

# Tenth District Economic Update

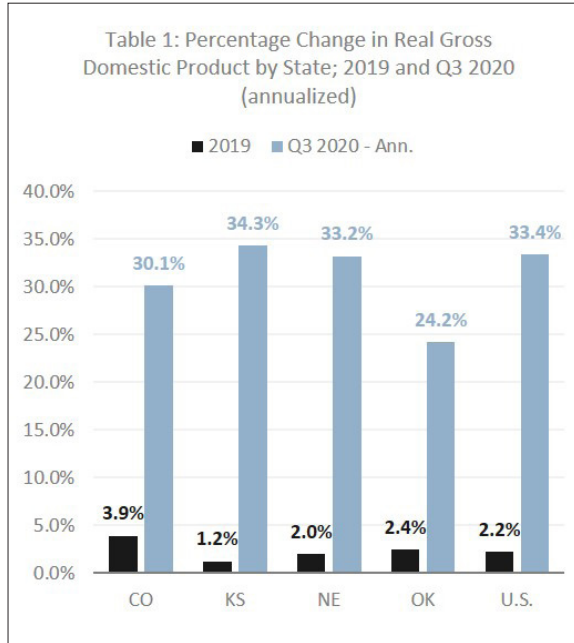
**Quarterly Report / Q4 2020**

**Prepared by:** Strategic Planning and Member Solutions

*Data as of Tuesday, Jan. 5, 2021 — See footnotes for source and data release information*



# Fourth Quarter Economic Growth



\*Tenth District includes Colorado, Kansas, Nebraska and Oklahoma

Third quarter Real Gross Domestic Product (GDP) growth rates among Tenth District\* states reflect a reversal of the negative trend from the previous quarters.

At 3.9% GDP growth in 2019, Colorado was the fastest growing state in the District and third fastest in the US. With major contributing sectors among those more heavily impacted by COVID, Colorado has been slower to bounce back. Given its major housing, construction and population growth, expect Colorado to boom once the U.S. economy returns to full strength.

Though less capable of the highs experienced by more tech-driven

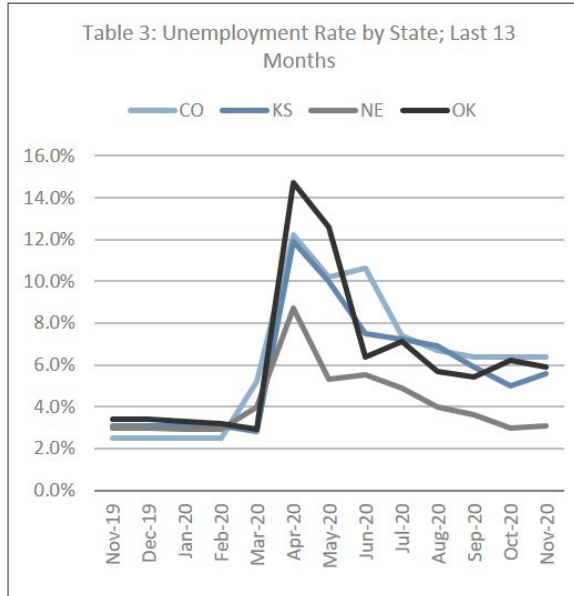
states like Colorado, ag- and manufacturing-centric states like Kansas and Nebraska also tend to avoid the negative pull of a sluggish U.S. economy. At 34.3% and 33.2% annualized GDP growth in Q3, Kansas and Nebraska are near the national average.

The fourth and final state in the District derives much of its growth potential from the energy sector. Typically Oklahoma's growth will mirror the demands for oil and gas. With curbed demand resulting from hamstrung commercial and personal transportation, Oklahoma's GDP dropped to 47th in Q3.



Source: U.S. Bureau of Economic Analysis (BEA) – Gross Domestic Product by State, Third Quarter 2020  
 Next Release: March 26, 2021 – Gross Domestic Product by State (Q4 and Year 2020 [preliminary] data)

# Fourth Quarter Employment & Labor



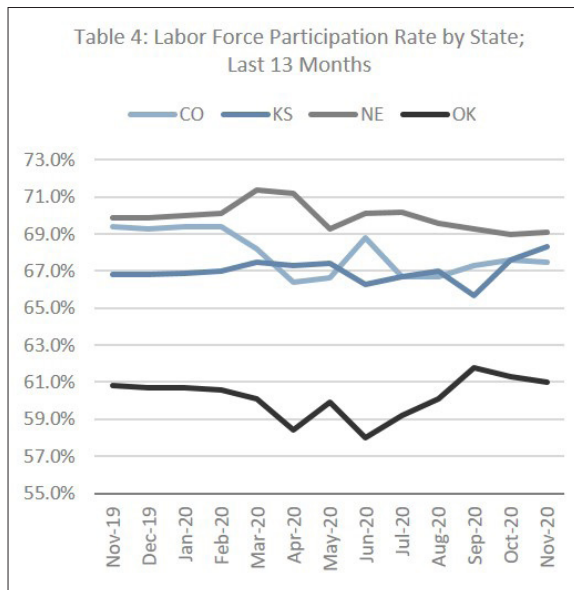
Colorado, with the lowest unemployment rate in the District throughout late 2019, finds themselves at the top after the dust has begun to settle from COVID-19. At 6.4%, Colorado’s unemployment rate has jumped 3.9% year-over-year (YoY) and year-to-date (YTD).

Like their economic growth figures, Kansas and Nebraska have fared better than their District peers in terms of unemployment. Kansas ranks second in the District at 5.6%, up 2.5% YoY and YTD.

With 3.1% unemployment, Nebraska is up 0.1% YoY and 0.2% YTD, Nebraska is tied with Vermont for the lowest unemployment rate in the U.S.

After peaking at 14.7% unemployment in April 2020, Oklahoma is down to 5.9% in November 2020. On a YoY basis, Oklahoma’s unemployment rate is up 2.5%.

All four District states are below the national average of 6.7% (as of November 2020).



In terms of labor force participation rate (LFP), Colorado has seen the greatest decline in the District during the past year. At 67.5% in November 2020, Colorado has dropped 1.9% YoY and YTD.

Kansas has seen the greatest improvement in LFP, up YTD (1.5%) and YoY (1.4%), and currently ranks second in the District and the U.S. at 68.3%.

Nebraska’s strength in unemployment has also

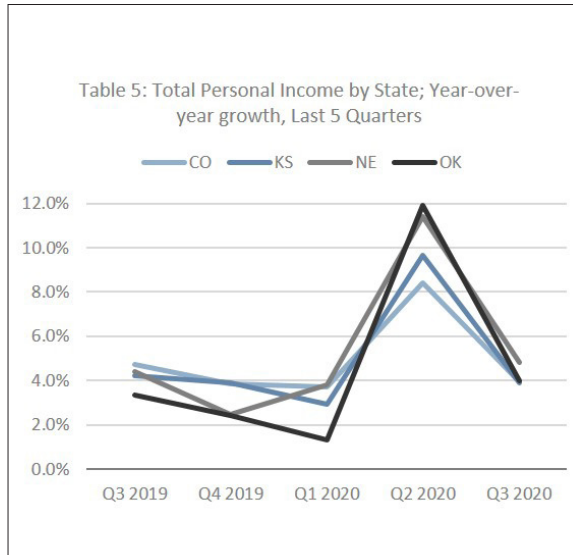
translated to a strong participation rate. Down 0.9% YTD and 0.8% YoY, Nebraska is first in the District and the U.S. at 69.9%.

Though up 0.3% on a YTD basis and 0.2% YoY, Oklahoma still trails the rest of the District by a wide margin at 61.0%.

The nationwide rate in November 2020 was 61.5% (down 1.9% YTD and 1.7% YoY).

Source: U.S. Bureau of Labor Statistics (BLS) – Civilian Noninstitutional Population and Associated Rate and Ratio Measures for Model-Based Areas, November 2020  
 Next Release: Jan. 26, 2021 – State Employment and Unemployment (December 2020 data)

# Fourth Quarter Wage Measure



Total personal income is defined by the U.S. Bureau of Economic Analysis as the income people receive from wages, proprietors' income, dividends, interest, rents and government benefits.

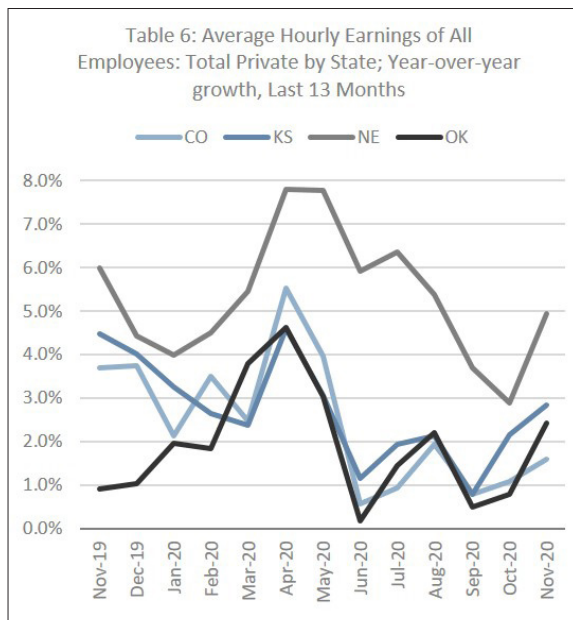
Knowing the Fed's target inflation rate is 2.0%, any personal income growth less than that level would be problematic for the workers in that state.

Fortunately for the District, all four states have continued

to trend between 2.4% and 11.9% annual growth over the past five quarters except Oklahoma in Q1 2020 (1.3%). All four states are also trending within 0.8% of where they were one year ago.

Colorado and Kansas are down 0.8% and 0.3% YoY to 3.9%, respectively. Nebraska is up 0.4% (to 4.8%), and Oklahoma is up 0.6% (to 4.0%) in the same time period.

YoY growth for the U.S. in Q3 2020 was 7.1%.



Average hourly earnings (AHE), as defined by the U.S. Bureau of Labor Statistics reflect not only changes in basic hourly and incentive wage rates but also such variable factors as premium pay for overtime and changes in output of workers paid on an incentive plan. They also reflect shifts in the number of employees between relatively high-paid and low-paid work and changes in workers' earnings in individual establishments.

Earnings differ from wage rates in that earnings are the actual return to the worker for a stated period while wage rates are the amount stipulated for a given unit of work or time. Earnings do not measure the level of total labor costs on the part of the employer because benefits,

irregular bonuses, retroactive items and payroll taxes paid by employers are excluded.

Understanding that the Fed adjusts monetary policy based on a 2.0% inflation target, maintaining 2.0% growth or greater in respect to AHE is paramount for workers.

Before COVID, all four states were sitting above 4.5%. The bottom dropped out during the first half of 2020 with YoY growth below 1.1% for Colorado, Kansas and Oklahoma. Both Kansas and Oklahoma have recovered to 2.8% and 2.4% respectively, but Colorado remains below the 2.0% watermark at 1.6%. Nebraska has managed wages well, maintaining a YoY growth rate above 2.9% throughout 2020.

Sources: U.S. Bureau of Economic Analysis (Personal Income) and U.S. Bureau of Labor Statistics (Average Hourly Earnings)  
 Next Releases: Jan. 29, 2021 (Personal Income); Jan. 8, 2021 (Average Hourly Earnings)

# Interest Rates and FOMC Policy

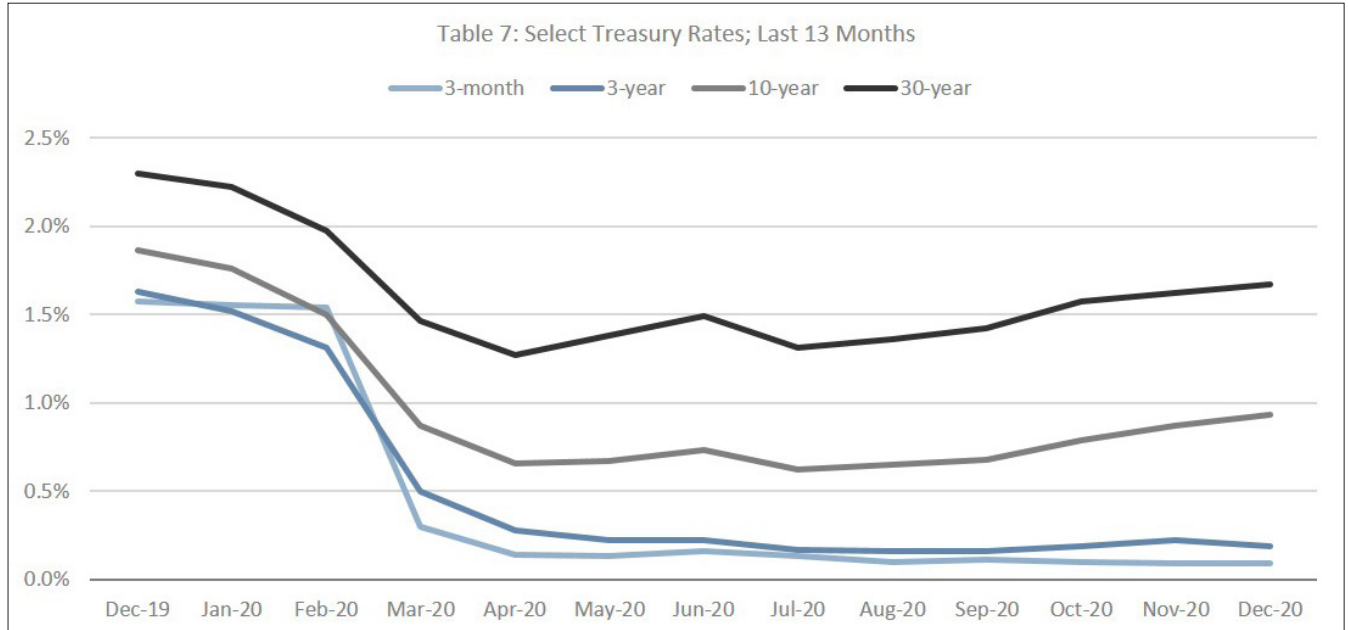


Table 8: Federal Funds Rate: Midpoint of target range or target level (Percent)

	2020	2021	2022	2023	Longer Run
3.125					
3.000					2
2.875					
2.750					1
2.625					
2.500					8
2.375					1
2.250					3
2.125					
2.000					1
1.875					
1.750					
1.625					
1.500					
1.375					
1.250					
1.125				1	
1.000					
0.875					
0.750					
0.625				1	
0.500					
0.375			1	3	
0.250					
0.125	17	17	16	12	
0.000					

Seen as a precursor to a slowdown, the first post-Great Recession U.S. Treasury curve inversion occurred in late March 2019.

As evidenced in Table 7, an inversion reoccurred in early 2020 with the 10-year rate dropping below the three-month rate in February 2020. Following the longest expansion in U.S. history (10 years, 8 months), the COVID recession has lasted 11 months.

After a normalization in March 2020, the curve has seen little movement on the lower end while long maturities have started to creep up.

The key spread to follow is

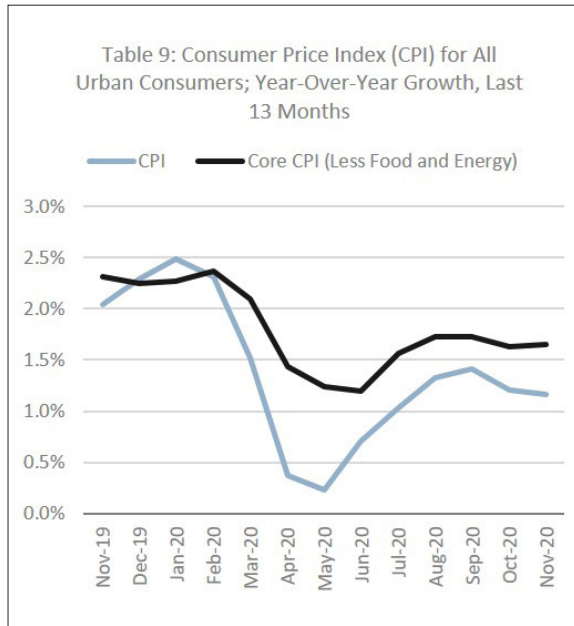
between the two- and 10-year Treasuries. The relationship between these two rates speaks to the market's sentiment regarding the U.S. economy's long-term health. After tanking to 0.12% in late February 2020, the spread between these two rates has slowly improved to 0.90%.

The Federal Open Market Committee (FOMC) doesn't like to trick the market, so rate moves are typically priced in well before the announcement date. As detailed in Table 8, the majority of committee members don't expect to leave zero-bound rates until after 2023 (as of the December 2020 meeting).

Source: Board of Governors of the Federal Reserve System – Interest Rates & Federal Open Market Committee (FOMC) Projections materials, December 2020  
 Next Summary of Economic Projections Release: March 16-17, 2021



# Prices: Consumer Inflationary Measure



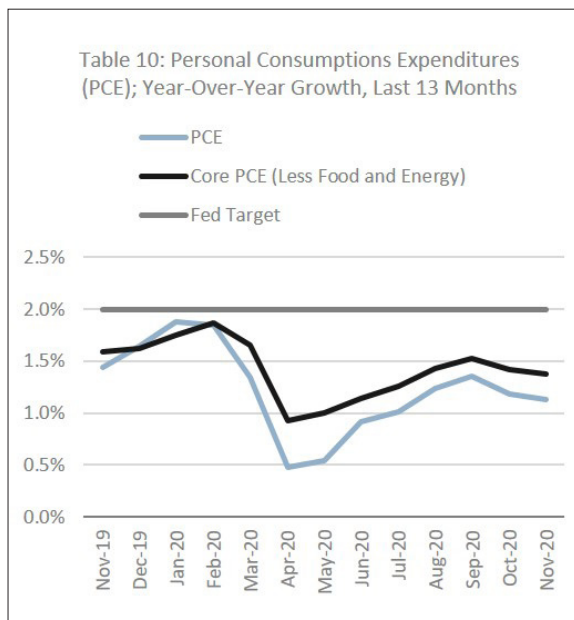
In measuring the purchasing value of the U.S. dollar, two indices rise above the rest — the Consumer Price Index (CPI) and the Personal Consumptions Expenditures (PCE). Both track the price level of a basket of goods, but they differ in a myriad of ways including the weights applied to different items in the basket, accounting for changes in the basket and simply what items are included in the basket.

Historically the higher of the rates, CPI attempts to capture the cost of what households

are buying. Once the preferred measure of the FOMC, CPI is tracked by the BLS.

At the height of COVID, “headline” CPI has seen a sharp decline. This index differs from the “core” measure in that it includes the more volatile prices of food and energy.

When gauging the general direction of the economy, the core figure is more often used. However, milk and gasoline are essential purchases in every household, so it’s important to monitor both versions of the index.



The second and more often cited inflationary measure is the Personal Consumptions Expenditures index.

Based on surveys of business sales, the Fed targets 2.0% for the core measure when setting monetary policy. In August 2020, an adjustment was made to how the measure will be interpreted allowing for inflation to run higher than the standard 2.0% target before hiking interest rates.

The new approach has been

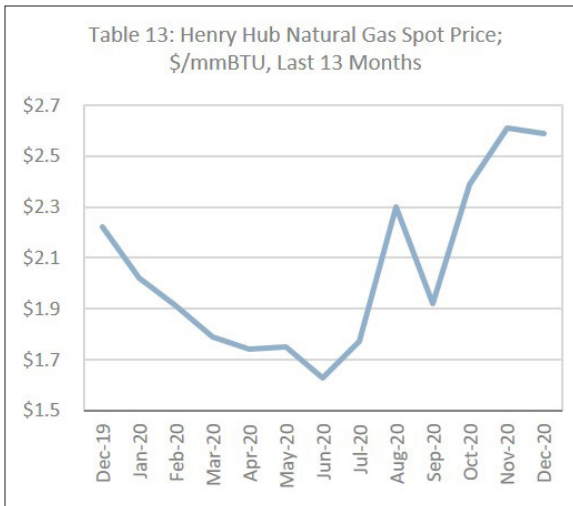
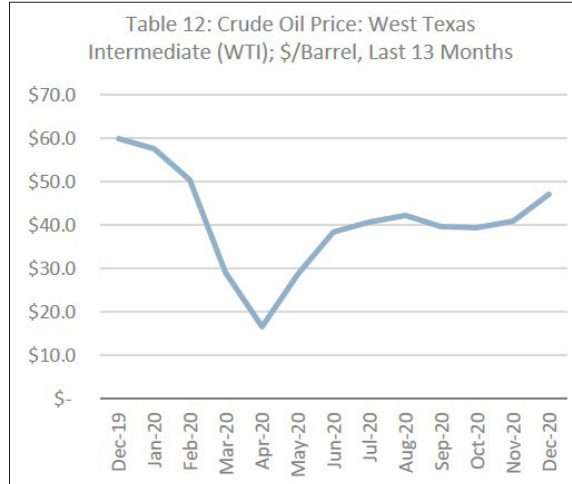
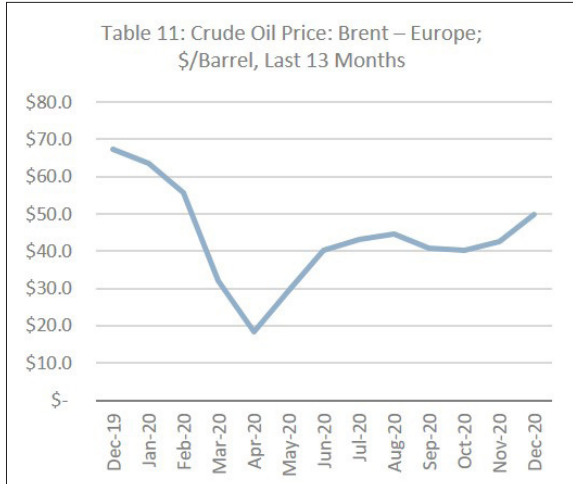
coined as “average inflation targeting”.

After trending up to near the 2.0% Fed target in late 2019 and early 2020, core PCE dropped significantly by April 2020 down to 0.9%.

Though some of that loss has been recouped in recent months, the consistently low inflation level should be of some concern to an FOMC looking to keep interest rates near zero through 2023 and beyond.

Source: U.S. Bureau of Labor Statistics (CPI) and U.S. Bureau of Economic Analysis (PCE), November 2020  
 Next CPI Release: Jan. 13, 2021 (December 2020 data)  
 Next PCE Release: Jan. 29, 2021 (December 2020 data)

# Prices: Energy



Two different prices of crude oil are generally tracked by those monitoring the energy sector: Brent (European) and West Texas Intermediate (WTI). A number of factors can contribute to differences between the prices, including extraction and production, shipping and storage costs, content quality and politics such as trade tensions.

Thus, it is important to look at both figures rather than the global price of oil alone to get an accurate depiction of the energy landscape.

Currently, Brent is trading at about a \$3 premium to WTI. Both have followed a similar trend, reaching a peak around December 2019 before plummeting through April 2020.

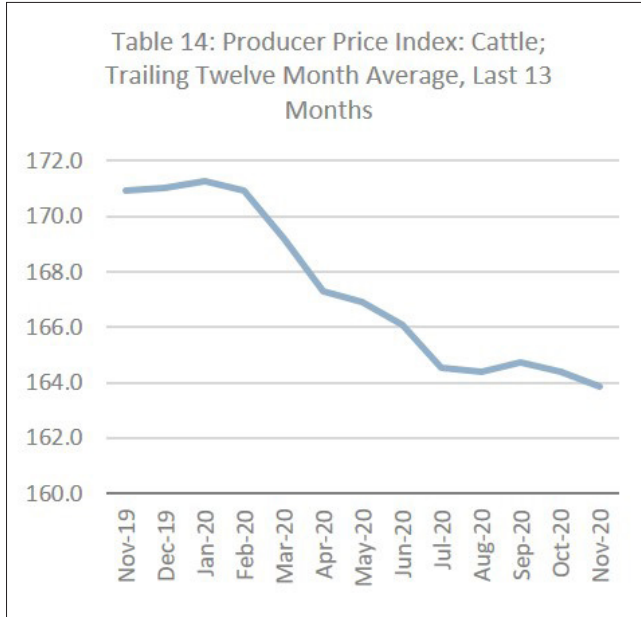
Both recouped ~50% of lost value before flattening during the summer and fall of 2020. Lack of personal and commercial demand has been the major price driver with expectations for a successful vaccine rollout causing a recent uptick.

Often reflective of simple demand dynamics, the price of natural gas typically peaks in the winter months and idles in the summer. The past year has been indicative of this trend with the spot price per million BTU's dropping to below \$1.70 in June 2020 before seeing a rapid increase to more than \$2.50 by December 2020.

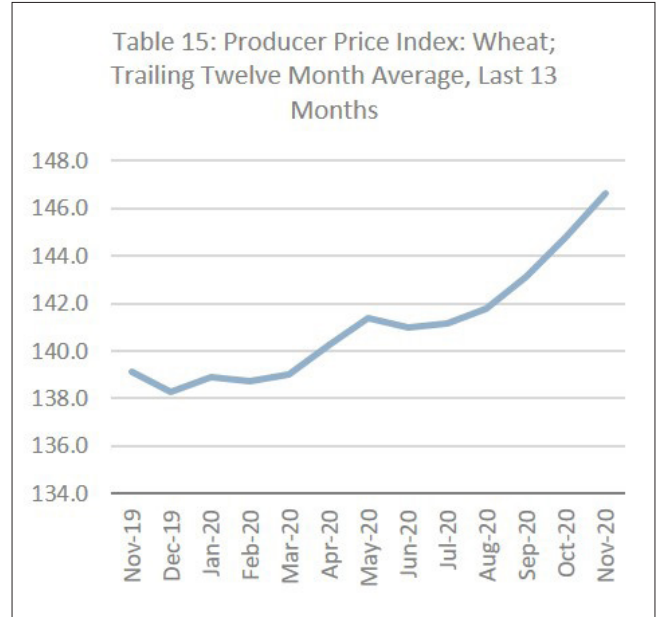
Expect the increased price to remain over the next few months as winter temperatures take hold.

Source: U.S. Energy Information Administration – Spot Prices (available daily)

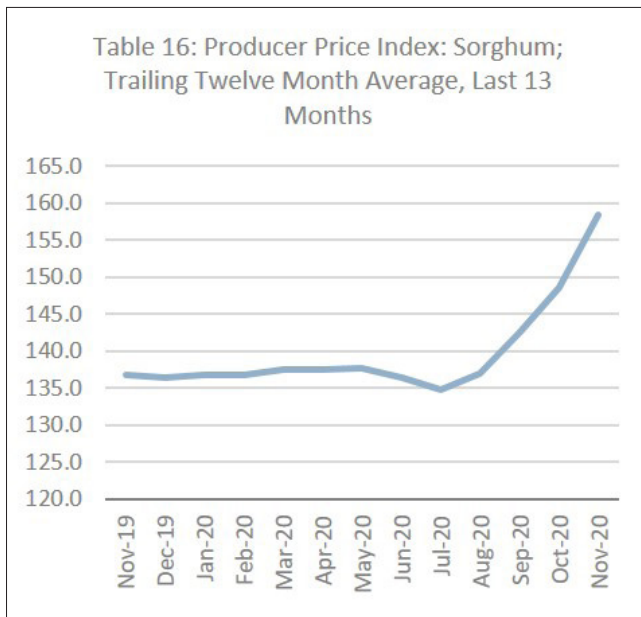
# Prices: Farm & Agriculture



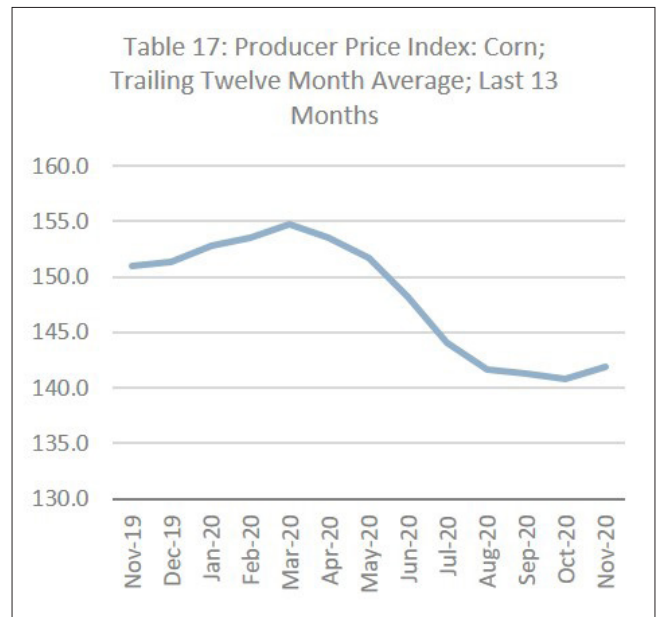
Tenth District state rankings in U.S. cattle production: 2nd Nebraska, 3rd Kansas, 5th Oklahoma, 10th Colorado



Tenth District state rankings in U.S. wheat production: 1st Kansas, 5th Oklahoma, 7th Colorado (Nebraska no in top 10)



Tenth District state rankings in U.S. sorghum production: 1st Kansas, 4th Nebraska, 6th Oklahoma (Colorado not in top 10)



Tenth District state rankings in U.S. corn production: 3rd Nebraska, 7th Kansas (Oklahoma and Colorado not in top 10)

Source: U.S. Bureau of Labor Statistics – Producer Price Indices, November 2020  
 Next Release: Jan. 15, 2021 (December 2020 data)



# Prices: Housing



Table 18 depicts the All-Transactions House Price Index (HPI) by state for the District.

According to the U.S. Federal Housing Finance Agency, the HPI is a broad measure of the movement of single-family house prices. The HPI is a weighted, repeat-sales index, meaning that it measures average price changes in repeat sales or refinancings on the same properties.

Data is obtained by reviewing repeat mortgage transactions on single-family properties whose mortgages have been purchased or securitized by Fannie Mae or Freddie Mac since 1975.

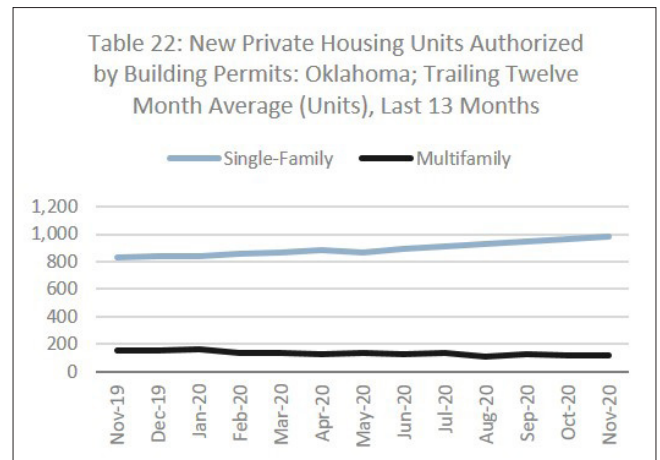
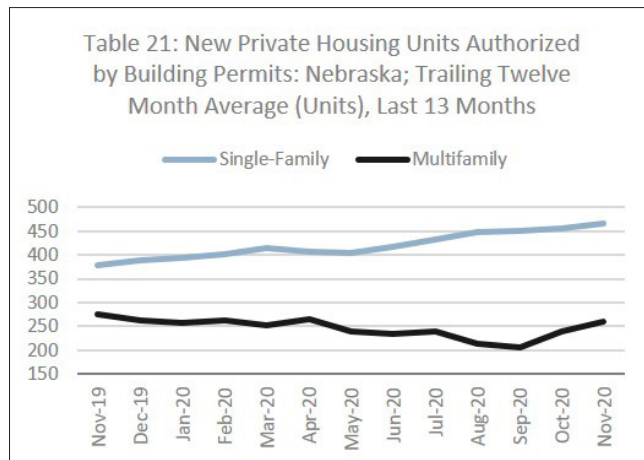
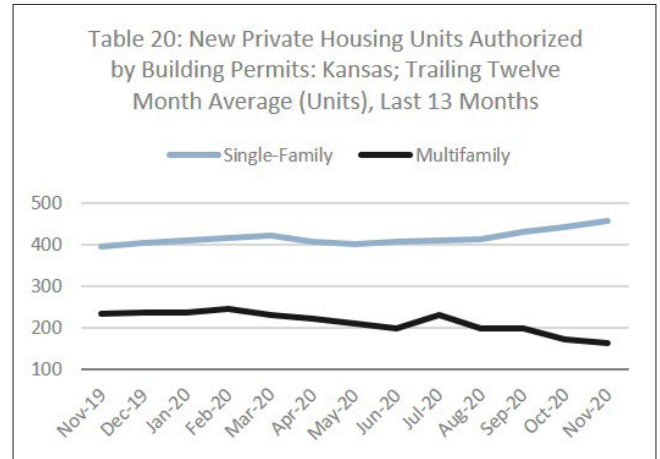
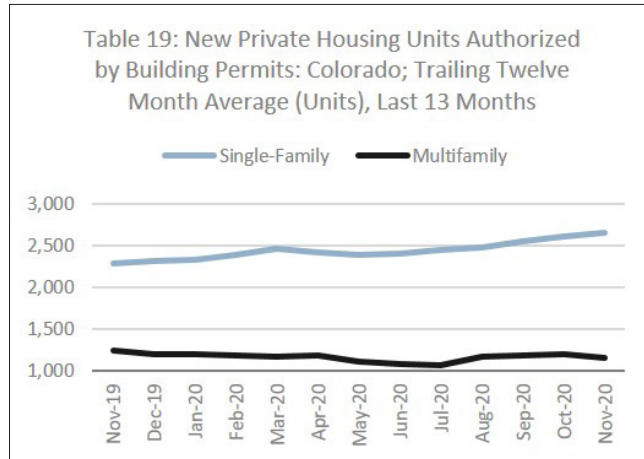
After three of our four District states dipped in Q2 2020, all District states saw an uptick in their respective HPI in Q3 2020 including the highest reading over the past 5 quarters in Kansas.

Colorado had already ceased being the hottest housing market in the District with YoY housing price growth dropping below all District peers in Q4 2019. However, they’ve seen some recovery during the past two quarters and currently sit second at 3.7%.

In the third quarter of 2020, the U.S. on a whole saw 4.7% YoY growth, higher than all four states in the District.

Source: U.S. Federal Housing Finance Agency – House Price Indices, Q3 2020  
 Next Release: Feb. 23, 2021 (Q4 2020 data)

# Fourth Quarter Housing Numbers



Tables 19-22 depict single-family and multifamily housing units authorized by building permits for each state in the District.

According to the U.S. Census Bureau, these numbers provide a general indication of the amount of new housing stock that may have been added to the housing inventory. Since not all permits become actual housing starts and starts lag the permit stage of construction, these numbers do not

represent total new construction but should provide a general indicator on construction activity and the local real estate market. Authorized permits can vary greatly from month to month, so a trailing twelve month average is used to provide a general trend.

Most notable in the District is Colorado accounting for more than half of all building permit authorizations on both a single- and multifamily basis throughout the past year.

Another notable trend is the growing disparity between single-family and multifamily housing. YoY, the difference between single-family and multifamily permits has grown in all four District states.

The biggest disparity in percentage of total authorized permits between single- and multifamily exists in Oklahoma where more than 80% of all permits comes from single-family authorizations.

Source: U.S. Census Bureau Building Permits Survey – November 2020  
 Next Release: Jan. 28, 2021 (December 2020 data)

