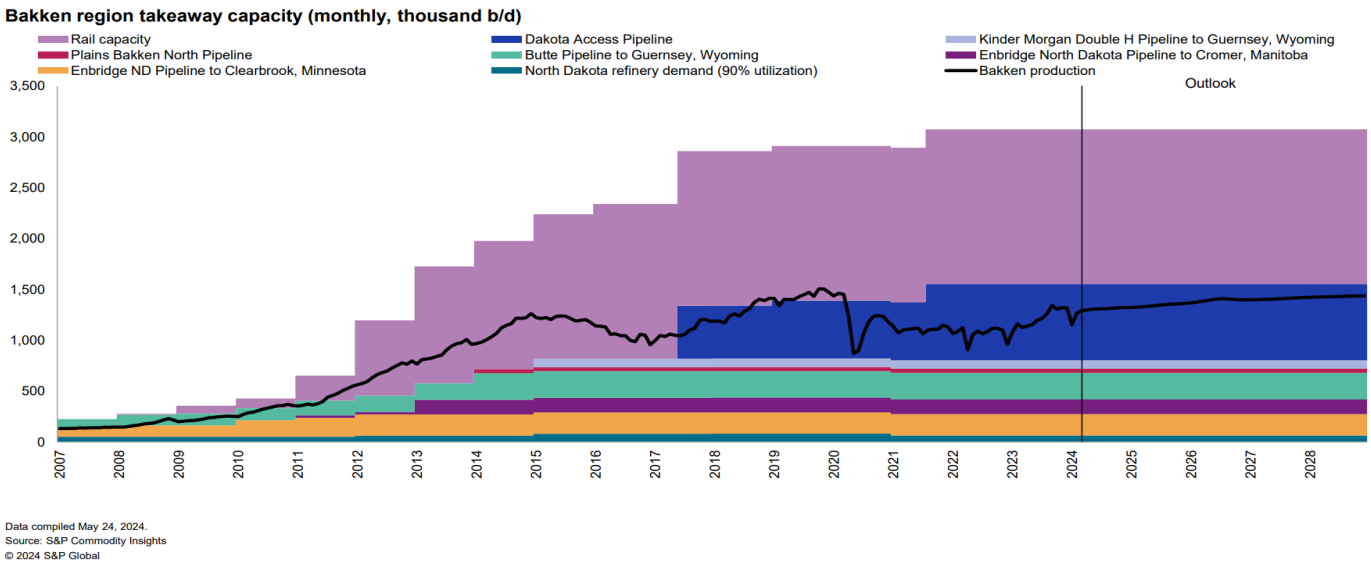


Figure 3-15: North Dakota take-away and production forecast

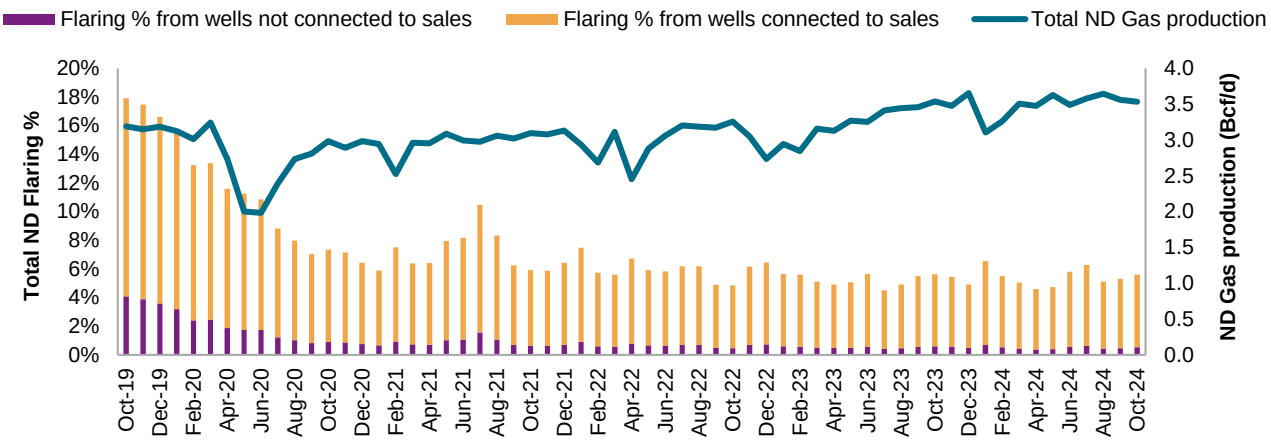
Regulations – Venting and Flaring: The following regulations focusing on associated gas flaring may affect oil and gas drilling and production:

- Beginning in 2014, the NDIC (North Dakota Industrial Commission) established a requirement for 91% of all gas to be captured or oil production will be curtailed, and fines levied. Exceptions are allowed for one year, if wells are outside the core development areas or if certain conditions are met such as being within limited rights of way, having potential reservoir damage, having safety issues, etc. This order aims to increase the capture of natural gas, reduce percentage of flared gas, and incentivize investment in gas capture infrastructure.
- Each drilling permit is required to submit a gas capture plan.
- The Biden administration established in 2022 the Inflation Reduction Act (IRA) which adds a methane emissions fee that applies to oil and gas facilities that emit methane.

- The Environmental Protection Agency (EPA) has taken a variety of actions to reduce methane emissions from the oil and gas sector:
    - In December 2023, it released a final New Source Performance Standards and Emissions Guidelines (NSPS/EG) to reduce methane and pollutants. States have two years to develop plans for existing sources, and industry has three years to comply.
    - In May 2024, it updated methane emissions reporting requirements under subpart W of EPA's Greenhouse Gas Reporting Program.
    - It proposed a Waste Emissions Charge on methane emissions exceeding specified thresholds from applicable oil and gas facilities, with the final rule expected by the end of 2024. Facilities compliant with the NSPS/EG may be exempt from this charge after meeting certain criteria.
- On April 10, 2024, the Bureau of Land Management (BLM) issued a final rule updating venting and flaring requirements for federal and Indian leases. However, a U.S. District Court Judge has blocked the BLM from enforcing this rule in North Dakota, Montana, Texas, Wyoming, and Utah while the case is ongoing.

Flaring reductions improved significantly in recent years with a high gas capture rate of ~94-95%. This contributes to a more sustainable and environmentally responsible oil and gas industry in North Dakota. In terms of the 5% of gas flared, 1% is from wells not connected to sales which is likely due to a lack of pipelines. The existing infrastructure is insufficient to handle the remaining 4% of flared gas (see Figure 3-16).

North Dakota gas flaring trend vs gas production



Data compiled in January 2025.
Source: S&P Global Commodity Insights.

Figure 3-16: North Dakota gas flaring trend vs. gas production

NEPA Review for Federal Actions:

- Projects subject to National Environmental Policy Act (NEPA) review can face legal actions if stakeholders believe that the environmental review was inadequate. This can further delay or alter project timelines.
    - Several Non-Government Organizations (NGOs) have sued to halt the development of BLM leases in western states.
    - District Courts have upheld BLM approvals in some cases, finding no NEPA or Federal Land Policy and Management Act violations. In other cases, courts have mandated supplemental environmental assessments.
    - Only 9% of the Bakken is on federal acreage. 5% of the Bakken is on BLM acreage and 4% is on tribal land. This means that much of the acreage in the play may not experience the same level of federal regulatory impact as other plays within the U.S. that are dominated by federal land.

Energy Transition: In response to the carbon reduction target, an accelerated energy transition presents another possible risk to the forecast as renewable energy sources such as wind and solar would displace fossil fuels. S&P Global projects that oil will account for 25% of the global energy mix by 2050, assuming a global temperature increase of 2.6 ℃ by 2100. The global temperature increase of 1.5 ℃ by 2100 proposed by the Paris Agreement would lower the global oil contribution to the

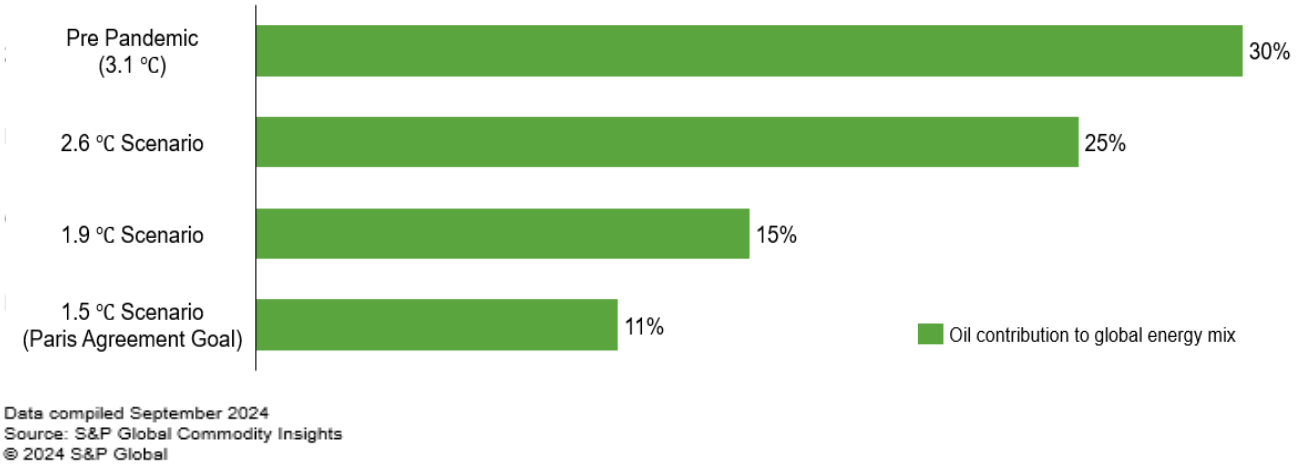


Figure 3-17: Projected oil contribution to global energy mix by scenario of global temperature increase by 2100

energy mix to just 11%. If this were to occur, this would reduce the oil-price outlook to below $30/bbl which in effect would shut down future drilling in the Bakken as only about 26% of the play breaks even for under $40/bbl (Figure 3-17).

Agriculture

The S&P Global aggregated principal crop area for the 2024/25 season was 313.7 million acres with corn, soybean, and wheat making up 223.9 million acres. Double cropped soybeans accounted for 3.6 million acres while an additional 24.8 million acres were enrolled in CRP. The total principal aggregated crop area including CRP acres for 2024/25 was 338.4 million acres, 4.3 million acres lower than 2023/24. Prices for key crops continue to decline from their 2022 highs, placing pressure on farm profitability. 2024/25 feed grain production (corn, sorghum, barley, and oats) totaled 380 million metric tons (MMT), which is 4.6 MMT lower than the total in 2023/2024.

US corn area for 2024/25 totals 90.9 million acres, 3.7 million acres below 2023/2024. US soybean area for 2024/25 totaled 87.1 million acres, up 3.5 million acres from 2023/24. US all wheat area for 2024/25 is expected to total 46.1 million acres, 3.5 million acres below 2023/24 totals. Spring wheat plantings total 10.6 million acres, 600,000 acres below last year's total. Durum wheat area is projected to total 2.1 million acres, up 400,000 acres compared to last season. This decline in wheat acres is partially the result of increased cotton plantings. US all cotton area for 2024/25 totaled 11.2 million acres, up 1.0 million acres from 2023/24.

Commodity prices for corn, soybeans, and wheat continue to decline from their 2022 highs as the market stabilizes after the supply shocks of COVID-19 and the Russia-Ukraine War. Livestock and meat prices for 2024 held higher as beef prices continued to face strong demand and weak supply levels, with pork values increasing amid a rebound in overall fundamentals, while chicken prices remained high as production output ran into some overarching hurdles. Meanwhile, dairy product prices expanded through 2024 owing to ongoing difficulties in the dairy herd that are keeping total supply figures suppressed, while domestic consumption strength in cheese and butter both pressuring milk usage and pricing higher.

Fertilizer costs are forecast to rise very slightly for all crops while seed costs rise minimally in crops where larger GMO purchases are made. Chemical cost will provide another small reprieve along with fuel, but labor and repairs continue to rise. Crop insurance will offer larger savings this year as costs decline owing to lower revenue guarantees. While there is some optimism that land rents may weaken slightly in 2025, we caution this statement given current carry-in futures as well as yields in 2024.

Net farm income continues to witness a decline succeeding a new record in 2022. Net farm income is expected to decline from 146.5 billion in 2023 to $131.4 billion in 2024 as commodity prices decline. Net farm income for 2025 is forecasted at $116.9 billion, which represents a sizable decline from its peak in 2022. Crop receipts were $252.2 billion in 2024 and forecast to drop off slightly in following years. Farm cash expenses were $423.2 billion and decline to $418.8 billion in 2025. Net farm income will continue to decline through the forecast period. However, when adjusted for inflation, net farm incomes are aligned with levels experienced in the latter part of the 2010s.

Balance Sheet of the US Farming Sector

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
(Billion Dollars)															
Farm assets															
Real estate	2,401.4	2,472.8	2,502.6	2,519.9	2,596.8	2,822.5	3,156.4	3,338.8	3,413.2	3,335.4	3,294.4	3,351.8	3,409.2	3,496.4	3,585.1
Livestock and poultry	109.0	107.1	97.1	99.2	98.3	104.1	108.7	127.5	140.1	132.4	127.1	127.2	125.8	125.1	126.4
Machinery and motor vehicles	255.4	272.3	271.0	279.0	278.8	308.3	312.1	339.3	347.8	347.9	349.2	348.4	349.4	350.3	351.4
Crops stored	55.7	56.8	59.7	49.6	50.6	58.1	72.2	66.5	62.3	62.5	63.5	68.4	71.9	76.8	80.3
Purchased inputs	14.9	15.8	16.1	13.9	14.0	18.3	21.2	20.2	20.7	19.8	19.6	19.1	19.7	20.0	20.9
Financial assets	78.1	81.1	72.6	87.5	92.0	112.7	117.9	121.9	120.0	114.0	109.0	112.0	116.0	119.2	121.8
Total farm assets	2,914.4	3,005.9	3,019.1	3,049.1	3,130.5	3,424.1	3,788.4	4,014.3	4,104.1	4,012.1	3,962.9	4,027.0	4,091.9	4,187.8	4,285.9
Farm Liabilities															
Real estate	226.0	236.2	245.8	267.9	288.6	324.4	334.4	344.6	355.4	348.5	344.1	349.6	355.3	364.2	373.1
Nonreal estate	148.2	154.2	156.8	152.6	152.6	149.9	161.8	174.4	182.7	179.6	177.0	178.6	180.6	183.0	185.6
Total farm liabilities	374.2	390.4	402.6	420.5	441.3	474.3	496.2	519.0	538.2	528.1	521.0	528.2	535.9	547.2	558.7
Farm Equity	2,540.3	2,615.5	2,616.5	2,628.6	2,689.3	2,949.8	3,292.3	3,495.4	3,566.0	3,484.0	3,441.9	3,498.8	3,556.1	3,640.6	3,727.2
Debt/Equity Ratio	0.15	0.15	0.15	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Debt/Asset Ratio	0.13	0.13	0.13	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

\1 Deflated by the GDP Implicit Price Deflator, 2000=100
Note: Shaded years are forecasts
Source: S&P Global Commodity Insights.

US farm balance sheet

The US farm balance sheet is expected to remain largely stable through the forecast period. Farm assets (largely driven by changes in farm real estate, but also livestock and poultry, machinery, crops stores, and other purchased

inputs) increased slightly in 2024. Farm liabilities (largely from real estate) also increased moderately in 2024 and are the highest on record. Total farm equity and debt/equity ratios are stable in 2024 and remain within historical trends. However, farm asset values are expected to decline over the next several years due to decline in farmland values as well as livestock and poultry values.

Balance Sheet of the US Farming Sector

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
(Billion Dollars)															
Farm assets															
Real estate	2,401.4	2,472.8	2,502.6	2,519.9	2,596.8	2,822.5	3,156.4	3,338.8	3,413.2	3,335.4	3,294.4	3,351.8	3,409.2	3,496.4	3,585.1
Livestock and poultry	109.0	107.1	97.1	99.2	98.3	104.1	108.7	127.5	140.1	132.4	127.1	127.2	125.8	125.1	126.4
Machinery and motor vehicles	255.4	272.3	271.0	279.0	278.8	308.3	312.1	339.3	347.8	347.9	349.2	348.4	349.4	350.3	351.4
Crops stored	55.7	56.8	59.7	49.6	50.6	58.1	72.2	66.5	62.3	62.5	63.5	68.4	71.9	76.8	80.3
Purchased inputs	14.9	15.8	16.1	13.9	14.0	18.3	21.2	20.2	20.7	19.8	19.6	19.1	19.7	20.0	20.9
Financial assets	78.1	81.1	72.6	87.5	92.0	112.7	117.9	121.9	120.0	114.0	109.0	112.0	116.0	119.2	121.8
Total farm assets	2,914.4	3,005.9	3,019.1	3,049.1	3,130.5	3,424.1	3,788.4	4,014.3	4,104.1	4,012.1	3,962.9	4,027.0	4,091.9	4,187.8	4,285.9
Farm Liabilities															
Real estate	226.0	236.2	245.8	267.9	288.6	324.4	334.4	344.6	355.4	348.5	344.1	349.6	355.3	364.2	373.1
Nonreal estate	148.2	154.2	156.8	152.6	152.6	149.9	161.8	174.4	182.7	179.6	177.0	178.6	180.6	183.0	185.6
Total farm liabilities	374.2	390.4	402.6	420.5	441.3	474.3	496.2	519.0	538.2	528.1	521.0	528.2	535.9	547.2	558.7
Farm Equity	2,540.3	2,615.5	2,616.5	2,628.6	2,689.3	2,949.8	3,292.3	3,495.4	3,566.0	3,484.0	3,441.9	3,498.8	3,556.1	3,640.6	3,727.2
Debt/Equity Ratio	0.15	0.15	0.15	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Debt/Asset Ratio	0.13	0.13	0.13	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13

\1 Deflated by the GDP Implicit Price Deflator, 2000=100
Note: Shaded years are forecasts
Source: S&P Global Commodity Insights.

US Crop Outlooks

Soybeans

Supply: Soybean plantings in 2024/25 increased to 87.1 million, a 3.5 million acre increase from 2023/24. Soybean yields improved by 0.9 bushels per acre compared to last year for a total of 51.7 bushels per acre. As a result, total production for 2024/25 was 4,456 million bushels, up 294 million bushels from 2023/24.

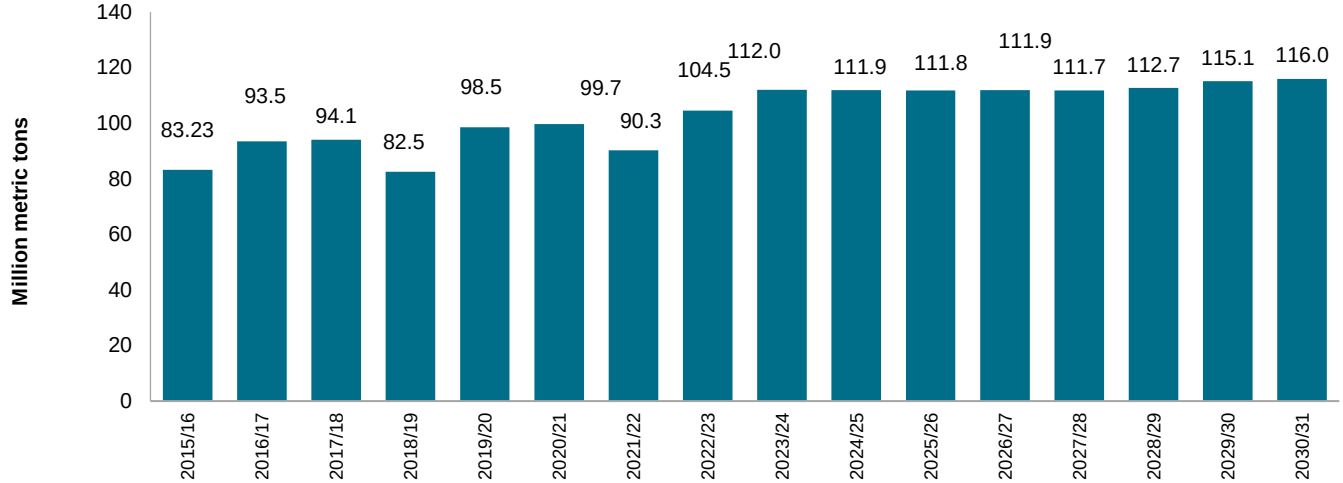
Demand: Soybean crush is forecast to increase to 2,435 million bushels in 2024/25 and is expected to increase by 215 million bushels in 2025/26 due to increased demand for renewable diesel in the US. While exports are expected to remain around 1,800 million bushels in 2024/25, exports are projected to decline in 2025/26 to 1,700 million bushels. However, in the event of a US-China trade war, US old crop exports could decline by 50 million bushels while new crop exports could decline by as much as 500 million bushels.

U.S. SOYBEAN COMPLEX FUNDAMENTALS									
	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
Prices (Dollars Per Bushel)	$14.20	$12.40	$9.50	$8.94	$9.59	$10.03	$10.56	$10.46	$10.99
Soybean to Corn Price Ratio	2.2	2.7	2.3	2.1	2.5	2.3	2.4	2.3	2.4
Acreage (Million Acres)									
Planted Area	87.5	83.6	87.1	84.0	87.0	86.3	86.4	88.3	84.4
Harvested Area	86.2	82.3	86.2	83.0	86.0	85.4	85.4	87.3	83.5
Harvested Area % of Planted	99%	98%	99%	99%	99%	99%	99%	99%	99%
Yield (Bushels Per Acre)	49.6	50.6	51.7	53.5	53.6	54.1	54.7	55.1	55.7
Supply (Million Bushels)									
Beginning Stocks	274	264	342	481	498	519	445	470	583
Production	4,270	4,162	4,456	4,443	4,610	4,622	4,670	4,813	4,656
Imports	25	21	15	15	15	15	15	15	15
Total Supply	4,569	4,447	4,813	4,939	5,123	5,156	5,131	5,299	5,254
Domestic Disappearance (Million Bushels)									
Crush	2,212	2,287	2,435	2,650	2,674	2,766	2,785	2,820	2,866
Seed & Residual	114	123	97	91	120	120	130	130	127
Total Domestic Disappearance	2,326	2,410	2,532	2,741	2,793	2,886	2,915	2,950	2,993
Exports	1,980	1,695	1,800	1,700	1,811	1,825	1,746	1,766	1,643
Total Disappearance	4,305	4,105	4,332	4,441	4,604	4,710	4,660	4,715	4,636
Ending Stocks	264	342	481	498	519	445	470	583	617

Price risk: This season's (2024/25) farm-level price is expected to hover around $9.50 per bushel and will be $8.94 per bushel in 2025/26. In the advent of a US-China trade war, the buildup in US soybean stocks and would lower soybean futures, with the US-China trade war scenario 25/26 crop year average price forecast falling to $8.80 per bushel.

China's soybean crush numbers are expected to increase slightly in 2025/26 and continue rising through 2029/30. However, crush demand growth is expected to be slower than in the 2010s due to slowing economic growth. Chinese import demand for soybeans is expected to decline slightly in 2025/26 and remain steady for a few years before increasing in 2029/30. This is due to China's push for increasing domestic production of agricultural commodities. For instance, Beijing approved the importation two GM soybean seed varieties at the end of 2024.

China soybean import outlook



Source: S&P Global Commodity Insights

Corn

Supply: For 2024/25, corn plantings declined by 3.7 million acres to 90.9 million acres. However, favorable crop conditions, the highest rating since 2018, resulted in a yield of 183 bushels per acre, an all-time high. As a result, production decreased by only 199 million bushels to 15,142 million bushels.

Demand: Total domestic demand for corn is expected to increase slightly to 12,851 million bushels due to increased demand for food and industrial uses. However, the long-term demand growth for ethanol remains low due to the need for carbon capture and sequestration (CCS) technologies to be utilized for corn ethanol to be eligible for IRA tax credits to produce Sustainable Aviation Fuels (SAFs). However, corn ethanol that utilizes no-tilling, cover crop, and enhanced efficiency fertilizer may be eligible for IRA tax credits, although adoption of cover crops remains low.

Corn ethanol production is expected to decline from 16,543 million gallons in 2024/25 to 16,298 million gallons in 2025/26 before rebounding. While year-round E15 blends for the states of Illinois, Iowa, Nebraska, Minnesota, Missouri, Ohio, South Dakota, and Wisconsin starting April 28, 2025 will help buoy ethanol demand, further increasing year-round consumption of corn ethanol will likely require an act of Congress. However, the development of alcohol-to-jet (ATJ) pathways is expected to cause corn ethanol demand to increase to 17,492 million gallons by 2030/31.

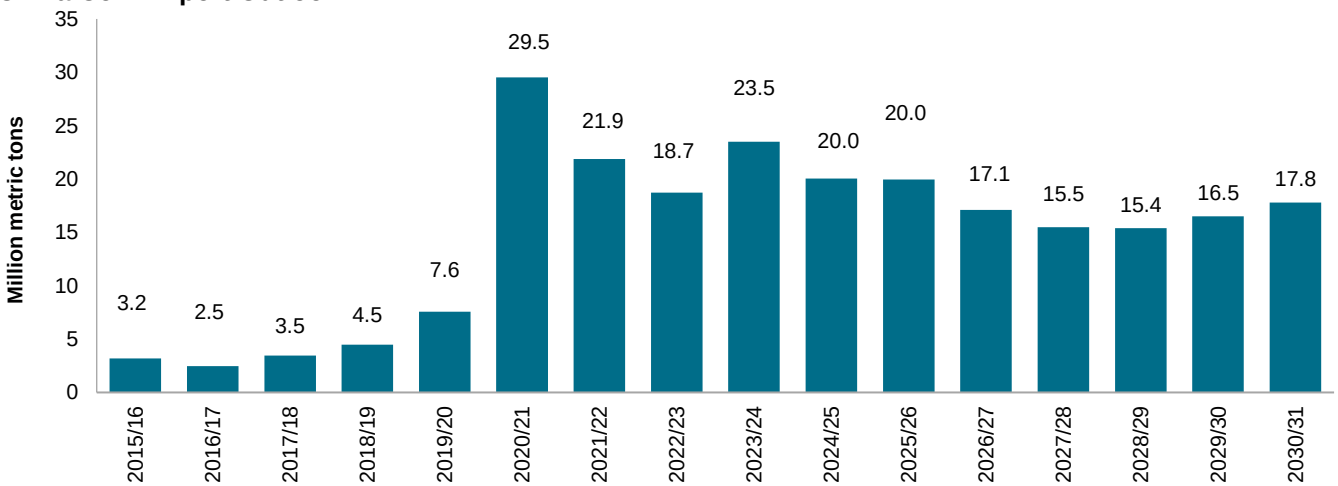
US corn exports are forecast to increase by 208 million bushels to 2,500 million for 2024/25. Ending stocks are expected to decrease again in 2024/25 to 1,576 million bushels.

U.S. CORN FUNDAMENTALS	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
Prices (Dollars Per Bushel)	$6.54	$4.55	$4.20	$4.20	$3.85	$4.38	$4.37	$4.52	$4.55
Acreage (Million Acres)									
Planted Acres	88.2	94.6	90.9	92.8	91.2	89.7	89.8	88.9	89.7
Harvested Acres	78.7	86.5	82.8	84.5	83.2	81.8	82.0	81.1	81.9
Harvested Area % of Planted	89%	91%	91%	91%	91%	91%	91%	91%	91%
Yield (Bushels Per Acre)	173	177	183	184	185	187	189	190	193
Supply (Million Bushels)									
Beginning Stocks	1,377	1,360	1,760	1,576	1,898	2,128	2,352	2,416	2,406
Production	13,651	15,341	15,142	15,547	15,351	15,261	15,453	15,452	15,783
Imports	39	28	25	25	39	39	39	39	39
Total Supply	15,066	16,729	16,927	17,149	17,287	17,428	17,843	17,906	18,228
Domestic Disappearance (Million Bushels)									
Total Domestic Disappearance	12,044	12,676	12,851	12,851	12,871	12,776	13,170	13,328	13,479
Exports (Million Bushels)	1,662	2,292	2,500	2,400	2,288	2,300	2,258	2,172	2,305
Total Disappearance (Million Bushels)	13,706	14,969	15,351	15,251	15,159	15,076	15,428	15,500	15,784
Ending Stocks (Million Bushels)	1,360	1,760	1,576	1,898	2,128	2,352	2,416	2,406	2,444

Price risk: The average farm level corn price for 2024/25 is expected to decline to $4.20 a bushel and remain at $4.20 a bushel for the 2025/26 season. However, factoring in a 70% probability of a trade war with China, corn prices are forecasted at $4.05 per bushel for 2024/25 and $3.70 per bushel for 2025/26.

For 2025/26, China's corn imports expected to remain steady at 20.0 MMT. However, corn imports for 2024/25 fell short of the original forecasts. Chinese corn imports will continue to be historically large, but imports are expected to decline throughout the decade due to a renewed emphasis on agricultural self-sufficiency by Beijing. To this end, Beijing approved the importation of a GM variety of corn seed.

China Corn Import Outlook



Source: S&P Global Commodity Insights

Wheat

Supply: US all wheat area for 2024/25 is expected to total 46.1 million acres, 3.5 million acres below 2023/24 totals. Spring wheat plantings total 10.6 million acres, 600,000 acres below last year's total. Durum wheat area is projected to total 2.1 million acres, up 400,000 acres compared to last season. The US all wheat yield is expected to increase to 51.2 bushels per acre, up from 48.6 bushels per acre. US all wheat production is forecasted to increase to 1,971 million bushels in 2024/25, an increase 167 million bushels.

Demand: Wheat food/milling and seed use will increase slightly in 2024/25 to 1,027 million bushels. However, feed demand is expected to increase by 25 million bushels to 110 million bushels. Exports increased by 5 million bushels to 855 million due to a stronger-than-expected white wheat shipment pace. However, a stronger dollar could still further reduce US wheat competitiveness.

Price risk: Wheat prices are forecasted to continue their decline from 2022/23 highs due to the Russia-Ukraine War and settle at $5.50 a bushel in 2024/25. Prices are expected to rebound in 2025/26 though and increase to $5.90 a bushel.

U.S. WHEAT FUNDAMENTALS

	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31
Prices (Dollars Per Bushel)	$8.83	$6.96	$5.60	$5.90	$5.21	$5.73	$5.79	$5.99	$5.98
Wheat to Corn Price Ratio	1.35	1.53	1.33	1.40	1.35	1.31	1.32	1.33	1.31
Acreage (Million Acres)									
Planted Acres	45.8	49.6	46.1	46.3	45.6	44.6	46.8	46.9	46.2
Harvested Acres	35.5	37.1	38.5	38.2	37.7	36.9	38.7	38.7	38.1
Harvested Area % of Planted	78%	75%	83%	82%	83%	83%	83%	83%	83%
Yield (Bushels Per Acre)	46.5	48.7	51.2	50.5	51.0	51.5	51.9	52.4	52.8
Supply (Million Bushels)									
Beginning Stocks	674	570	696	794	818	830	844	971	1,074
Production	1,650	1,804	1,971	1,928	1,924	1,903	2,009	2,028	2,014
Imports	122	138	114	115	113	118	118	120	119
Total Supply	2,446	2,512	2,782	2,837	2,855	2,851	2,971	3,118	3,208
Domestic Disappearance									
Food Use	972	961	965	971	971	969	972	973	977
Seed	68	62	63	63	62	65	65	64	63
Feed & Residual	74	85	110	95	95	90	88	97	63
Total Domestic Disappearance	1,114	1,108	1,138	1,129	1,128	1,124	1,125	1,134	1,103
Exports	762	707	855	890	896	883	875	910	915
Total Disappearance	1,876	1,815	1,988	2,019	2,025	2,007	2,000	2,044	2,018
Ending Stocks	570	696	794	818	830	844	971	1,074	1,190

Supply

Total cattle and calf inventories in the US fell 1.9% year over year to 87.2 million head due to the ongoing repercussions of heavy droughts in 2023. While feed expenses have concretely fallen, as drought conditions have overall improved, the previous hurdles resulted in a situation where heifer slaughter rose, creating a reduced calf crop. Total cattle inventories for 2025 are forecast to fall by 0.5% year over year as the sector continues moving toward recovery again. However, cattle numbers are forecast to trend higher in 2026, with stronger growth materializing in 2027. US beef production in the long term is expected to experience overall weaker growth due to the historical downward trend of beef consumption, combined with reduced population growth rates in the future.

Demand

US beef consumption in 2024 is set to rise by 2.4% year over year to 28.38 billion pounds. Domestic beef demand in 2025 is set to recede, however, as import figures flatten out while production reaches its lowest point among the surrounding years. Long-term beef demand is ultimately expected to see notable growth in 2027 and several years beyond owing to the realization of stronger production output metrics. However, the rate of US beef demand is expected to keep slowing in the years well beyond the end of this decade, as US consumers have overall moved away from beef consumption.

Beef exports are projected to fall by 4.4% year over year to 2.90 billion pounds in 2024, with a larger drop of 8.6% year over year to 2.65 billion pounds in 2025. While beef exports will continue growing through the decade, exports will not reach 2022 levels by 2030.

US Cattle Sector Fundamentals

Item	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Cattle															
Beef Cow Inventories (Jan 1, million head)	30.2	31.2	31.5	31.8	31.3	30.8	30.0	28.9	28.2	28.3	28.4	29.9	30.9	30.8	30.6
Boxed beef cutout (dollars per cow)	206.8	209.9	214.0	222.6	238.9	279.3	263.9	298.0	306.1	332.9	302.1	296.9	290.5	286.4	288.6
Beef															
Beef retial price (Dollars per pound)	$5.96	$5.91	$5.92	$6.04	$6.38	$7.25	$7.59	$7.98	$8.23	$8.39	$8.27	$8.09	$7.87	$7.72	$7.76
Production (mil lbs)	25,221	26,228	26,867	27,148	27,153	27,938	28,291	26,964	26,930	25,102	25,101	25,703	26,836	27,906	28,154
Imports (mil lbs)	3,015	2,993	2,999	3,057	3,342	3,311	3,391	3,727	4,333	4,242	3,884	3,888	3,878	3,842	3,766
Exports (mil lbs)	2,556	2,860	3,155	3,022	2,956	3,446	3,536	3,038	2,904	2,654	2,876	2,758	3,035	3,339	3,327
Domestic use (mil lbs)	25,673	26,371	26,665	27,167	27,484	27,828	28,109	27,713	28,377	26,668	26,101	26,809	27,644	28,377	28,585

\1 Deflated by the GDP Implicit Price Deflator, 2000=100
Note: Shaded years are forecasts
Source: S&P Global Commodity Insights

Prices

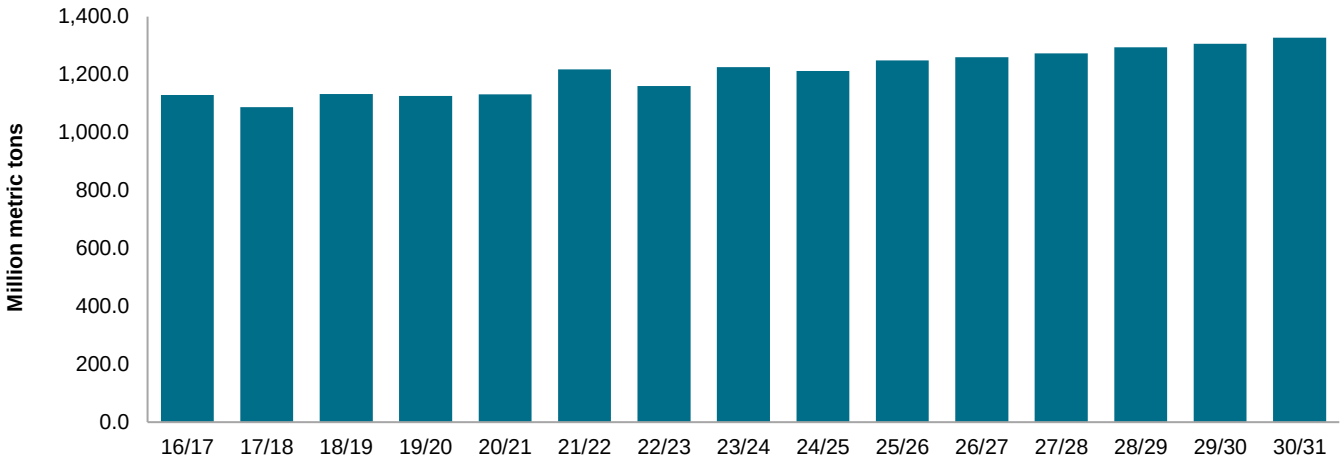
Beef prices in 2024 increased to $306.1 per hundredweight (cwt), establishing a new record high for a year, following the previous record increase in 2023. These notably elevated beef values are due to a combination of supply and demand influences, with production weaker because of prior supply and inventory reductions, while consumption remains strong despite high prices. As supply recovery requires a slowdown in cattle slaughter and consequently beef production, beef prices are expected to rise even higher in 2025 to $332.9 per cwt, attributed to supply reaching its lowest point. While prices will begin declining in 2026, prices will remain about the 2022 price through the forecasted period.

Global Outlook and Assumptions

Corn

Supply: Global corn product decline slightly in 2024/25 by 13.6 MMT for a total of 1,212 MMT with the declines coming from the US, Argentina, Russia, and Ukraine. Globally supplies are projected to increase steadily through the decade to a total of 1,327 MMT by 2030/31 with the majority of increases coming from China, Brazil, and the US.

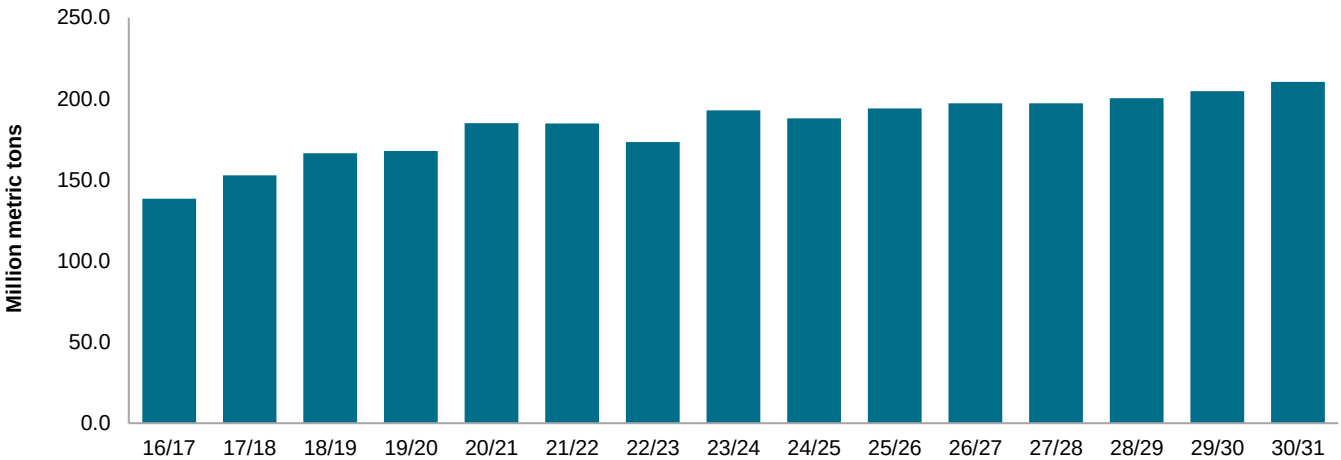
Global corn production



Source: S&P Global Commodity Insights.

- Demand: Global corn imports decreased by 4.9 MMT in 2024/25 for a total of 187.9 MMT. China was the primary driver of this trend as it imported 3.5 MMT less corn in 2024/25 compared to 2023/24. Global corn imports are projected to grow steadily through 2030/31 by 22.5 MMT for a total of 210.4 MMT with growing African demand (13.9 MMT) more than offsetting declines in demand from China (5.7 MMT).

Global corn imports



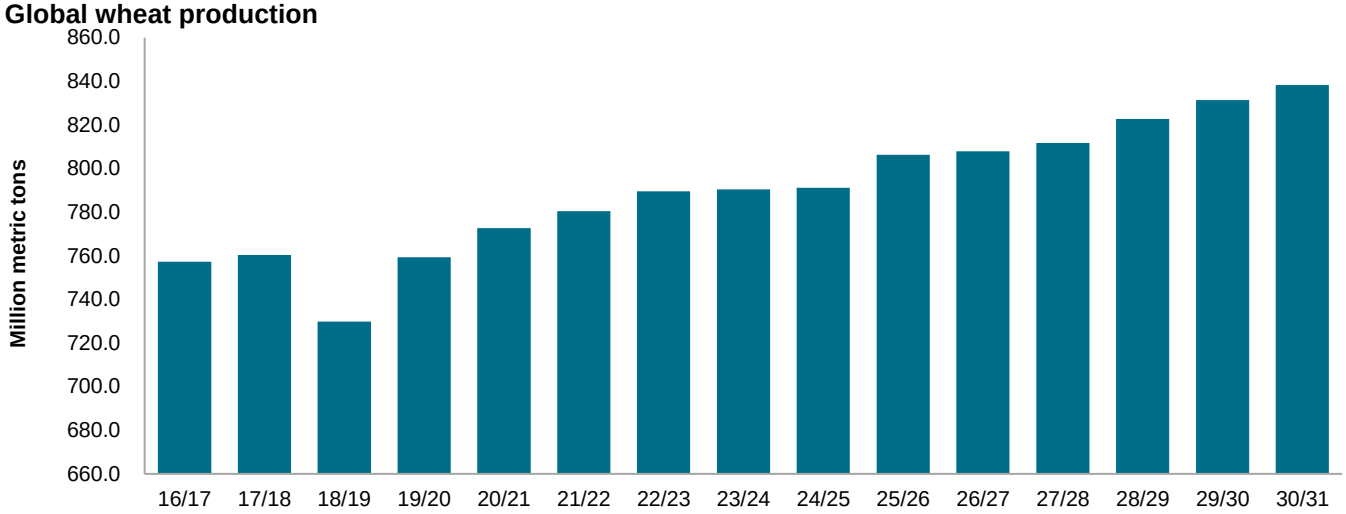
Source: S&P Global Commodity Insights.

World Wheat

Supply: Global wheat production remained steady in 2024/25, only increasing 0.8 MMT to a total of 791.2 MMT. While Canada, the US, and Argentina experienced strong harvests, this was offset by poor yields in Russia. Global

supplies of wheat are expected to grow by 47.1 MMT by 2030/31 to a total of 838.3 MMT with the main increases originating from the EU and Ukraine.

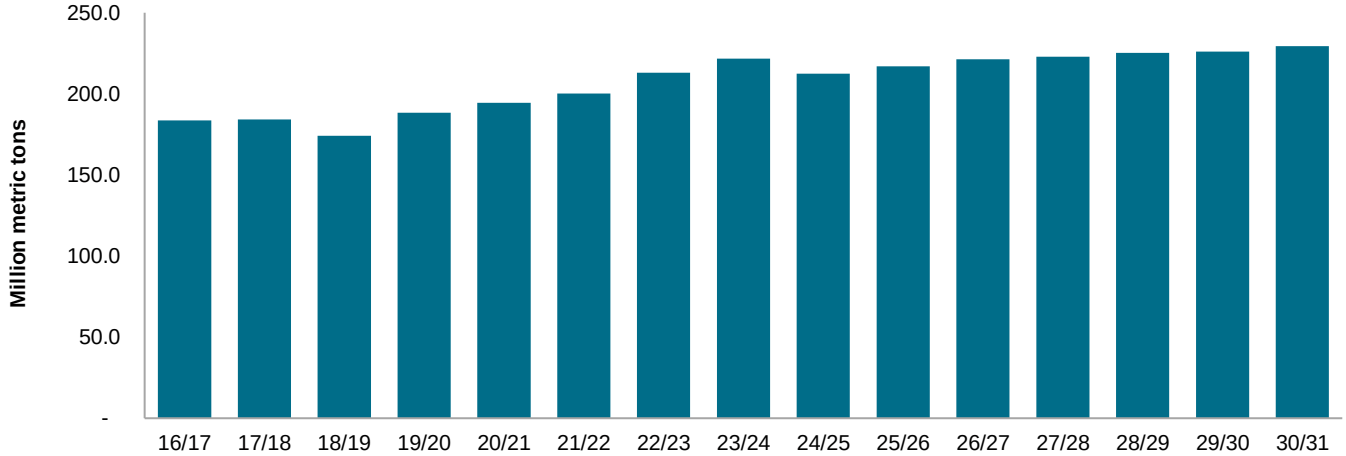
Global wheat production



Source: S&P Global Commodity Insights.

Demand: Global wheat imports declined by 9.6 MMT for a total of 212.4 MMT with the decline being driven by lower imports from China, Turkey, and Indonesia. While global imports are expected to increase to 229.3 MMT by 2030/31, it will be 2027/28 before global wheat imports surpass levels experienced in 2023/24.

Global wheat imports

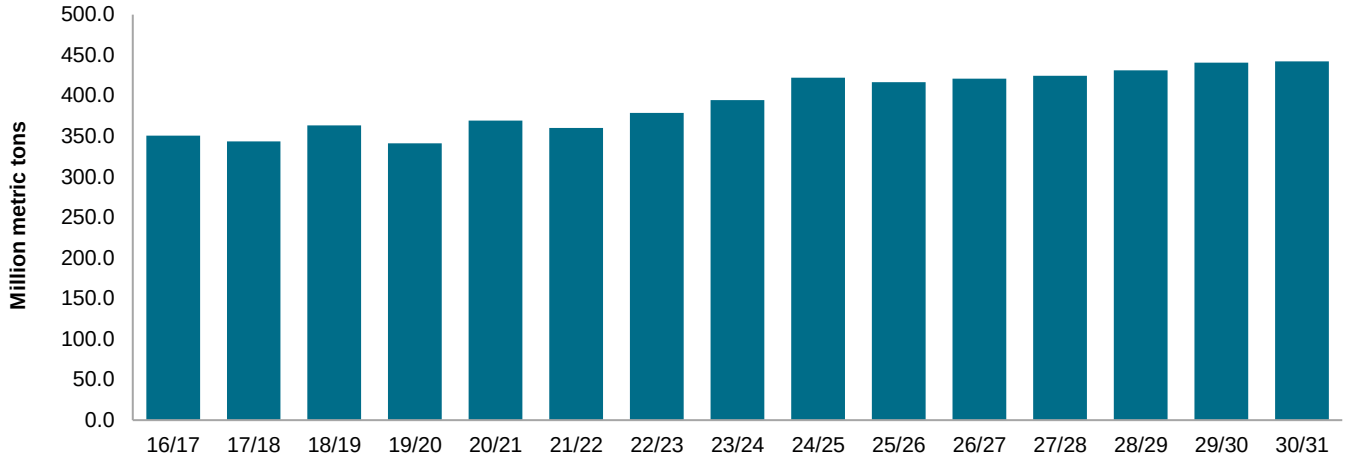


Source: S&P Global Commodity Insights.

Soybeans

Supply: Global soybean production product increased to 422.2 MMT in 2024/25, a 27.5 MMT increase from 2023/24. This increase in global production is being driven by increased supplies from Brazil, the US, and Argentina. Sustained acreage growth in LATAM, driven by Brazil, and increasing global yields will result in a forecasted global soybean harvest of 442.5 MMT in 2030/31.

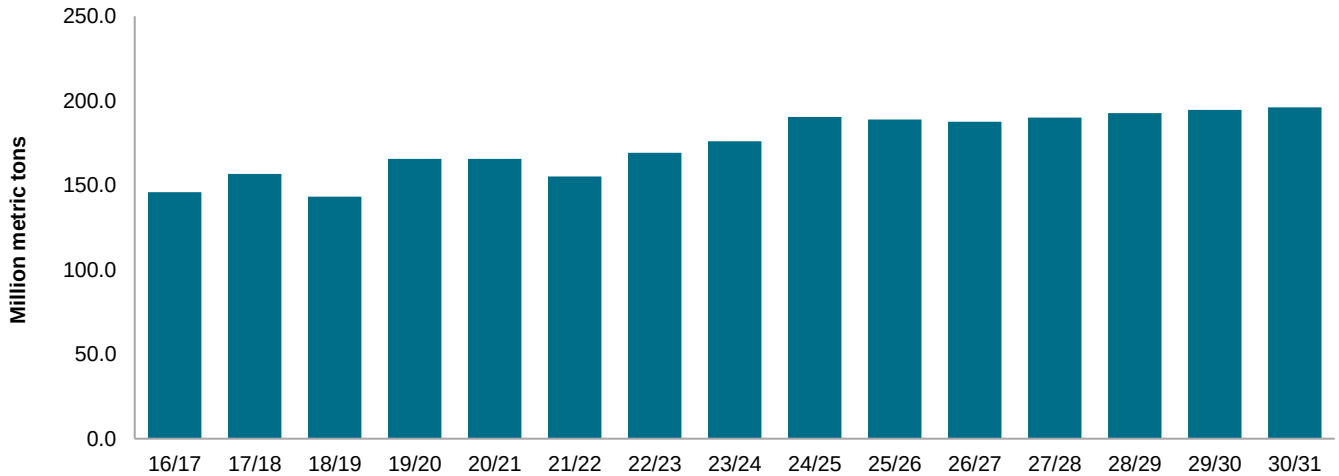
Global soybean production



Source: S&P Global Commodity Insights.

Demand: World soybean imports increased by 14.5 MMT in 2024/25 for a total of 190.4 MMT with the increases being concentrated in Europe, Eurasia, and Asia, although Chinese imports decreased. Imports are projects to remain relatively steady and grow slowly through to decade to a total of 196 MMT by 2030/2031.

Global soybean imports



Source: S&P Global Commodity Insights.

Farm Policy Considerations

US Farm Bill Negotiations

- While negotiations of the upcoming Farm Bill are ongoing, there are two notable points of consensus between the Senate and House versions of the Farm Bill advanced in the old Congress. First, while both would move IRA conservation funding to the Farm Bill permanently, the House Bill would remove the "climate friendly" guardrails that restrict the funding eligibility whereas the Senate Bill would keep them. Second, the Senate would limit USDA's use of Section 5 of the Commodity Credit Corporation (CCC)

regarding the discretionary use of CCC funds for 5 years versus 10 years in the House Agriculture Committee plan.

Other US policy concerns

- **Trump readying scores of executive orders.** President-elect Donald Trump is planning to issue several executive orders following his Jan. 20 inauguration, including ones that tighten border restrictions, complete unfinished portions of the border wall, initiate the mechanisms for mass deportations, and cut federal funding to sanctuary cities unless they comply with immigration enforcement. There are some concerns these policies could harm agriculture producers and meat packers.
- **Confirmation hearing for Rollins to head USDA set for Jan. 15.** The Senate Agriculture Committee has currently scheduled a Jan. 15 confirmation hearing for Brooke Rollins to become USDA Secretary, according to Politico. Rollins has received positive reviews from lawmakers she has met with as she seeks to secure support for taking over the top spot at USDA. However, nominees such as Robert F Kennedy Jr. as Health have drawn concerns from several lawmakers ahead of their confirmation hearings.
- Economists testifying before the Joint Economic Committee (JEC) last month indicated that US agriculture could see a hit of up to 10% of farm income if tariffs are imposed by the US on trading partners like Canada, Mexico, and China, the top three markets for US agricultural exports. History suggests that retaliatory measures by affected countries could negatively impact farmers and could see soybean prices fall nearly $1 per bushel while corn prices could fall $0.13 per bushel. However, it is likely that Trump may be using the threat of tariffs for negotiation purposes so the scope and longevity of tariffs may be mitigated.
- **Treasury announces 45Z credit details.** The Treasury Department has announced rulemaking for the 45Z Clean Fuels Production Credit (CFPC). The guidance initially does not include provisions for climate-smart agriculture practices that will be used to determine eligibility of corn, soybeans, or potentially other crops for the credit. USDA has an interim final rule under review at the Office of Management and Budget (OMB) on “Technical Guidelines for Climate-Smart Agriculture Crops Used as Biofuel Feedstocks.” The 45Z credit takes over as the main biofuel credit and will shift from being a blender credit which is the case with the biodiesel tax credit to one issued to the producer. Imported used cooking oil (UCO) will not qualify for the credit, but domestically produced UCO will be eligible.
- **Trump continues to threaten to take back Panama Canal**, complaining about the passage fees charged and China’s growing influence. However, Panamanian President José Raúl Mulino pushed back, calling sovereignty "nonnegotiable,” adding “every square meter” of the canal belonged to his country. In addition, Trump has made comments about incorporating Canada as part of the US, calling Canada “the future 51st State”, further straining relations.

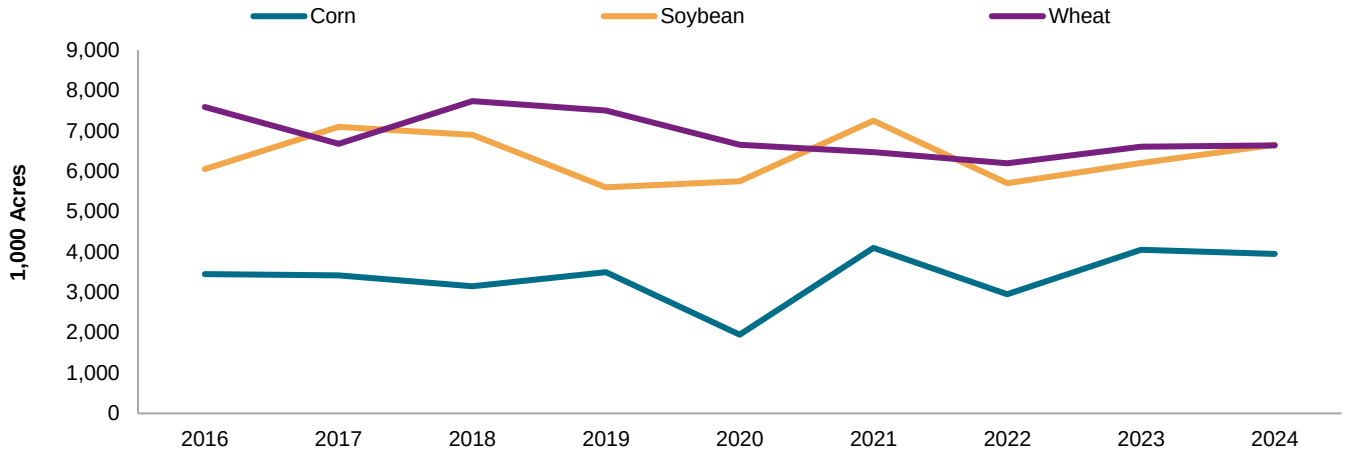
Mexico’s ban on GMO corn

- **USMCA panel sides with US in GMO corn complaint.** The decision found that Mexico's actions are in violation of its commitments under USMCA and that the measures are not based on science and undermine market access under USMCA. However, Mexican President Claudia Sheinbaum expressed confidence that the Mexican Congress will pass a ban on the planting of GMO corn in 2025.

North Dakota Crop Outlook

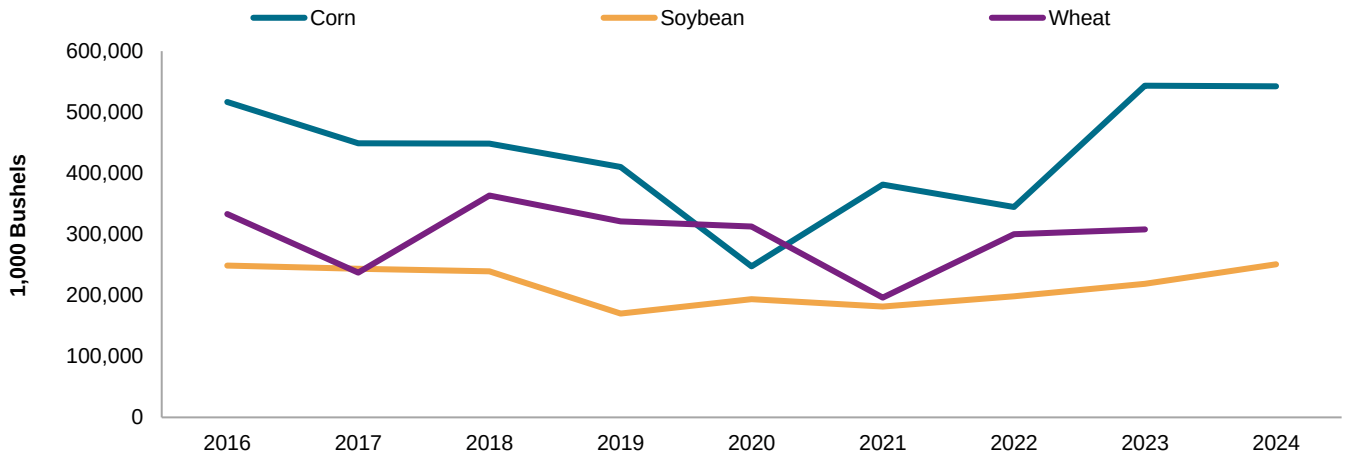
For 2024/25, North Dakota soybeans has slightly surpassed wheat in terms of acres planted by 10,000 acres. Corn acres planted decreased slightly year over year. Due to fewer acres planted corn production in North Dakota was lower in 2024 compared to 2023, but favorable yields made the kept the decline around 1 million bushels. Meanwhile, soybean production increased by 32 million bushels.

North Dakota crop plantings



Source USDA NASS.

North Dakota production by crop



Source: USDA NASS

IV. Deep Dive into the Tax Streams

To forecast the tax revenues for North Dakota, S&P Global Market Intelligence has developed custom econometric models for major sources of state tax revenue.

- The forecasted amounts are based on quarterly data with quarterly economic drivers associated with the underlying economic activity. The economic drivers were carefully selected after reviewing historical data and comparing economic data to the tax collections.

- Quarterly forecasts are aggregated into fiscal year totals and biennial totals.

Revenue Source	2021-23 Biennium Actual	2023-25 Biennium Forecast	2025-27 Biennium Forecast
Sales and use tax	***2,130,643,947***	***2,418,087,537***	***2,668,730,044***
		13%	***10%***
Motor vehicle excise tax	***308,681,830***	***345,666,551***	***361,315,283***
		12.0%	***4.5%***
Individual income tax			
Total individual income tax collections	1,348,172,563	1,121,315,536 *-16.8%*	1,195,168,022 *6.6%*
Transfer to refund reserve accounts	(409,400,000)	(329,297,204)	(253,000,000)
Net individual income tax collections	**938,772,563**	**792,018,332** ***-16%***	**942,168,022** ***19%***
Corporate income tax			
Total corporate income tax collections	608,247,251	631,300,107 *3.8%*	610,976,164 *-3.2%*
Transfer to refund reserve accounts	(75,500,000)	(80,000,000)	(104,000,000)
Net corporate income tax collections	**532,747,251**	**551,300,107** ***3%***	**506,976,164** ***-8%***

January 2025 Forecasts

Note: The percentages in the table reflect the change from the prior biennium

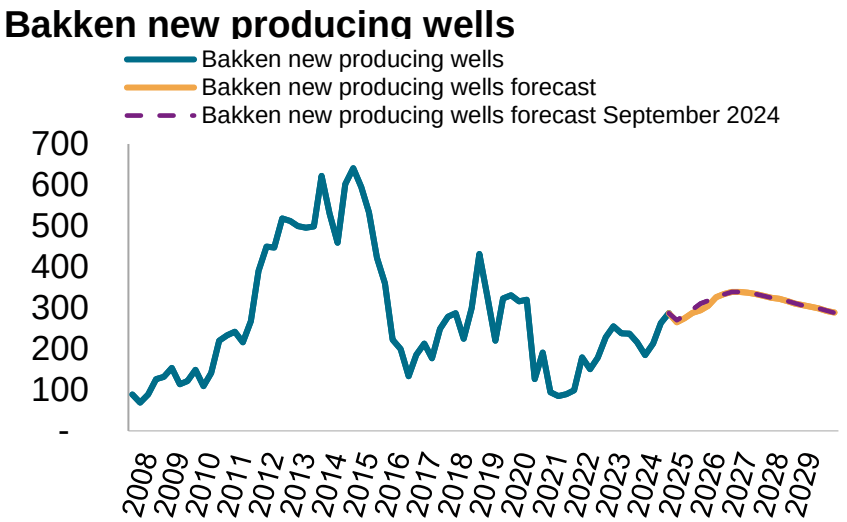
The specific market drivers and concept behind each of the forecasted tax steams are provided in detail below.

Sales and use tax

- First, the fifteen taxable sales sectors are modeled at the quarterly level and a forecast is produced for each sector. The sector forecasts are summed to a total taxable sales forecast. The tax rate is then applied to the total taxable sales forecast to calculate sales and use tax revenue.

- Most of the taxable sales sectors are driven by the energy sector. Of the fifteen taxable sales sectors, nine sectors have a strong correlation with (1) new producing wells in the Bakken play. These nine sectors are accommodation and food services, construction, financial services, manufacturing, mining and oil, miscellaneous, other services, transportation and warehousing, and wholesale trade. Since hitting lows in 2021 from the COVID-19 pandemic and global price wars, the well count in the Bakken has been recovering slowly. The number of new producing wells is expected to grow through 2024 before falling slightly in the outer years of

the forecast. The downward revision of the new producing wells forecast from January 2023 is due to the replacement of estimated data for 2023 and 2024 with actual history.

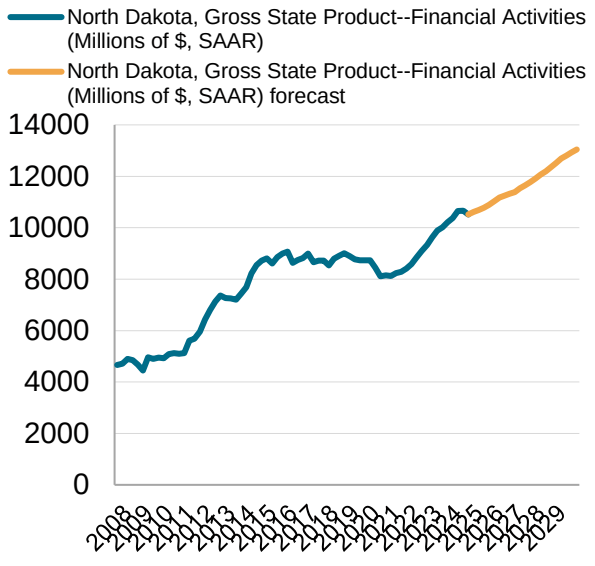


As of Jan. 2025
Source: S&P Global Market Intelligence.

- Another driver used in some of the sector-level equations is (2) gross state product in North Dakota by sector and can be found in the models for accommodations and food services, construction, education, health care, and social services, financial services, other services, professional services, arts and recreation, transportation and warehousing, wholesale trade, information industries and utilities.

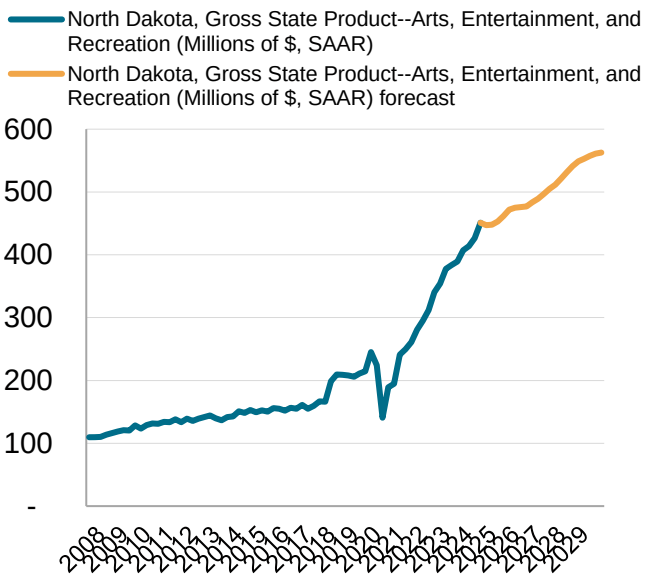
- In the third quarter of 2024, gross state product in all sectors grew relative to the previous year. The gross state product in the financial services sector experienced the largest growth of 15% year-over-year.

North Dakota, Gross State Product--Accommodation and Food Services (Millions of $, SAAR)



As of Jan. 2025.
Source: S&P Global Market Intelligence.

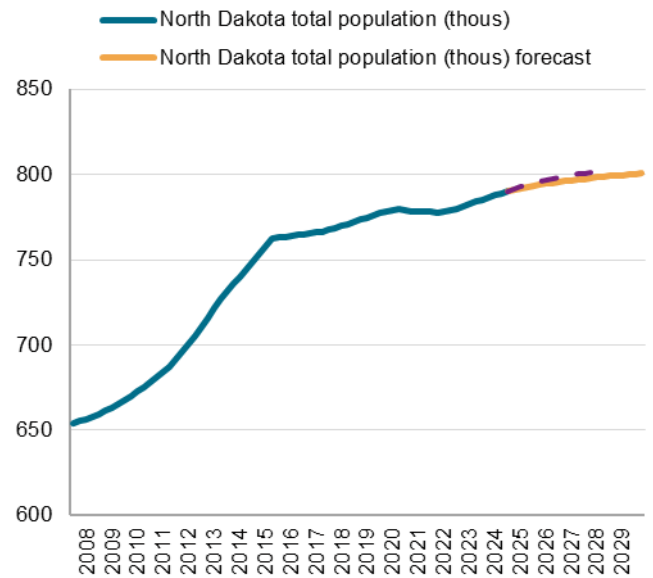
North Dakota, Gross State Product--Financial Activities (Millions of $, SAAR)



As of Jan. 2025.
Source: S&P Global Market Intelligence.

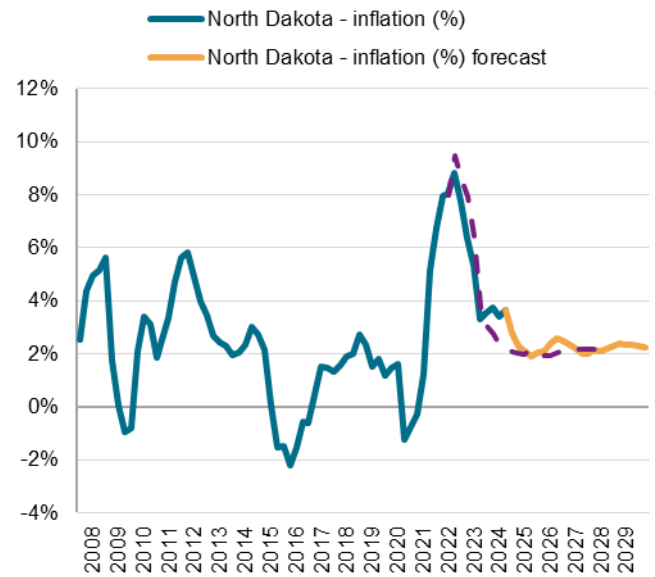
(4) Population and (5) inflation in North Dakota are the main driver for the retail trade taxable sales sector. S&P Global assumes per-capita purchases are stable and align with population growth. Inflation is assumed to have peaked in the second quarter of 2022 and will normalize to 2% in 2026.

North Dakota - total population



As of Dec. 2024
Source: S&P Global Market Intelligence.

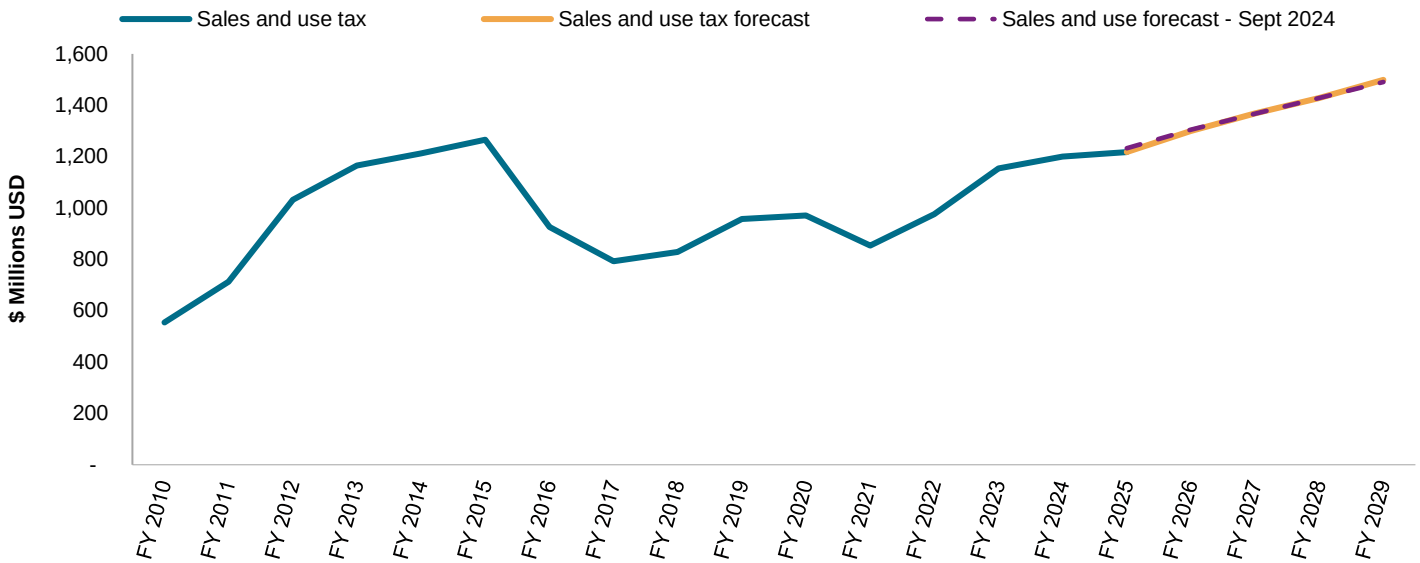
North Dakota - inflation



As of Dec. 2024.
Source: S&P Global Market Intelligence.

- After summing the sector-level taxable sales to a total and applying the 5% tax rate and 91.3% for transfer to the general fund, S&P Global forecasts 1.5% increase in sales and use tax in FY 2025, followed by 6.8% growth in FY 2026.

Sales and tax use forecast

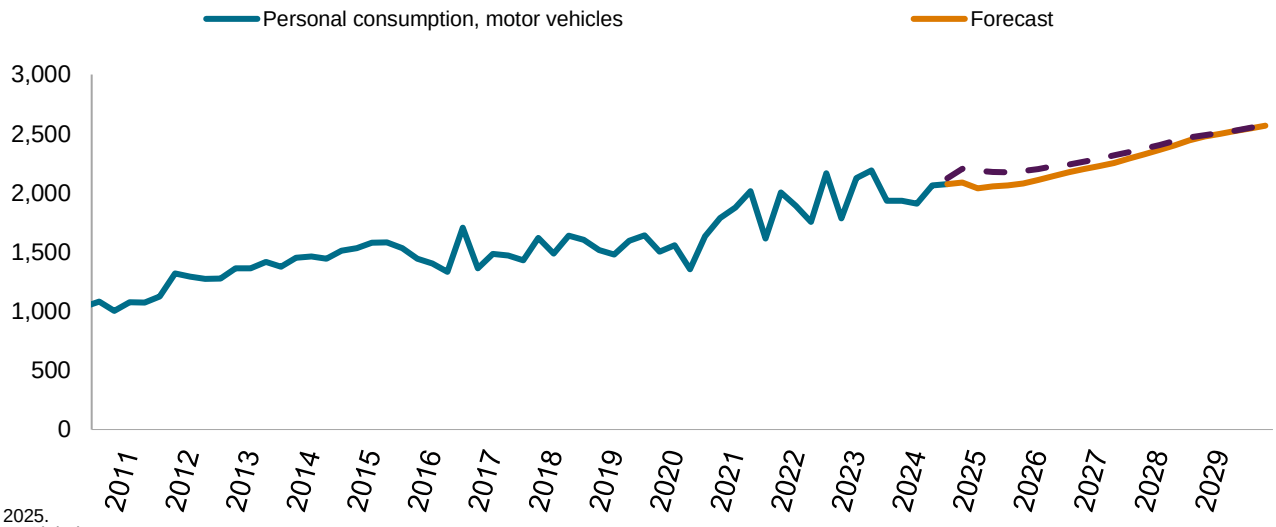


As of Jan. 2025
Source: S&P Global Market Intelligence.

Motor vehicle excise tax

> For motor vehicle excise tax, the main driver of the model is personal consumption of motor vehicles. After the initial shock of the COVID-19 pandemic, motor vehicle purchases recovered quickly and reached a high of $2.2 billion in late 2023.

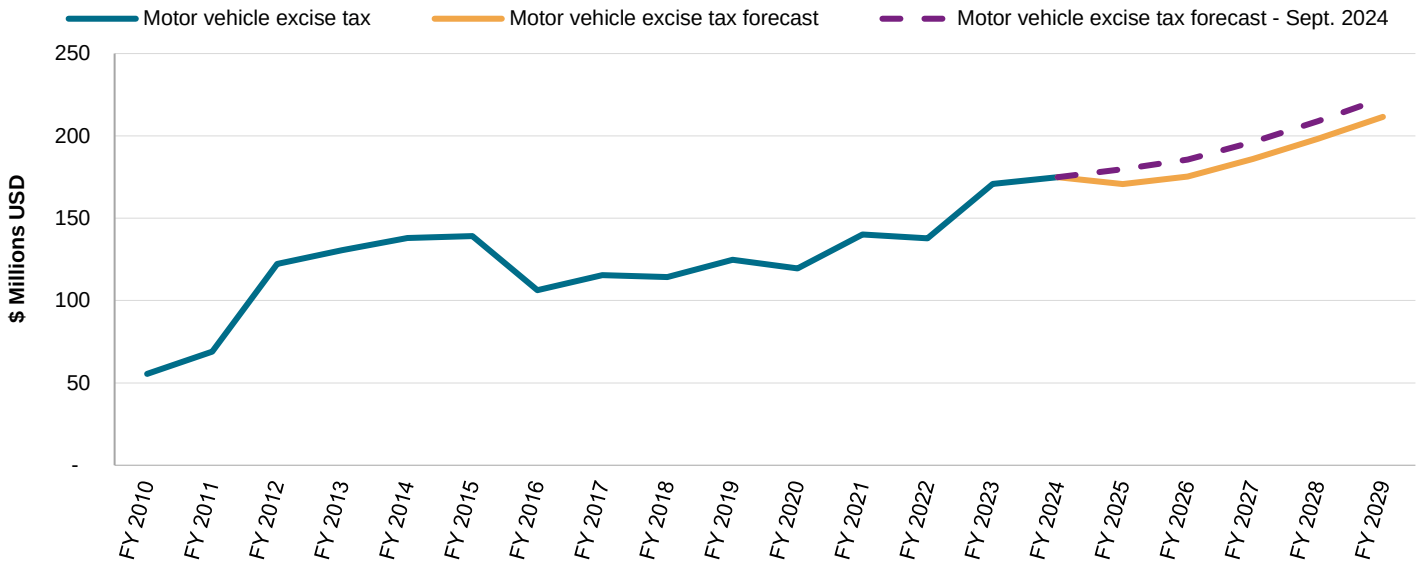
Personal consumption, motor vehicles



As of Jan. 2025.
Source: S&P Global

> The outlook for the motor vehicle excise tax in the upcoming years is mixed. A 2.4% decline is expected in FY2025 followed by growth of 2.7%, and 6.0% in FY 2026 and FY 2027 respectively. Beginning in FY2024, 50% of funds from the motor vehicle excise collections were directed to funds other than the general fund. For consistency with previous forecasts, the full amount of collections are included in the FY2024 history and forecast.

Motor vehicle excise tax forecast



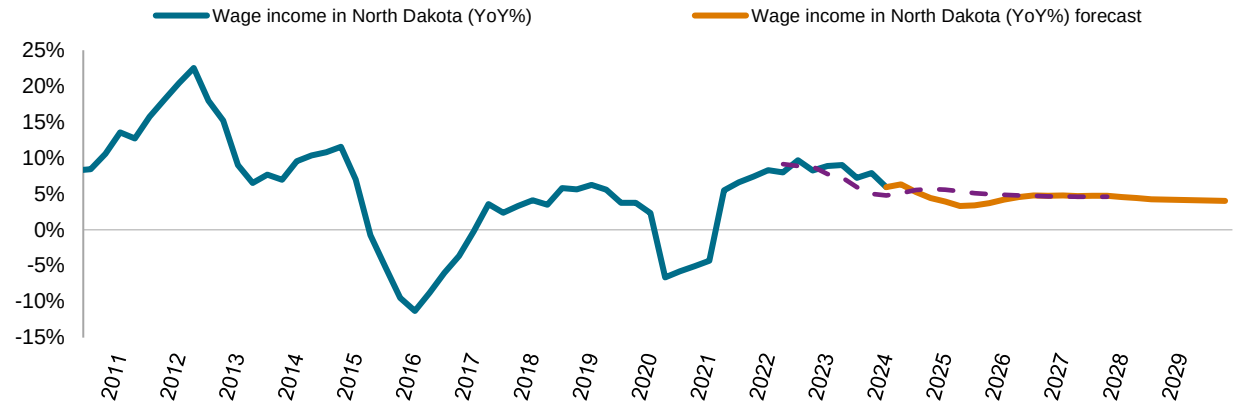
Note: Beginning in FY2024, approximately 50% of MV excise taxes were redirected from the general fund
Source: S&P Global Market Intelligence.

Individual income tax

> S&P Global built separate models for individual income tax submitted as withholdings versus as estimated payments to model and forecast individual income tax revenues.

> Our model for individual income tax submitted as withholdings has a single driver: (1) total wage income in North Dakota. As income withholding is relatively stable and largely driven by total wage income in the state, the elasticity of income withholding with respect to total income is approximately one. This means that one percent growth of wage income will translate to one percent of withholding. Wage income grew from a dip at the end of 2020 from the pandemic and peaks in 2022. Growth has gradually fallen from the high in 2022 and is expected to normalize between 4 and 5% in 2025.

Wage income in North Dakota (YoY growth)

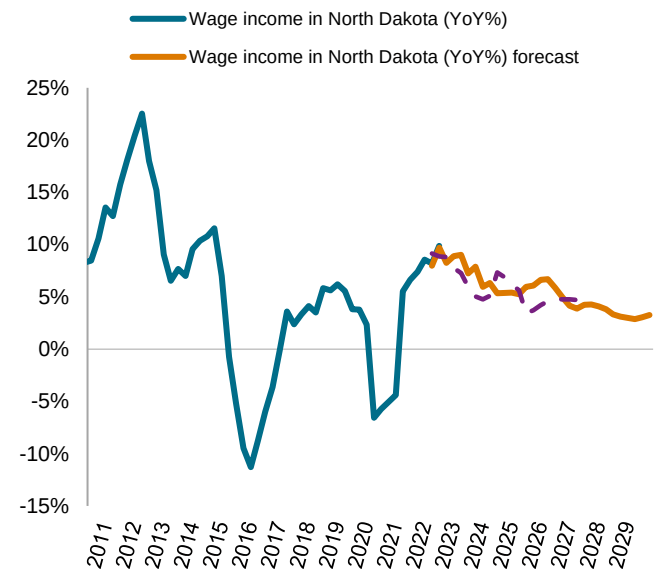


As of Dec. 2024.
Source: S&P Global

> The tax base of individual income tax submitted as estimated payments, on the other hand, is more volatile due to the nature of capital gains realization. That being said, a reasonable amount of variations in the tax base of individual income estimated payments is captured by changes in the (1) state's property income, i.e., personal rental income, personal dividend income, and personal interest income. State property income is the single driver for individual income tax submitted as estimated payments.

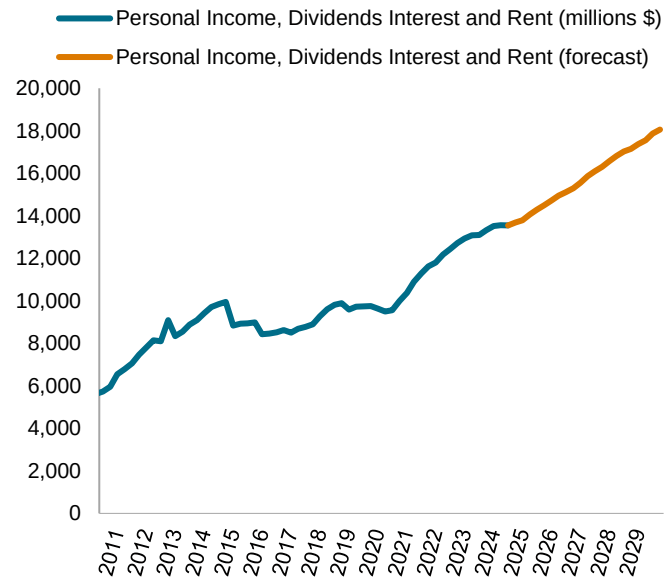
> Insight about the estimated transfer to reserve fund accounts was provided by NDLM. About 21.2% rounded to the nearest million of the gross individual income tax revenue at the annual level is transferred to the reserve fund account. The percentage is based on historical averages.

Wage income in North Dakota (YoY growth)



As of Jan. 2025.
Source: S&P Global

Personal Income, Dividends Interest and Rent (millions



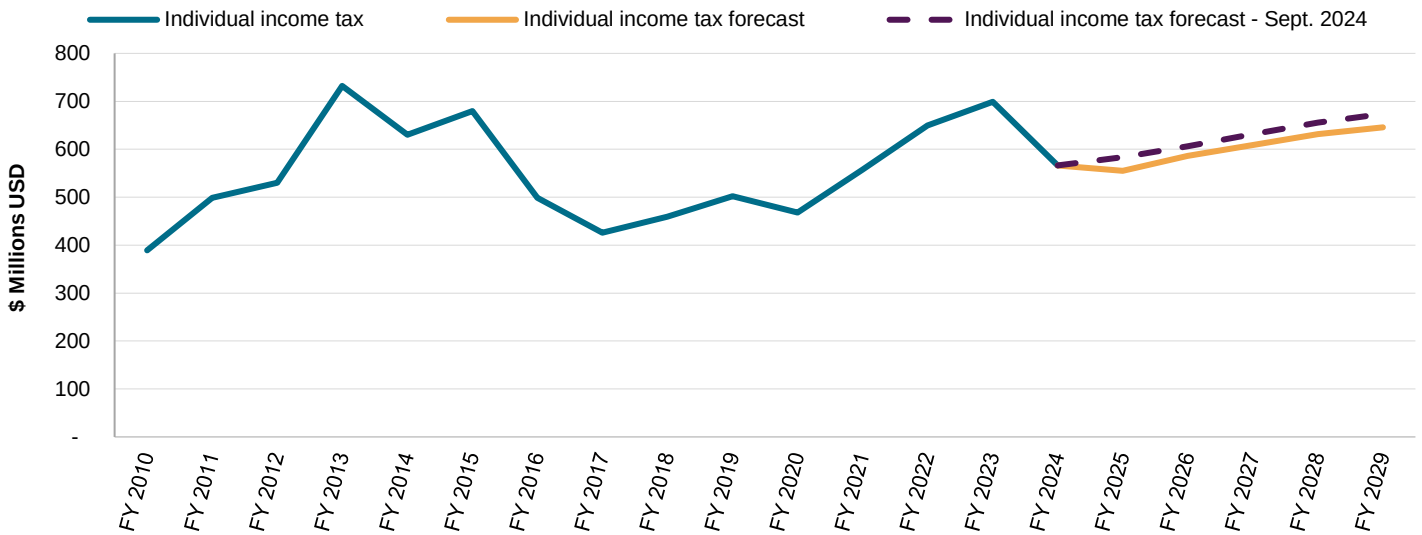
As of Jan. 2025.
Source: S&P Global

> In total, S&P Global projects the gross individual income revenue to decline in FY 2025 by 2.0% followed by growth in FY 2025 of 5.5% and growth in FY 2027 of 3.9%.

> Declines in gross and net individual income tax collections in FY 2024 reflect the updated tax structure resulting from the enactment of HB1158. Reforms included the elimination of the lowest tax bracket, combining and

reducing rates in the middle-income brackets, and reducing rates for the top income brackets. Following the declines in FY2024, S&P Global expects a return to steady, modest growth in years 2025 and beyond.

Individual income tax forecast

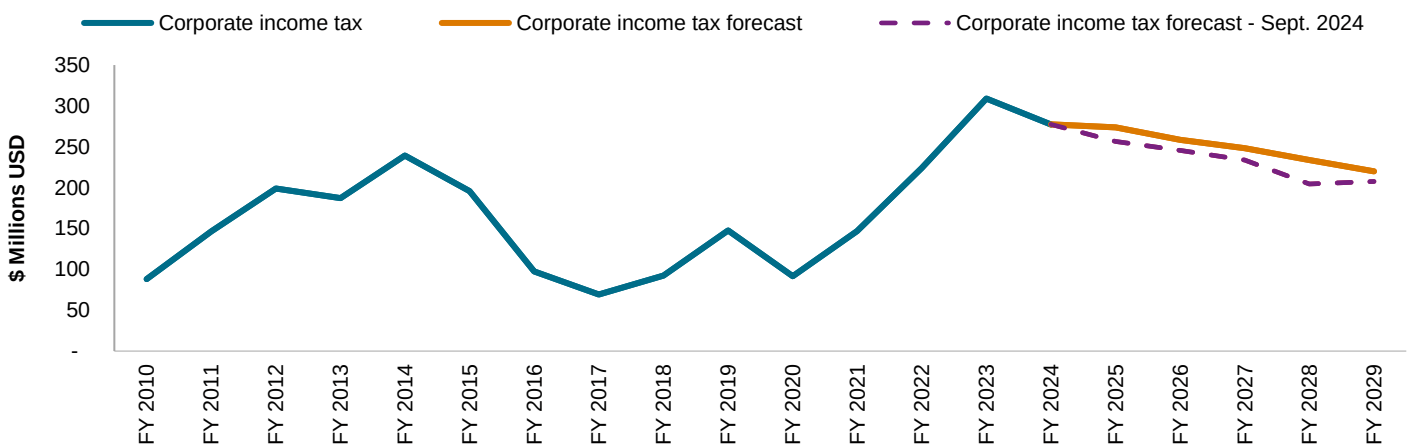


As of Jan 2025
Source: S&P Global Market Intelligence.

Corporate income tax

- The main driver of gross corporate income tax collections is (1) new producing wells in the Bakken play. The well counts are used as an indicator of the well-being of oil companies. The new producing well count in the Bakken had dropped during the pandemic and has slowly been recovering the past few years. In the forecast, Bakken new wells are expected to rise through the forecast horizon, though still below levels seen pre-pandemic.
- Insight about the estimated transfer to reserve fund accounts was provided by NDLM. About 16.9% rounded to the nearest million of the gross corporate income tax revenue at the annual level is transferred to the reserve fund account. The percentage is based on the historical average.

Net Corporate Income Tax forecast



As of Jan 2025
Source: S&P Global Market Intelligence.

> A decline of 1.3% in FY 2025 followed by declines of 5.6% in FY 2026, and 3.9% in FY 2027 are estimated for net corporate income tax collections in the forecast update.

V. Scenarios

Given the significant fiscal impacts of oil price variations in North Dakota, S&P Global customizes high/low scenarios. In the baseline case, OPEC+ effectively manages supply to support prices and mainland China returns to growth. In the optimistic case, the banking sector remains resilient, funding robust growth. The strength of the scenario early on is due to a robust reacceleration in consumer spending, thanks to a lower path of energy prices and to faster credit expansion. The price of Brent oil stays $4 below baseline through mid-2025 before converging to baseline. Consumer spending rises 2.6% on average over 2024 and 2025, versus increases of 2.3% and 1.9%, respectively, in the baseline. In the pessimistic case, a shallow recession occurs as tightening lending standards restrain spending and production. The price of Brent oil rises to $115 per barrel by second quarter of 2025, $37 higher than the baseline. PCE inflation is higher than the baseline early on, but subsequently falls below baseline in late 2025 and remains soft through 2028 because of elevated slack in labor markets.

Revenue Source	2023-25 Biennium Baseline	2023-25 Biennium Optimistic	2023-25 Biennium Pessimistic
Sales and use tax	2,418,087,537 *13.5%*	2,485,101,125 *16.6%*	2,315,970,452 *8.7%*
Motor vehicle excise tax	345,666,551 *12.0%*	358,268,307 *16.1%*	326,763,916 *5.9%*
Net individual income tax	792,018,332 *-15.6%*	833,731,343 *-11.2%*	731,503,174 *-22.1%*
Net corporate income tax	551,300,107 *3.5%*	579,030,488 *8.7%*	525,578,574 *-1.3%*

Revenue Source	2025-27 Biennium Baseline	2025-27 Biennium Optimistic	2025-27 Biennium Pessimistic
Sales and use tax	2,668,730,044 *10.4%*	2,828,238,921 *13.8%*	2,236,337,608 *-3.4%*
Motor vehicle excise tax	361,315,283 *4.5%*	397,446,811 *10.9%*	307,117,991 *-6.0%*
Net individual income tax	942,168,022 *19.0%*	1,030,284,523 *23.6%*	758,382,891 *3.7%*
Net corporate income tax	506,976,164 *-8.0%*	603,987,085 *4.3%*	425,788,851 *-19.0%*

Note: The percentages in the table reflect the change from the prior biennium

VI. Disclosures

The forecasts included in this report, including, but not limited to, those regarding tax revenues, are estimates, which have been prepared on the basis of certain assumptions and hypotheses. No representation or warranty of any kind is or can be made with respect to the accuracy or completeness of, and no representation or warranty should be inferred from, these forecasts. The tax revenue forecast contained in this report is based upon assumptions as to future events and, accordingly, is subject to varying degrees of uncertainty. Some assumptions inevitably will not materialize and, additionally, unanticipated events and circumstances may occur. Therefore, for example, actual tax revenues inevitably will vary from the forecasts included in this report and the variations may be material and adverse.

CONTACTS

The Americas

+1 877 863 1306

Europe, Middle East & Africa

+44 20 7176 1234

Asia-Pacific

+852 2533 3565

CustomerCare@ihsmarkit.com

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