

ECONOMIC OUTLOOK

QUARTERLY REPORT

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Abstract

The Economic Outlook quarterly report uses the North Dakota Forecast Model developed by the NDSU Center for the Study of Public Choice and Private Enterprise to predict economic trends for the state of North Dakota and its three largest metropolitan statistical areas: Fargo, ND-MN; Bismarck, ND; and Grand Forks, ND-MN. The model uses past trends and empirical relationships in data to predict (forecast) future trends. These forecasts focus on key economic indicators such as wage growth, labor force participation, unemployment, and the housing price index. Like all forecast models, this method faces limitations and the specific values in the forecast should not be direct cause for decision-making. Rather, forecasting provides information about what is possible and can help establish expectations. The Economic Outlook report is released each quarter with updated data from the forecast model.

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Introduction

The Center for the Study of Public Choice and Private Enterprise has developed a forecast model to showcase the economic outlook for the state of North Dakota and its three largest metropolitan statistical areas: Fargo, ND-MN; Bismarck, ND; and Grand Forks, ND-MN. This report details the results of the model for the first quarter of 2021 (2021q1).

The forecast focuses on key economic indicators such as wage growth, labor force participation, unemployment, and the housing price index. The data used to create these forecasts come primarily from the St. Louis Federal Reserve. Each figure illustrates the model's projections with each panel showing both the actual forecast and the 90% confidence interval around the forecasted number. A 90% confidence interval shows the upper and lower limits of the projections with 90% certainty. This means that, statistically, we can be 90% confident that the value in the given quarter will fall between the upper and lower CI limits. Interconnected variables are incorporated into the model to demonstrate how state-level conditions impact predictions for metropolitan areas and how commodity price projections impact economic conditions. All projections are based on the trends of the past few quarters. As explained below, a forecast model does not and cannot account for unforeseen factors and changes that may affect economic performance. For more information about the North Dakota Forecast Model, see the accompanying technical appendix.

Limitations

Forecasting has long been a mainstay in the field of economics. It conveys much needed information about the world and trends in economic variables that can be useful for public and private decision-makers. However, it is important to acknowledge the limitations of any forecast. There are many reasons a forecast model may not produce correct predictions. The model uses historical data and past trends to predict (forecast) future trends. As a result, unexpected changes in economic conditions, public policy or other factors may disrupt the accuracy of the forecasts. Similarly, the model cannot incorporate all of the complexity and uncertainty surrounding an economic system.

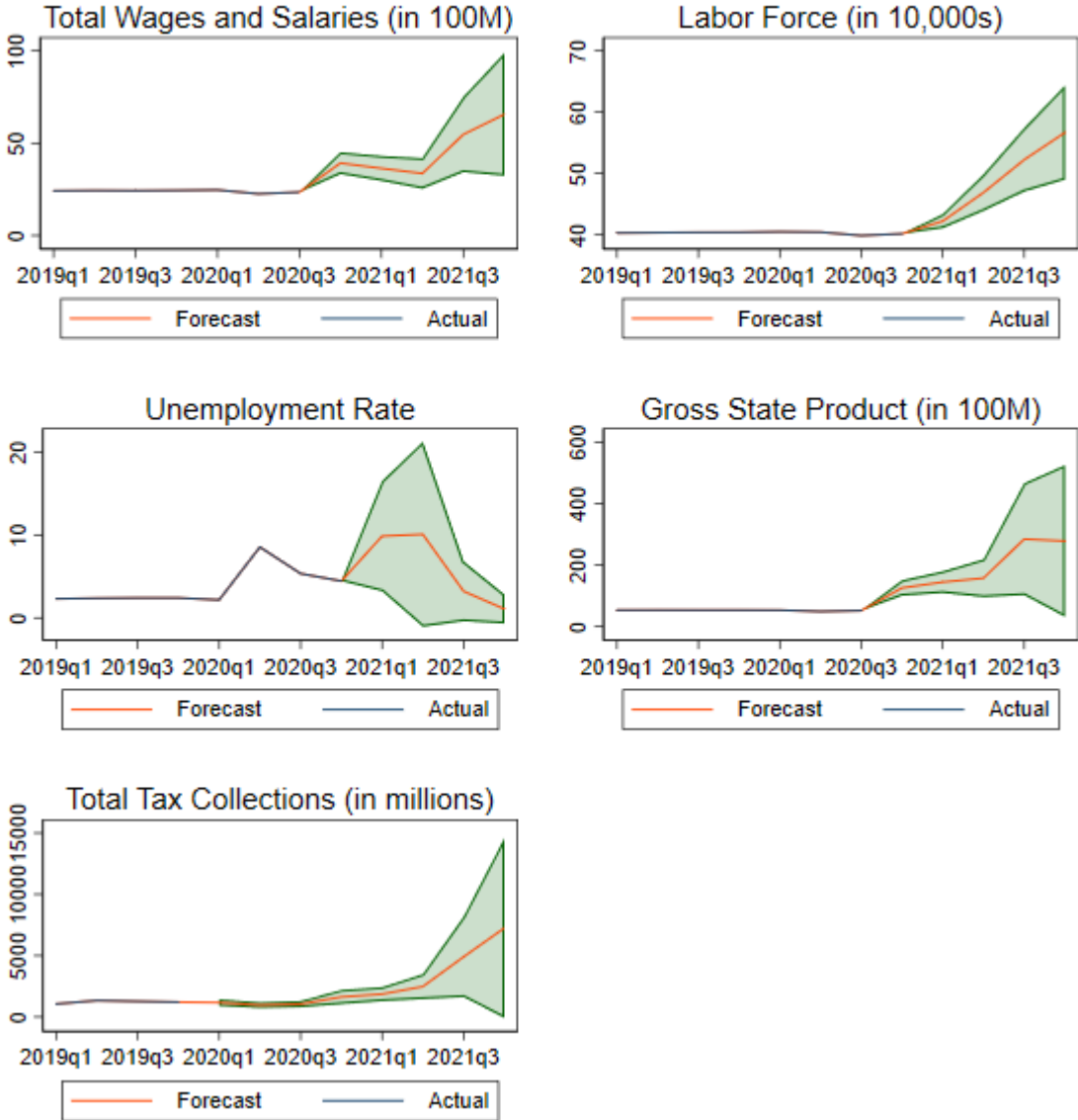
Key Points

- The North Dakota outlook shows signs of economic recovery and growth in the coming months. This includes increases in wages and gross state product, a growing labor force, and higher total tax collections. The unemployment rate shows the possibility of increasing, demonstrating lingering difficulties in the labor market. Similar effects can be seen for the metro areas, with variances between different regions of the state.
- This report represents forecasts based on the most recently available data when the model was run in February 2021. (For some series, the most recently available data is from 2019.) These forecasts serve as a projection for how the economy will respond to current economic conditions based on historical data and trends.

Quarterly Outlooks

Figure 1

North Dakota Quarterly Outlook



North Dakota Outlook

The overall economic outlook for the state has moderately improved amidst recovery from the COVID-19 pandemic. The most recent data presents a continuation of the improvement in the economic outlook shown in the previous report (2020q4).

Total wages and salaries are expected to show growth in the fourth quarter of 2020 (2020q4), which then levels off into the first two quarters of 2021 (2021q1, 2021q2). Later in 2021, the model shows the potential for large amounts of growth in total wages and salaries, but this is also met with increasing uncertainty demonstrated by a widening confidence interval. The labor force is poised for strong growth through 2021. However, as the labor force is forecast to grow, so is the North Dakota unemployment rate. The unemployment rate is projected to increase early in 2021, albeit the forecast has a very wide confidence interval, before falling later in 2021. This corresponding projected increase in the labor force and year-over-year decline in the unemployment rate show that a labor market recovery from the pandemic is possible. North Dakota's gross state product (GSP) increased over 5% in the third quarter of 2020 (2020q3), the most recent quarter with data available. GSP is forecast to experience consistent growth into the fourth quarter of 2020 (2020q4) and on through 2021. The model itself forecasts impossibly high rates of growth, which are a good sign for a return to growth for North Dakota but should be moderated in our own expectations. This improvement mirrors the general trend in the national gross domestic product (GDP) shown in the National Outlook section. The most recent official available data for North Dakota tax collections come from 2019. The model still predicts a significant downward trend for tax collections in 2020. However, the model is predicting growth in total tax collections following the forecast trend in GSP. However, it should be noted that the confidence interval surrounding the forecast tax collections gets very large demonstrating continuing uncertainty of the economic reaction to the pandemic economy. 2020 data on tax collections should be available for the next quarterly report.

Alternative Scenarios for North Dakota

Because the North Dakota economy is heavily tied to petroleum extraction, we produced forecasts for the state under several different scenarios for the WTI price of crude oil to compare against the baseline path for crude oil as set by the forecast model. Scenarios for the path of the WTI crude price were: the upper bound of the 90% confidence interval, a 10% quarterly growth rate, a 10% quarterly decay, and the lower bound of the 90% confidence interval.

Figure 2 replicates the panels in Figure 1 with the addition of a graph for the different WTI price scenarios. Each line represents the path of forecasted variables under the different price scenarios.

Figure 2

North Dakota Quarterly Outlook - Alternate Scenarios

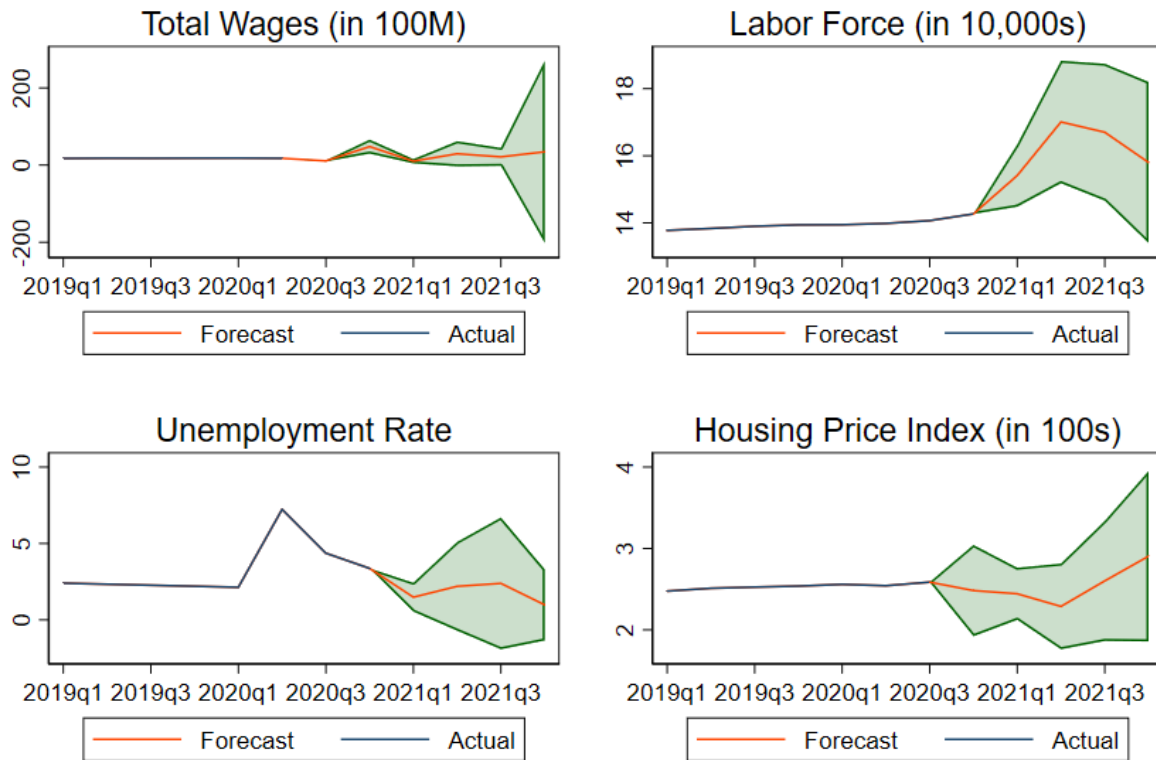


Alternative Outlooks

These graphs demonstrate that North Dakota’s current economic path is relatively independent of trends in the price of crude oil. The greatest impact for the state is on total tax collections, but even there, the state fares well even in the worst-case scenario for the price of WTI crude. The red lines in Figure 2 represent the worst-case scenario with the WTI price falling to the 90% lower bound of its projected confidence interval (a near zero price). The green line represents the 90% upper bound of its projected confidence interval. The maroon line represents a 10% rate of decay for the WTI price, and the dark blue line represents a 10% growth rate.

Figure 3

Fargo Quarterly Outlook

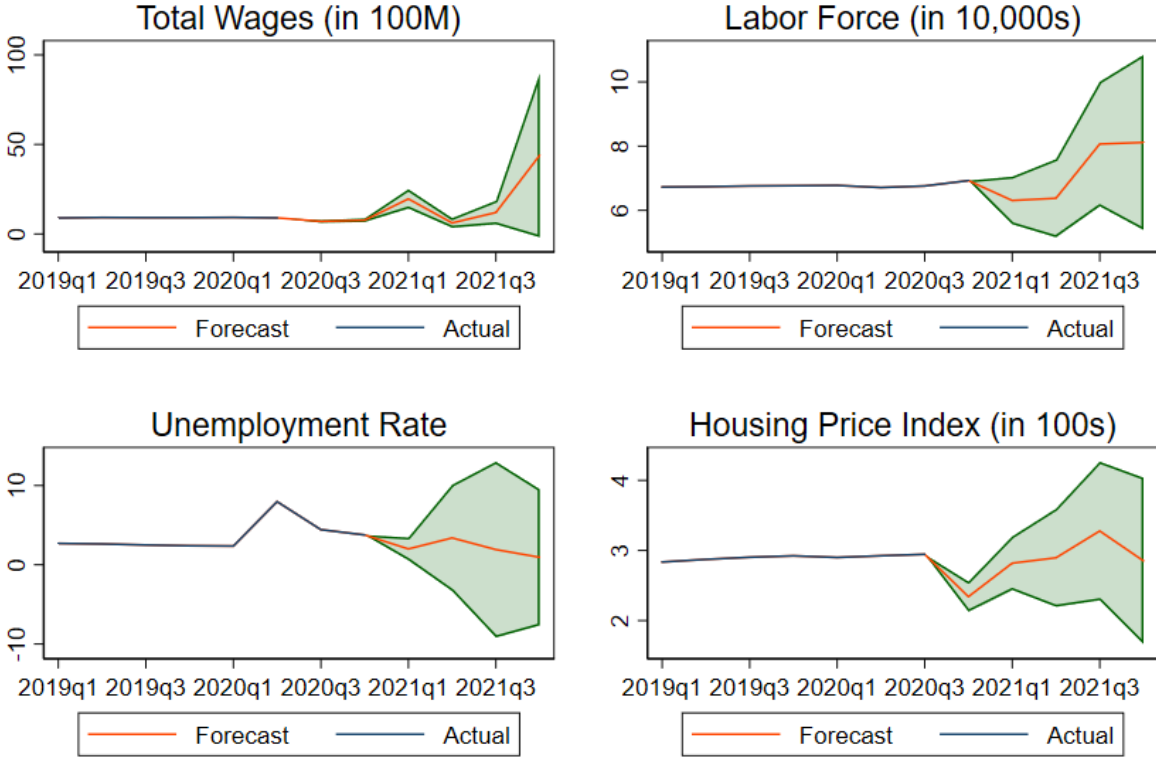


Fargo, ND-MN Outlook

Figure 3 shows a positive economic outlook for Fargo, ND-MN; a continuation of the improvement in the recovery shown in the previous economic outlook report. Total wages fell by 3.57% in the second quarter of 2020(2020q2), the last quarter with available data. From there, the model created an erratic forecast with a large confidence interval reflecting large amounts of uncertainty. Wages are forecast to have a general growth trend through 2021. The Fargo labor force (the total number of people employed plus those seeking employment) is expected to grow by over 8% in the first quarter of 2021 (2021q1). The labor force may fall slightly throughout 2021, but the general trend for the year is of growth. The unemployment rate is forecast to decline overall in the coming quarters to a rate that reflects pre-COVID levels by the end of 2021 (2021q4). The Fargo Housing Price Index is forecast to display growth over the year 2021. However, that growth may come after a slight decline in the fourth quarter of 2020 (2020q4) and early 2021. Overall, these forecasts indicate that the Fargo economy is set to experience trends of continued recovery in the coming months, with increases in total wages and the total labor force, a declining unemployment rate, and a fluctuating but relatively strong housing price index into 2021.

Figure 4

Bismarck Quarterly Outlook

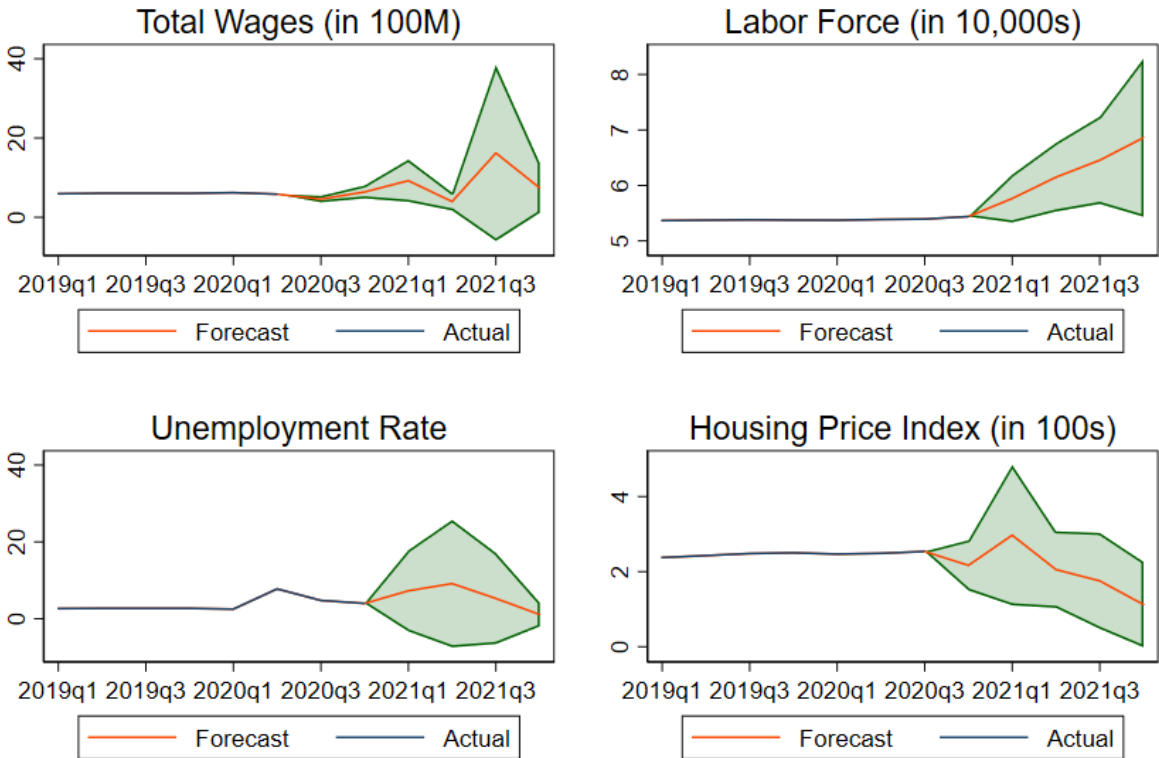


Bismarck, ND Outlook

The Bismarck, ND, metro area has a mixed economic outlook. Total wages decreased by just under 3% in the second quarter of 2020 (2020q2), the last quarter with available data. Total wages are expected to fluctuate, experiencing further decline in the third quarter of 2020 (2020q3) followed by two quarters of growth into the beginning 2021 before falling again in the second quarter of 2021 (2021q2). The size of the labor force is forecast to decline to around 60,000 in the first quarter of 2021 (2021q1). From there, the labor force is projected to experience growth for the rest of 2021. The unemployment rate is forecast to have a slight downward trend throughout 2021 which, along with the labor force trends, can represent a sign of a recovering labor market. The Bismarck housing price index has fluctuations in the forecast but is expected to remain about constant over the course of the year.

Figure 5

Grand Forks Quarterly Outlook

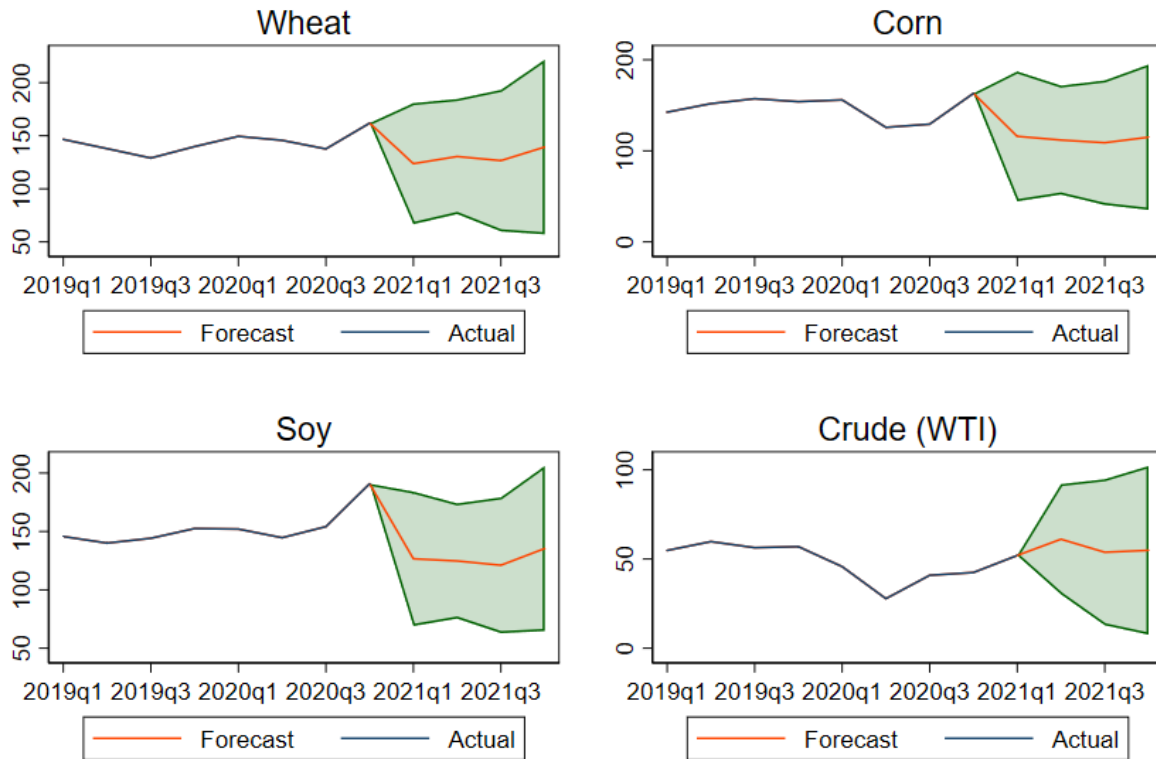


Grand Forks, ND-MN Outlook

The Grand Forks, ND-MN, metro area outlook is mixed. Total wages fell by over 6% in the second quarter of 2020 (2020q2), the most recent quarter with available data. Total wages are projected to fall further in the third quarter of 2020 (2020q3) before growing into the beginning of 2021. From there, total wages show large fluctuations and a large confidence interval, reflecting a lot of uncertainty. The labor force in Grand Forks, ND-MN, is forecast to increase at a consistent rate throughout 2021. There is a lot of uncertainty regarding the movement of the unemployment rate. There may be a slight rise in the beginning of 2021 followed by a decline in the last two quarters of the year, resulting in a net decline in the unemployment rate. The housing price index shows fluctuating housing prices in the short term, with a significant decline in the second half of 2021. The confidence interval for this trend is large.

Figure 6

Commodity Quarterly Outlook

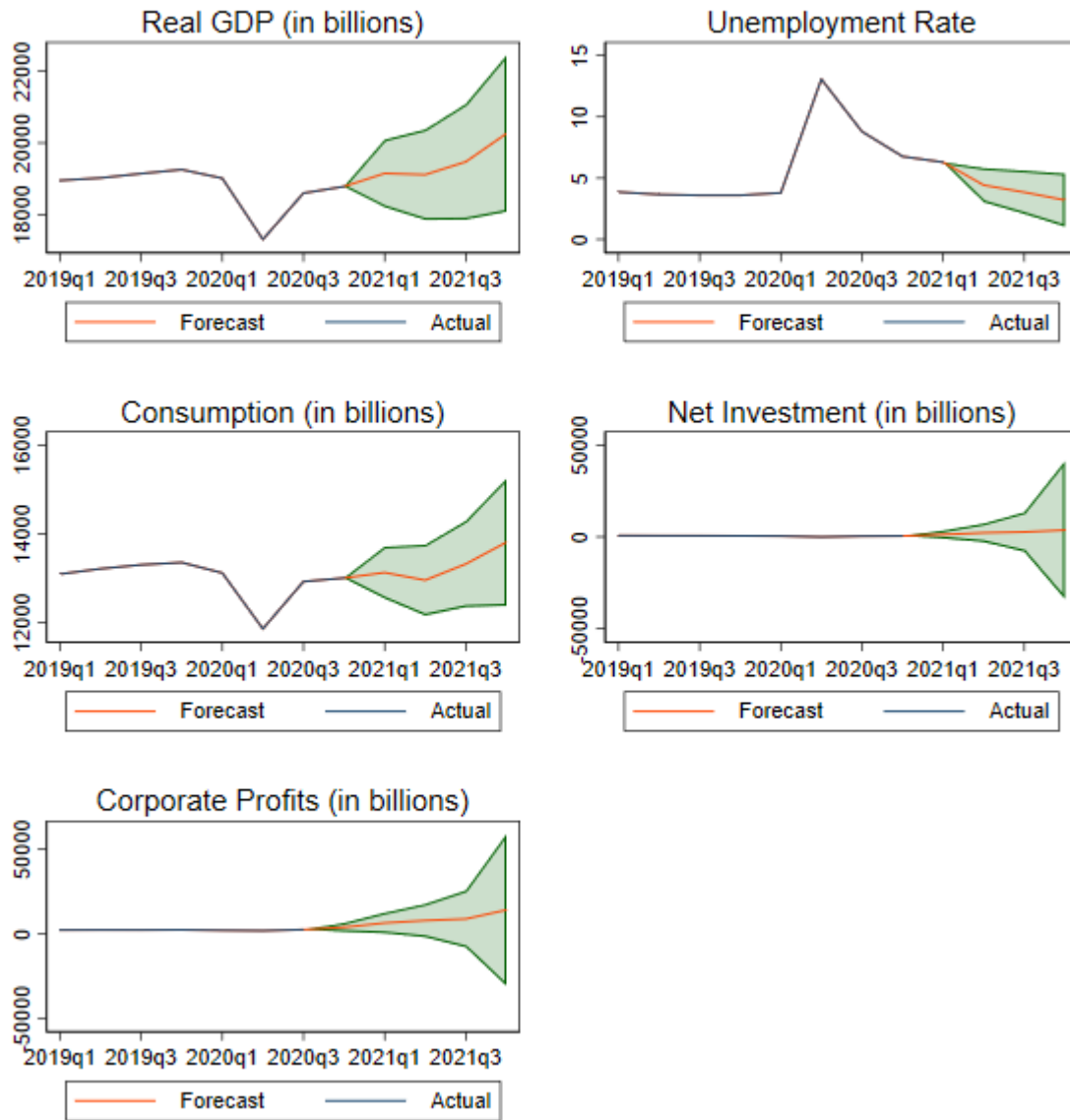


Commodity Outlook

Commodity values show a decline in the coming year. This model uses a producer price index for wheat, corn, and soy prices. A producer price index measures the average changes in prices received by domestic producers for their output. The price of crude is the average daily price of West Texas Intermediate (WTI) futures contracts. Over the next few quarters, corn, wheat, and soy show price declines. The price of crude, in contrast, is anticipated to increase slightly through 2021. Overall, these charts show that prices for producers are forecast to decrease slightly for wheat, corn, and soy into 2021, with slight increases in crude. The confidence intervals about all commodity price trends are large, reflecting high levels of uncertainty.

Figure 7

National Quarterly Outlook



National Outlook

The above charts display the national quarterly outlook. The first chart, Real GDP, is the inflation-adjusted value of the goods and services produced by all labor and assets in the United States. The model predicts that real GDP will increase by nearly 2% in the first quarter of 2021 (2021q1) and sustain the growth throughout the year. This trajectory will be highly dependent on the continued national and worldwide response to the COVID-19 pandemic. The unemployment rate is expected to continue its current decline, reflecting a return to the workforce by Americans as COVID restrictions lift and unemployment rates return to pre-pandemic levels.

The third panel, Consumption, is the measure of the value of personal household consumption. Consumption estimates for the next year mirror real GDP projections. Net investment (the total amount of investment in capital by the business sector used to expand the capital stock) is expected to continue to grow in the next quarter and into the next year. This private investment is partly the result of increasing corporate profits. However, there is an exceptionally high level of uncertainty around forecast net investment and corporate profits, as shown by the large confidence intervals.

Summary

The forecasts in this report use historical data to predict future trends. The model used to generate the forecasts was run using data available on February 5, 2021.

North Dakota

Economic forecasts for North Dakota show a state that is approaching a possible recovery from economic impacts of the COVID-19 pandemic. The current forecast shows a continuation of positive outlooks shown in the previous report. Over the forecast time period, increases are expected for total wages and salaries, the labor force, gross state product, and total tax collections.

Fargo, ND-MN

The Fargo, ND-MN, metro area is poised to experience a recovery in the coming months. Wages and the labor force are projected to rise; unemployment is projected to fall; and housing prices are expected to increase slightly.

Bismarck, ND

The Bismarck, ND, metro area economy is expected to begin a recovery in the near term. Total wages and the labor force are expected to fluctuate in the short term, but grow through 2021. The unemployment rate is expected to fall, and housing prices are projected to fluctuate but remain relatively unchanged at year end.

Grand Forks, ND-MN

The Grand Forks, ND-MN, metro area has a mixed forecast. Wages and the unemployment rate will fluctuate but remain relatively close to current levels. The labor force is forecast to increase through the end of 2021. Housing prices are expected to fluctuate in the short term and then fall toward the end of the year.