

# Idaho Economic Forecast

Brad Little, Governor  
Alex J. Adams, Administrator

DIVISION OF FINANCIAL MANAGEMENT  
Executive Office of the Governor

July 2021

VOLUME XLIII NO. 3

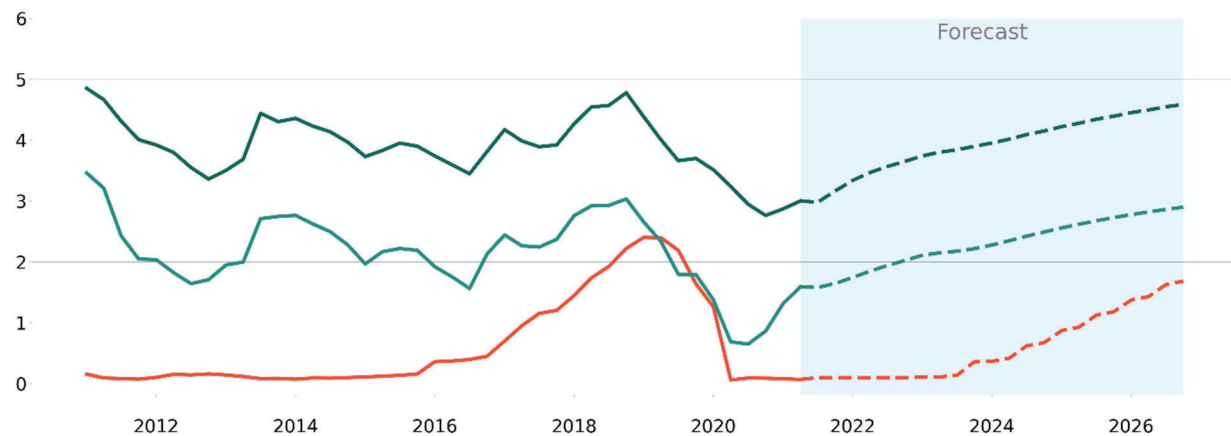
ISSN 8756-1840

- Forecast begins second quarter of 2021
- Alternative forecasts

## Interest rates, percent

Fed funds rate is expected to increase from September 2023.

— Fed Funds rate — Yield on 10-year treasury notes — 30-year fixed mortgage rate



Source: FRB (history), Freddie Mac (history), IHS (forecast)

**IDAHO  
ECONOMIC  
FORECAST  
2021–2026**

State of Idaho  
**BRAD LITTLE**  
Governor

*Costs associated with this publication are available  
from the Idaho Division of Financial Management  
in accordance with Section 60-202, Idaho Code.*

07-2021/010200-180-4001

## TABLE OF CONTENTS

Introduction.....	3
Executive Summary .....	5
Idaho and US Forecast Summary Tables.....	6
Forecast Description: National and Idaho.....	8
Forecast Comparison .....	20
Alternative Forecasts .....	22
Appendix.....	25
IHS Markit US Macroeconomic Model .....	26
Idaho Economic Model: .....	28
Exogenous Variables .....	30
Endogenous Variables .....	32
Forecast Detail .....	35
Annual Forecast .....	36
Quarterly Forecast .....	50

This page is left blank intentionally.

## INTRODUCTION

This document summarizes Idaho's economic forecast for 2021 second quarter through 2026 second quarter. The primary national forecast in this report is the July 2021 IHS Markit (IHS) baseline forecast. The Idaho economic model takes this national forecast as an input.

Alternative assumptions concerning future movements of key economic variables can lead to major variations in national and/or regional outlooks. IHS examines the effects of different economic scenarios, including the potential impacts of global economic conditions, higher inflation, and future Federal Reserve Board decisions. Alternative Idaho economic forecasts were developed under different policy and growth scenarios at the national level. Three of these forecasts are included in this report.

Historical and forecast data for Idaho and the United States are presented in the tables. Those tables are now provided via [link](#) within this pdf document. Details are provided for every year from 2008 through 2024 and for every quarter from 2019 through 2024. The prediction of the Idaho Economic Model (IEM) for this forecast begins with the second quarter of 2021.

The Idaho Department of Labor provides monthly historical employment data that are seasonally adjusted and converted to quarterly frequencies by the Idaho Division of Financial Management. The historical data through the first three months of 2021 have been provided by the Idaho Department of Labor.

Descriptions of IHS's US Macroeconomic Model and the IEM are provided in the appendix.

The Idaho economic forecast has typically included an article from one of the Federal Reserve Banks. In this edition we continue to suggest that as an educational resource to readers. The relevant link is <https://www.frbsf.org/economic-research/publications/economic-letter/> for the Federal Reserve Bank of San Francisco. Recent research letters have addressed federal relief legislation and its impact on households, parental participation in the pandemic labor market, and measuring labor market slack in the US jobs scene.

Readers with any questions should contact Greg Piepmeyer or Saruul Khasar at (208) 334-3900 or via email using [greg.piepmeyer@dfm.idaho.gov](mailto:greg.piepmeyer@dfm.idaho.gov) or [saruul.khasar@dfm.idaho.gov](mailto:saruul.khasar@dfm.idaho.gov).

**Idaho Division of Financial Management**  
304 N. 8<sup>th</sup> St.  
P.O. Box 83720  
Boise, ID 83720-0032

**Economic Analysis Bureau**  
Greg Piepmeyer, Chief Economist  
Saruul Khasar, Economist  
(208) 334-3900

This page is left blank intentionally.

## SUMMARY

**Personal income:** Personal income for the nation has grown at the median measurement of 4.8 percent during the past four years. IHS sees the median growth at 4.0 percent across the next few years. Median personal income growth in Idaho has been at a 5.6 percent rate. The forecast predicts a 5.0 percent rate across the next few years.

Personal income in Idaho closed 2019 near the \$82 billion annual rate.<sup>1</sup> During the pandemic, due partly to transfer payments, it has shot above the \$100 billion annual rate. The DFM forecast is for the mid-\$90 billion rate across the remainder of 2021. By 2023, personal income in the state is expected to cross above \$100 billion again.

Wages and salaries are over 40 percent of personal income in Idaho. Statewide, wages and salaries in Idaho saw large increases through 2020. The DFM forecast sees wages and salaries levels as being sustained, but the growth of the past year or two will not be repeated in the medium term. Instead, wage growth will be more typical of 2018–2019.

**Employment:** Typical employment (count) growth in the US has been at a 1.5 percent annual rate recently. The IHS forecast foresees that persisting through the next few years. Median employment growth in Idaho has been at a 3.3 percent rate recently. The DFM forecast sees median employment growth at 2.4 percent annual rate through the next few years.

**Unemployment:** The unemployment rate in the IHS forecast is expected to typically be 3.7 percent across the next three years for the US economy. The lowest unemployment rate in the US history is 3.5 percent.<sup>2</sup> For the medium term, the national level unemployment rate forecast is essentially at the “lower bound.” The current unemployment rate in Idaho is 3.0 percent. Idaho’s unemployment rate has been below the national rate recently. The DFM economic model does not yet include a state unemployment forecast.

**Housing starts:** US housing starts have been elevated in recent years, but they are likely to be decreasing in the next few years. Idaho housing starts have been elevated but they are likely to be increasing across the forecast. From 2017 to 2021, Idaho housing starts increase from the mid-14,000 (housing unit) level to above the 21,000 level. Housing starts in Idaho are expected to be above 22,000 by median measure for the next 3 years.

**Home prices:** In recent years, Idaho home prices surged. In 2020, Federal Reserve lowered interest rate and mortgage interest rates followed the lead. Home prices appreciated even as mortgage payments may not have risen. There are no further interest rates cuts in the forecast. The rise in housing prices moderates in the forecast.

---

<sup>1</sup> Annual rate for a nominal figure like these means that a quarterly measurement was repeated for four consecutive calendar quarters, then the annual figure would be the one quoted. This is the reporting convention used by US economic agencies.

<sup>2</sup> <https://www.bls.gov/charts/employment-situation/civilian-unemployment-rate.htm>



**IDAHO ECONOMIC FORECAST**  
**EXECUTIVE SUMMARY**  
**JULY 2021**

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>U.S. GDP (BILLIONS)</b>											
Current \$	18,745	19,543	20,612	21,433	20,937	23,080	24,779	25,824	26,929	28,141	29,459
% Ch	2.8%	4.3%	5.5%	4.0%	-2.3%	10.2%	7.4%	4.2%	4.3%	4.5%	4.7%
2012 Chain-Weighted	17,731	18,144	18,688	19,092	18,426	19,641	20,616	21,041	21,455	21,913	22,421
% Ch	1.7%	2.3%	3.0%	2.2%	-3.5%	6.6%	5.0%	2.1%	2.0%	2.1%	2.3%
<b>PERSONAL INCOME - CURR \$</b>											
Idaho (Millions)	68,248	72,605	77,993	82,148	89,145	96,793	97,848	102,801	107,965	113,558	119,947
% Ch	3.9%	6.4%	7.4%	5.3%	8.5%	8.6%	1.1%	5.1%	5.0%	5.2%	5.6%
Idaho Nonfarm (Millions)	66,244	71,024	76,116	79,884	86,501	94,729	95,682	100,512	105,559	111,028	117,304
% Ch	4.4%	7.2%	7.2%	5.0%	8.3%	9.5%	1.0%	5.0%	5.0%	5.2%	5.7%
U.S. (Billions)	16,161	16,949	17,852	18,552	19,728	21,085	21,279	22,175	23,149	24,244	25,450
% Ch	2.8%	4.9%	5.3%	3.9%	6.3%	6.9%	0.9%	4.2%	4.4%	4.7%	5.0%
<b>PERSONAL INCOME - 2012 \$</b>											
Idaho (Millions)	65,545	68,501	72,053	74,778	80,209	84,488	83,597	86,235	88,826	91,582	94,804
% Ch	2.8%	4.5%	5.2%	3.8%	7.3%	5.3%	-1.1%	3.2%	3.0%	3.1%	3.5%
Idaho Nonfarm (Millions)	63,619	67,009	70,318	72,718	77,833	82,687	81,746	84,315	86,847	89,541	92,715
% Ch	3.3%	5.3%	4.9%	3.4%	7.0%	6.2%	-1.1%	3.1%	3.0%	3.1%	3.5%
U.S. (Billions)	15,521	15,991	16,492	16,888	17,751	18,403	18,180	18,602	19,045	19,552	20,115
% Ch	1.7%	3.0%	3.1%	2.4%	5.1%	3.7%	-1.2%	2.3%	2.4%	2.7%	2.9%
<b>HOUSING STARTS</b>											
Idaho	12,383	14,003	16,082	16,813	18,285	22,049	22,170	23,010	23,907	24,577	25,135
% Ch	20.6%	13.1%	14.8%	4.5%	8.8%	20.6%	0.5%	3.8%	3.9%	2.8%	2.3%
U.S. (Millions)	1.177	1.205	1.247	1.292	1.397	1.573	1.437	1.347	1.328	1.317	1.284
% Ch	6.4%	2.4%	3.5%	3.6%	8.1%	12.6%	-8.7%	-6.2%	-1.4%	-0.8%	-2.5%
<b>TOTAL NONFARM EMPLOYMENT</b>											
Idaho	693,910	715,178	738,656	760,433	759,082	793,265	819,390	841,963	860,054	876,840	895,196
% Ch	3.4%	3.1%	3.3%	2.9%	-0.2%	4.5%	3.3%	2.8%	2.1%	2.0%	2.1%
U.S. (Thousands)	144,333	146,595	148,893	150,900	142,252	146,183	151,543	154,061	155,160	155,908	156,766
% Ch	1.8%	1.6%	1.6%	1.3%	-5.7%	2.8%	3.7%	1.7%	0.7%	0.5%	0.6%
<b>SELECTED INTEREST RATES</b>											
Federal Funds	0.4%	1.0%	1.8%	2.2%	0.4%	0.1%	0.1%	0.2%	0.5%	1.0%	1.5%
Bank Prime	3.5%	4.1%	4.9%	5.3%	3.5%	3.2%	3.3%	3.3%	3.7%	4.2%	4.7%
New Construction Mortgage	3.6%	4.0%	4.5%	3.9%	3.1%	3.0%	3.5%	3.8%	4.1%	4.3%	4.5%
<b>INFLATION</b>											
GDP Price Deflator	1.0%	1.9%	2.4%	1.8%	1.2%	3.4%	2.3%	2.1%	2.3%	2.3%	2.3%
Personal Cons Deflator	1.0%	1.8%	2.1%	1.5%	1.2%	3.1%	2.1%	1.8%	2.0%	2.0%	2.0%
Consumer Price Index	1.3%	2.1%	2.4%	1.8%	1.2%	3.7%	2.4%	2.1%	2.1%	2.1%	2.1%

**National Variables Forecast by IHS Economics**  
**Forecast Begins the Second Quarter 2021**

**IDAHO ECONOMIC FORECAST**  
**EXECUTIVE SUMMARY**  
**JULY 2021**

	2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>U.S. GDP (BILLIONS)</b>												
Current \$	21,561	19,520	21,170	21,495	22,062	22,830	23,431	23,996	24,331	24,658	24,929	25,197
% Ch	-3.4%	-32.8%	38.3%	6.3%	11.0%	14.7%	11.0%	10.0%	5.7%	5.5%	4.5%	4.4%
2012 Chain-Weighted	19,011	17,303	18,597	18,794	19,086	19,456	19,814	20,206	20,396	20,569	20,692	20,807
% Ch	-5.0%	-31.4%	33.4%	4.3%	6.4%	8.0%	7.6%	8.2%	3.8%	3.4%	2.4%	2.2%
<b>PERSONAL INCOME - CURR \$</b>												
Idaho (Millions)	84,992	92,836	88,248	90,505	103,396	96,038	93,533	94,204	95,723	97,242	98,629	99,797
% Ch	6.9%	42.3%	-18.3%	10.6%	70.3%	-25.6%	-10.0%	2.9%	6.6%	6.5%	5.8%	4.8%
Idaho Nonfarm (Millions)	82,650	90,849	85,367	87,139	101,165	93,997	91,405	92,351	93,597	95,091	96,450	97,590
% Ch	7.1%	46.0%	-22.0%	8.6%	81.7%	-25.5%	-10.6%	4.2%	5.5%	6.5%	5.8%	4.8%
U.S. (Billions)	18,951	20,457	19,854	19,650	22,102	20,886	20,630	20,723	20,885	21,173	21,428	21,632
% Ch	4.1%	35.8%	-11.3%	-4.0%	60.1%	-20.3%	-4.8%	1.8%	3.2%	5.6%	4.9%	3.9%
<b>PERSONAL INCOME - 2012 \$</b>												
Idaho (Millions)	76,651	84,064	79,195	80,927	91,613	83,828	81,125	81,386	82,335	83,265	84,083	84,704
% Ch	5.5%	44.7%	-21.2%	9.0%	64.2%	-29.9%	-12.3%	1.3%	4.7%	4.6%	4.0%	3.0%
Idaho Nonfarm (Millions)	74,538	82,264	76,609	77,918	89,637	82,047	79,280	79,785	80,506	81,423	82,225	82,831
% Ch	5.8%	48.4%	-24.8%	7.0%	75.1%	-29.8%	-12.8%	2.6%	3.7%	4.6%	4.0%	3.0%
U.S. (Billions)	17,091	18,524	17,817	17,570	19,583	18,230	17,894	17,903	17,964	18,130	18,268	18,360
% Ch	2.8%	38.0%	-14.4%	-5.4%	54.3%	-24.9%	-7.2%	0.2%	1.4%	3.7%	3.1%	2.0%
<b>HOUSING STARTS</b>												
Idaho	19,620	15,847	17,662	20,010	23,100	21,758	21,401	21,937	21,869	22,068	22,311	22,432
% Ch	33.8%	-57.4%	54.3%	64.8%	77.6%	-21.3%	-6.4%	10.4%	-1.2%	3.7%	4.5%	2.2%
U.S. (Millions)	1,485	1,086	1,440	1,575	1,599	1,566	1,601	1,526	1,487	1,450	1,419	1,391
% Ch	24.8%	-71.4%	209.8%	43.1%	6.1%	-8.0%	9.3%	-17.5%	-9.9%	-9.5%	-8.3%	-7.6%
<b>TOTAL NONFARM EMPLOYMENT</b>												
Idaho	777,070	727,508	759,793	771,958	784,663	791,140	796,091	801,165	809,087	816,603	822,999	828,870
% Ch	5.1%	-23.2%	19.0%	6.6%	6.7%	3.3%	2.5%	2.6%	4.0%	3.8%	3.2%	2.9%
U.S. (Thousands)	151,866	133,665	140,860	142,619	143,355	144,998	147,346	149,034	150,104	151,141	152,070	152,859
% Ch	0.3%	-40.0%	23.3%	5.1%	2.1%	4.7%	6.6%	4.7%	2.9%	2.8%	2.5%	2.1%
<b>SELECTED INTEREST RATES</b>												
Federal Funds	1.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Bank Prime	4.4%	3.3%	3.3%	3.3%	3.3%	3.2%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%
Existing Home Mortgage	3.5%	3.2%	2.9%	2.8%	2.9%	3.0%	3.0%	3.2%	3.3%	3.5%	3.6%	3.7%
<b>INFLATION</b>												
GDP Price Deflator	1.4%	-1.8%	3.5%	2.0%	4.3%	6.0%	3.2%	1.7%	1.8%	2.0%	2.0%	2.1%
Personal Cons Deflator	1.3%	-1.6%	3.7%	1.5%	3.7%	6.2%	2.6%	1.6%	1.8%	1.8%	1.8%	1.8%
Consumer Price Index	1.0%	-3.1%	4.7%	2.4%	3.7%	7.7%	2.8%	1.8%	2.0%	2.0%	2.0%	2.0%

**National Variables Forecast by IHS Economics**  
**Forecast Begins the Second Quarter 2021**

## FORECAST DESCRIPTION

### The forecast period begins with the second quarter of 2021

---

This Idaho economic forecast uses the July 2021 edition of the IHS forecast of the US economy. DFM runs the Idaho economic model based on this national forecast to produce Idaho's economic forecast.

---

Nationwide success with getting the most vulnerable population inoculated against Covid relatively quickly using emergency authorization of vaccines by the Food and Drug Administration (FDA) has been followed by slower uptake within the broader population. That initial success has allowed many sectors of the US economy to reopen. Coupled with massive federal fiscal stimulus, this success has resulted in the US recovering quickly. Still, IHS indicates that the greatest risk to the economic outlook is the course of the pandemic, both in terms of the health outcome as well as the response to how that outcome unfolds. While many reasonable models of outcomes have now been developed, the actual course of the pandemic remains opaque.

The IHS main outlook, reflected in its baseline forecast, presumes continued success in vaccinations and at worst (relatively small) regional setbacks. What the Delta variant of the disease does remains unknown. The two alternative forecasts to that baseline, the optimistic and pessimistic cases of the IHS outlook, presume greater or lesser degrees of consumer confidence as the major differences. Consequences of these can seem mild, but some can be far-reaching. This is particularly so for interest rates, inflation, and housing.

Assessing the current situation, IHS finds plenty of economic measures indicating a robust recovery for the US economy. Jobs number have been strong enough to reverse a lot of the damage done during the first few months of the shutdown. IHS is in good company in viewing that the downturn was indeed short. The National Bureau of Economic Research has a recession dating committee, called the Business Cycle committee, and it just determined that the pandemic induced recession lasted only two months in the US. This is the shortest US recession that anyone alive has experienced.

Those jobs numbers, such as the 850,000 jobs in June,<sup>1</sup> are strong enough to draw some people from the margins back into the labor force, but not so strong as to induce the Federal Reserve to raise interest rates (that it controls) just yet. IHS sees those rates as rising only in mid-2023.

**Employment:** The most recent reading of labor force participation which informed the July IHS forecast was 61.6 percent. That was the value for both May and June. Generally, this rate has been declining,<sup>2</sup> but the lowest it had been prior to the pandemic was 62.4 percent in September of 2015. It was 63.4 percent

---

<sup>1</sup> [https://data.bls.gov/timeseries/CES0000000001&output\\_view=net\\_1mth](https://data.bls.gov/timeseries/CES0000000001&output_view=net_1mth)

<sup>2</sup> <https://www.bls.gov/charts/employment-situation/civilian-labor-force-participation-rate.htm>

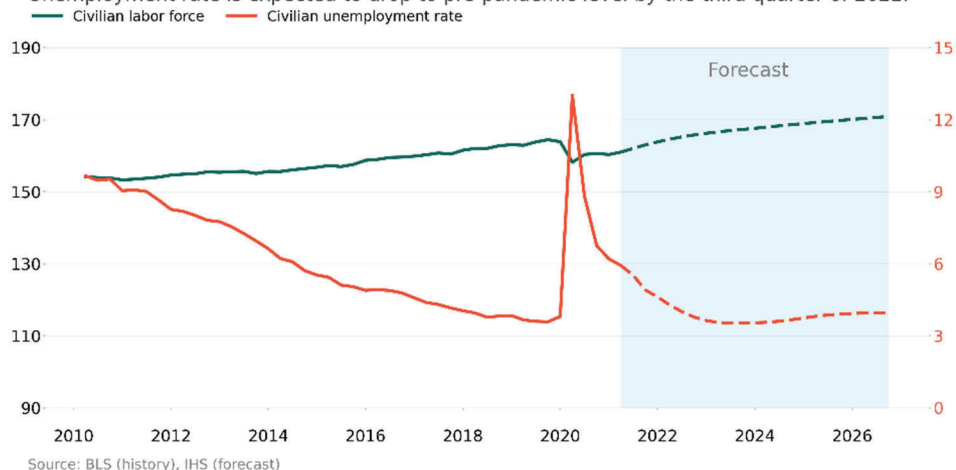
just prior to the pandemic. This is substantially the evidence IHS economists — and many other economic observers — rest upon when indicating that “the recovery in labor markets still has a long way to go.”

As the accompanying Labor Force and Unemployment rate plot

shows, a declining unemployment rate is not the whole story. As the labor force participation rate decreases the unemployment rate has more room to decrease. IHS confirms the employment trend is catching up the pre-pandemic trend by the middle of 2024. As of June, payroll counts were still 6.8 million below the pre-pandemic level.

### Labor Force and Unemployment rate, millions

Unemployment rate is expected to drop to pre-pandemic level by the third quarter of 2022.



Among the questions asked of Fed Chair J. Powell during the press conference<sup>3</sup> following the Open Market Committee’s July meeting is if the wage rises occurring within the US portend more substantial, sustained inflation. He indicated that the Federal Reserve does not see these raises as inducing a spiraling inflation reading. Part of his answer is that the wage raises are not yet inducing firms to raise prices to similar degrees. Greater productivity or profit compression are two avenues for absorption of the wage increases.

The job market is often alluded to as tight in Idaho. Idaho has an unemployment rate of 3.0 percent, and the unemployment rate has been below the nation’s rate throughout the pandemic, as it was beforehand. The participation rate in Idaho is 62.6 percent.<sup>4</sup> There is plenty of evidence of wage raises revealed within the local media. Lactalis, which operates a dairy processing plant in Meridian, was offering starting wages of \$13–14 per hour a year ago. Today it offers \$15.50, and those hires who stay for 30 days are reported to see that entry wage rise to \$16.95 per hour.

A newer competitor for employees in that jobs market in that area is Amazon. It too has raised wages. Its \$15 starting wage has been raised to \$17.80. The retailer is also offering sign-on bonuses as well as smaller Covid vaccination bonus. Bonuses help with recruiting and are also used for retention. Employers for some common jobs in Idaho have used these enticements for some time: trucking/delivery, nursing, and construction are examples.

<sup>3</sup> <https://www.federalreserve.gov/newsevents/live-broadcast.htm>

Bonuses and raises are likely flashing in the quarterly data from BEA for Idaho but disentangling these from

#### Idaho wage and disbursement

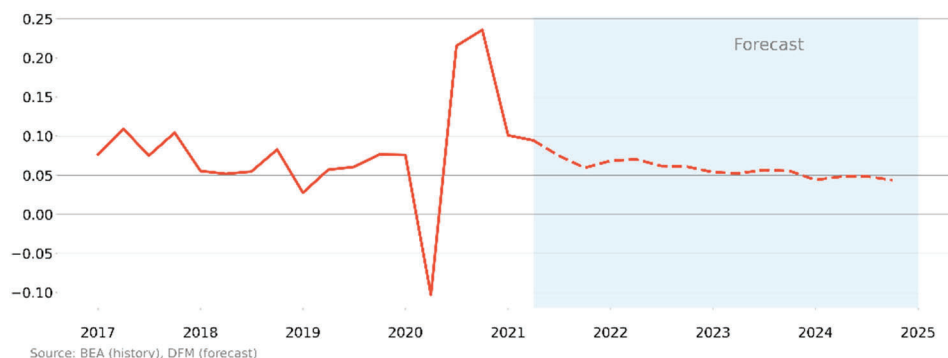
2017 through	2019 average	<b>6.93%</b>
2017 through	2019 median	<b>6.78%</b>
2020Q3 through	2021Q3 average	<b>4.43%</b>

the signal from the changing mix of jobs within Idaho, as for the nation, is difficult. The loss

#### Idaho wages and salary disbursement, % change annual rate

Wages and salary growth is expected to settle around 5 percent.

— Wages and salary disbursement, % change annual rate



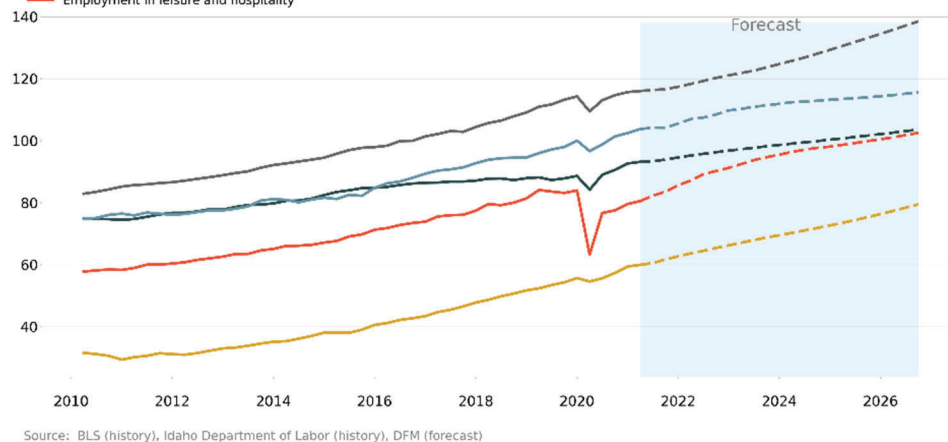
of many lower-wage but fewer high-wage jobs during the pandemic numerically raise the average wage. Wage data for Idaho showed the typical growth of just under 7 percent prior to 2020 more than doubled during 2020 and through the first quarter of 2021. The collapse in paid wages at the onset of the pandemic declaration was more than made up by consecutive quarters of expansion of wage payments. This is the most complete data available at the state level through the close of July.

Absent any additional major shocks to the economy, the trajectories for payroll counts in most of Idaho's private employment sectors are expected to be finishing the recovery of jobs losses that the first and second quarter of 2020 brought, and to settle into stable, fairly strong, expansions. Health and private education, which had made it through the prior recession unscarred

#### Idaho employment by sector, thousands

Employments in each sector is expected to follow pre-pandemic trajectory.

— Employment in construction — Employment in health care and educational services  
— Employment in retail — Employment in professional, scientific, and technical services  
— Employment in leisure and hospitality



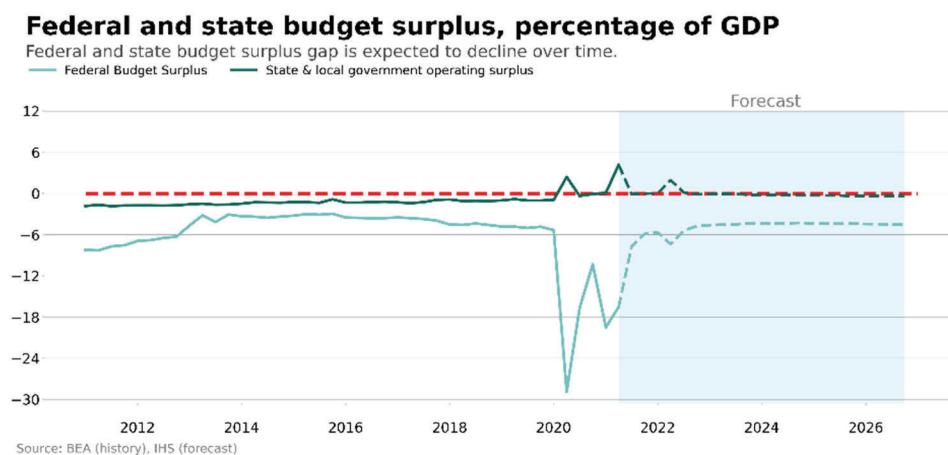
#### Employment annual growth rate predictions

	Construction		Retail		Business Services		Healthcare		Hospitality & Leisure	
2020	5.39	5.07	0.32	1.96	2.89	3.10	1.45	3.68	(9.27)	2.49
2021	8.24	5.30	5.87	0.84	4.49	2.74	2.92	3.43	8.14	1.96
2022	6.05	4.42	2.36	1.09	3.32	2.32	2.28	3.29	8.07	1.55
2023	5.41	3.84	2.11	1.09	3.26	1.90	2.94	3.46	5.65	1.54
2024	4.66	3.15	1.81	1.30	1.69	1.95	3.31	3.50	3.91	1.92
2025	4.70	2.91	1.74	1.48	1.01	2.25	3.86	3.48	2.39	2.08
2026	5.28	2.77	1.86	1.56	1.20	2.54	4.00	3.46	2.52	2.09

Note: July 2021 forecasts Jan 2020 forecasts

was not spared this time around. As with the nation, the pandemic's initial effects on the hospitality and leisure sector was the most severe in Idaho. Construction fared better.

**Government and Fiscal Policy:** The Congressional Budget Office (CBO) regularly publishes its baseline projections of the federal budget and the economy over the next 10 years. In CBO's projections, the federal budget deficit is likely to be at 13.4 percent of gross domestic product (GDP) in 2021. The budget deficit in 2020 was 14.9 percent of GDP. That is the largest portion of the economy since 1945. In CBO's projections, deficits fall over the next few years. However, thereafter due to rising interest cost, deficits are likely to increase in most subsequent years. CBO describes its projections of the federal budget and the U.S. economy under current, enacted law. According to their baseline projection, the budget deficit reaches 5.5 percent of GDP in 2031. IHS places that figure at 1.2 percent then. The massive stimulus efforts undertaken by the federal government, visible here through the transfer payments to individual households, are large drivers of the recent acceleration of the federal deficit as a percentage of GDP.



Much of the federal fiscal policy has been left to the states to implement. Staying on top of dispersal programs and opportunities has been a major effort for Idaho's state and local governments during the past year and one-half. Transfer payments have been made to local governments and organizations. In mid-July it was reported that Idaho has received \$14 million in federal grants for arts. The close of June saw Idaho disburse \$54 million in federal aid to its cities, and \$4.4 million to rural health clinics for Covid testing support. Additional aid for vaccination efforts followed for similar clinics in the state in July. While local remit is not yet public, the USDA is offering \$200 million in support for logging companies with Covid costs.

State acquisition and dispersal of federal funds has expanded significantly during the pandemic, but it is a regular part of the job of many agencies. Longer duration examples have also been in evidence this past year. The College of Southern Idaho was recently designated a Hispanic Serving Institution of higher education. This is the first college in Idaho to achieve this distinction. Holding it allows the college to apply for new pools of national grants. One-time, but long-focus efforts are also pulling in federal aid. The Anderson Ranch dam raising is one such example. With an estimated cost of \$83.3 million, a large portion—at \$10.28 million—became available through the omnibus federal funding legislation of January. The addition of six vertical feet to the dam will raise storage capacity by 29 thousand acre-feet of water. The reservoir currently has a capacity of 413 thousand acre-feet of water storage.

There is likely no aspect of the massive fiscal effort the US undertook which left any state government unaltered economically. The Federal Reserve's lowering of borrowing costs is another prong of the



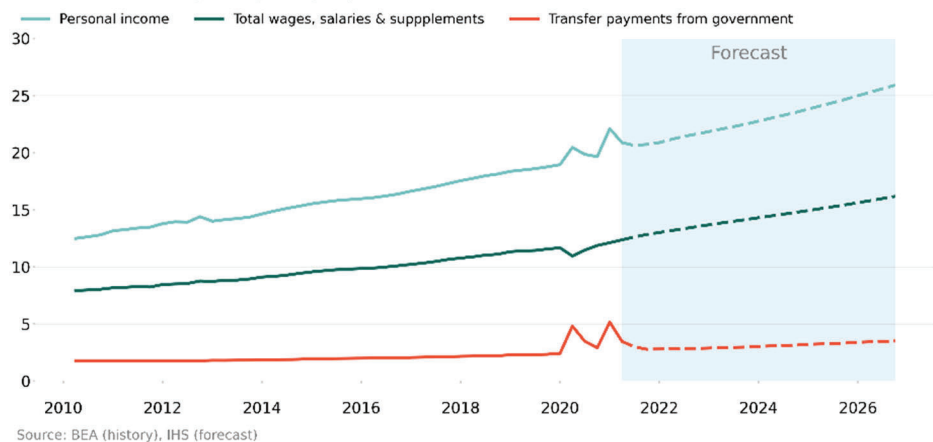
federal economic response to the Covid pandemic. This has had local benefit for Idaho's government. Idaho Transportation Department has been able to refinance some of its bonds to more favorable terms. This has saved the state \$41 million.

The major federal legislation passed in response to the coronavirus contained, in particular, the stimulus checks the government deposited into the taxpayer's bank accounts. For individual citizens, these are probably the most salient part of the federal fiscal response to the pandemic. These are the major cause

of the spikes in the accompanying graph. There are, though, other transfer payments which made fewer headlines. One example is a subsidy for internet service of between \$50 and \$75 per month per household. According to Census survey data, about 1 percent of Idaho households have applied for this newer transfer scheme.

### US Personal income, trillions of dollars

Personal income is growing at a pre-pandemic rate.

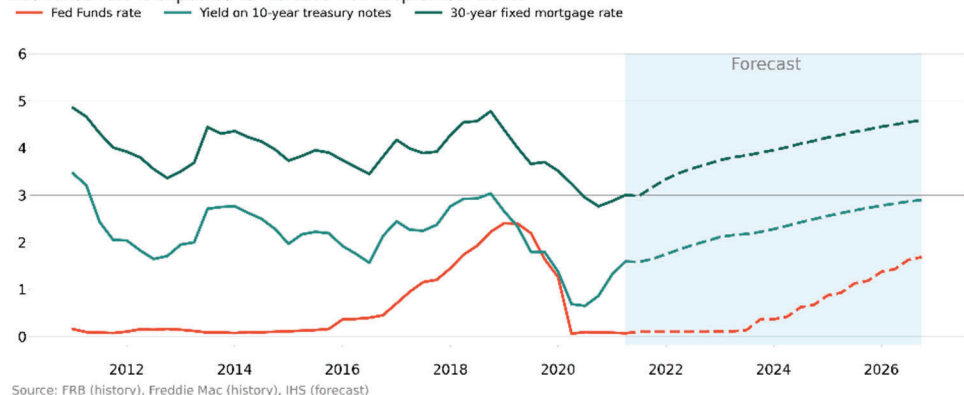


**Monetary Policy and Inflation:** CPI and the core CPI (exclude food and energy) rose 0.9 percent in June 2021. The Fed noted this primarily reflected transitory factors. While CPI is the inflation measure most often discussed in news stories, other measures of inflation are available, each with their own particular uses. These

often come in “core” varieties, which exclude food and energy from the computation. Prices for two items are highly volatile, which means that the monthly measures of inflation which include them can be distorted more noise than signal, and consequently can

### Interest rates, percent

Fed funds rate is expected to increase from September 2023.



preclude inflation measures which include them from reliably indicating what is likely to unfold in the broader economy over the medium term. The Federal Reserve uses core Personal Consumption Expenditures (PCE) inflation as its preferred metric. For several recent years, readings of inflation by this metric have been below 2 percent. The Federal Reserve's Open Market Committee is aiming to achieve

slightly higher than 2 percent inflation in the medium term. This desired overshoot is to meet their long-run goal of 2 percent average inflation.

The Federal Reserve runs an asset purchase program, known as quantitative easing. It has become an influential monetary policy tool since the global financial crisis of 2007–2008. It injects liquidity into a distressed economy. The Committee is determined to increase its holdings of Treasury securities by at least \$80 billion per month and of agency mortgage-backed securities by at least \$40 billion per month until substantial progress has been made toward its maximum employment and price stability goals. The Federal Reserve reiterated these aims and indicated that these programs will continue during its July 28 press conference.

Ultimately, monetary policy affects the real economy through interest rates and through loan supply. As most interest rates on loans (as well as on savings accounts) are closely tied to the Fed Funds rate, interest rates in the business economy are almost immediately affected by the policy rate change. Interest rates are not the only aspect in loans, though. The credit channel may have greater or lesser friction even with the lower interest rates. Banks can become more, or less, risk averse.

**Business and Industry:** IHS on several occasions indicates that borrowing costs are increasing, while simultaneously indicating that the Federal Reserve is maintaining accommodative monetary policy and that banks are easing lending standards. Partly the firm's view may be explained by the path of the ten-year yield in 2021.<sup>4</sup> One can see that volatility is present in that data series. Having begun 2021 under 1 percent, it rose as high as 1.7 percent. Easing lending standards can also raise borrowing costs. Lower quality loan applicants who are newly successful in securing a loan may do so at higher rates than more qualified loan applicants, even if the risk spread for those loans is lower than it has traditionally been.<sup>5</sup>

Mining, particularly drilling activity, has been the strongest part of investment in terms of growth in 2021. The industry is characterized by IHS as currently being cashflow based, as opposed to being debt financed as in 2018–2019. With prices expected to stay above \$60 for West Texas Intermediate, rotary rig counts are expected to continue to increase. Investment in non-residential buildings had tended to slow, a pattern consistent through May's data.

Businesses are investing in inventory. IHS estimates that GDP growth across the first half of the year undershot the depletion of inventory. Overall inventory is at an all-time low as measured by the duration of supply according to the firm. Sales were elevated by the \$450 billion in stimulus payments in January and March.

Some business activity is hampered by disruptions in supply chains. Major car manufactures have had to idle plants due to semi-conductor shortages. Such temporary shutdowns due to supply issues show even in national statistics. The monthly Job Openings and Labor Turnover Survey (JOLTS) from the Bureau

---

<sup>4</sup> <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield>

<sup>5</sup> For an example, Pacific Gas and Electric, which has been blamed for some wildfires in recent years in California, is likely a greater risk than Proctor and Gamble, a consumer goods company, which has benefited from the boom in consumption of cleaning goods during the pandemic. Greater borrowing by PGE and lesser borrowing by P&G would, under those narrow considerations, result in rising borrowing costs, even if PGE would be benefitting from generally lower borrowing costs fostered by accommodative monetary policy. Relative to P&G, its costs would be higher.



of Labor Statistics showed 392,000 separations in May. The corresponding count for July will include those affected by shutdowns at Ford, for example. Downstream effects of this have even reached the market for used cars. Prices there are up 60 percent from February of 2020. When supply of semi-conductors improves, the “next stage” in the recovery of business will be “replacement of depleted inventory” on dealer lots and within the car-rental market in the view of IHS.

While semi-conductors and the auto industry make the headlines, there are more than 20 types of input which are in shortage. IHS finds that most are metals, plastics, chemicals, and electronic components. That broad swath of inputs has many downstream consequences. The firm does not foresee all of them being resolved before the close of 2021.

IHS sees business investment growth in 8.4 percent this year, 6.6 percent next year, and 4 percent on average across the ensuing three years. It declined by 4 percent in 2020.

Some of the national issues apply partly in this state. Idaho’s exposure to semiconductors is earlier in supply chain than the (final automotive assembly) end of it. ON Semiconductors, in Pocatello, Meridian, and Nampa, supplies chips to the automotive sector. Micron Technology designs and produces memory chips. Both are largely thought of as supply, rather than demand in the semi-conductor bottleneck. Micron just reported strong profits, in its press release indicating it had “achieved the largest sequential earnings improvement” in company history.<sup>6</sup> ON Semiconductor reports earnings August 2. Its prior quarter earning report indicated “record automotive revenue of \$515 million increased 5 percent quarter-over-quarter.”<sup>7</sup>

Schweitzer Engineering Laboratories, which produces electronic equipment for controlling and distributing power supply, broke ground on a 140 thousand square foot facility in Moscow. It should employ 60, and support the Pullman and Lewiston facilities, which already employ around 3,000 jobs. Twelve employees for the Moscow facility are already hired. SEL and the utilities serving Idaho are the large local employers in energy. Idaho’s exposure to oil and gas drilling is not large. Still, demand for energy (which has been more than visible during 2021’s summer heatwaves) is likely to support both SEL and Idaho utilities.

PacifiCorp plans to build 3,200 mW of power capacity in Idaho, Utah, Wyoming, and Oregon. Idaho’s portion is expected to be via wind energy. IdaCorp, Idaho Power’s corporate name, indicated it set a new energy delivery record during the June heatwave in southern Idaho.

Also in Moscow, Emsi merged with Burning Glass Technologies of Boston; they are a labor analytics firm. The combined company plans to continue in Moscow; their building there can accommodate more workers.

---

<sup>6</sup> <https://investors.micron.com/news-releases/news-release-details/micron-technology-inc-reports-results-third-quarter-fiscal-2021>

<sup>7</sup> [https://s27.q4cdn.com/926862268/files/doc\\_financials/2021/q1/Q1-2021-Exhibit-99.1-vf.pdf](https://s27.q4cdn.com/926862268/files/doc_financials/2021/q1/Q1-2021-Exhibit-99.1-vf.pdf)

**Housing:** The most recent report from IHS on housing includes the following:

According to the American Community Survey, 79 million of the 122 million occupied housing units in the United States are owner-occupied. Without lifting a finger, these households have enjoyed huge capital gains on their homes since the start of the pandemic. The 44 million renters, though, have fallen behind.

Conditions still favor more months of gains of 1 percent or more. The number of existing homes listed for sale is near an all-time low and demand remains strong: properties took 17 days to sell in June, down from 24 in June 2020. A whopping 89 percent of homes sold in June were on the market for less than a month.

That same report indicates that the Federal Housing Finance Association (FHFA) house price index has risen 7.5 percent in the mountain division, and the national version of it is up 18 percent from May 2020 to May 2021. This is the capital gain to which IHS is referring.

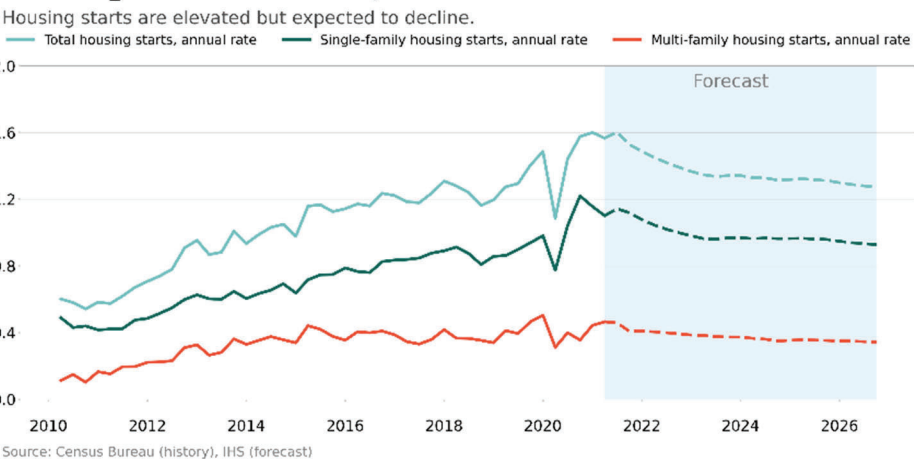
As housing is one of the few avenues of leverage available to most households, this effect is even greater than it appears at first. If a family paid 25 percent of the cost of a home in a down payment and closing costs, and the home subsequently rose by 18 percent in the ensuing year, then the nominal return on that investment is  $18/25 = 72$  percent. While this ignores the continuing costs to service the mortgage and other costs to live in the home, the alternative is generally to rent which has its own costs.

While prices are high, the single-family housing permit counts, which IHS views as a reliable

**Housing starts as a percentage of peak year**

	US peak year 1972	Idaho peak year 2005
2020	59.2%	78.1%
2021	66.6%	94.2%
2022	60.9%	94.7%
2023	57.1%	98.3%
2024	56.2%	102.1%
2025	55.8%	105.0%
2026	54.4%	107.4%

**Housing starts in the US, million**



indicator of the housing market to come, has declined since January. Also, the tremendous price increase in lumber have been reversed. Multi-family housing is brightening in the national outlook. Housing starts are expected at a high of 444,000 (the high is across one-third of a century of data). Thus, the composition of metrics informing the housing outlook is complex.

IHS places the monthly mortgage payment on a home priced at the median price of a new home to be \$1,663. Two years later, at the start of 2023, that is expected to be \$2,062. Both mortgage rate increases as well as home price appreciation contribute to that inflation. Current average 30-year

mortgage rates are 2.78 percent<sup>8</sup> and they are expected to rise to 3.74 percent in two years.

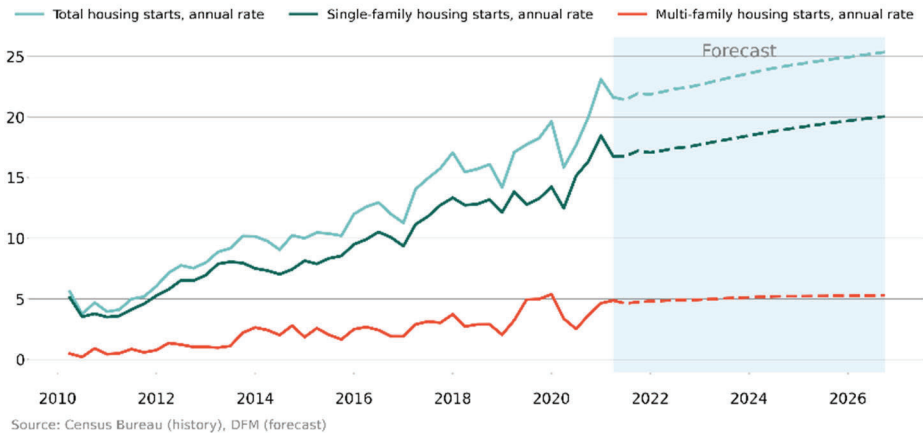
Rising prices in Idaho's real estate market have been well documented in many Idaho communities, including the northern Panhandle, the Wood River Valley, and the Treasure Valley. Both the Magic Valley and the Portneuf region have also seen substantial pressures on home prices. Drivers for these local

price increases are multiple, but a substantial one is the lack of inventory on the market. Data is just beginning to indicate increasing supply in the Treasure Valley. There is some evidence that is occurring in the Panhandle as well. Sustained increases will be needed for the narrative, both in the national media and in local media, to change. Less covered aspects of the housing story include that Idaho courts are assisting in rent disputes. That load is likely to increase as the federal moratorium on evictions expires at the close of July, after a final one-month extension by the Centers for Disease Control. In mid-to-late July, there remained \$150 million in rental assistance for Idaho residents.

**Global economy and Trade:** According to the IHS July outlook, in the second quarter of 2021, the global economy measured by real product surpasses the pre-pandemic peak attained in the last quarter of 2019. The world GDP has declined by 3.5 percent in 2020, and it's expected to grow by 6 percent in 2021, the fastest yearly rate since 1973. The growth, precipitated by fiscal stimulus, high vaccination rates in some countries, and the lifting of pandemic-related restrictions, is likely to subside by mid-2022.

### Idaho housing starts, million

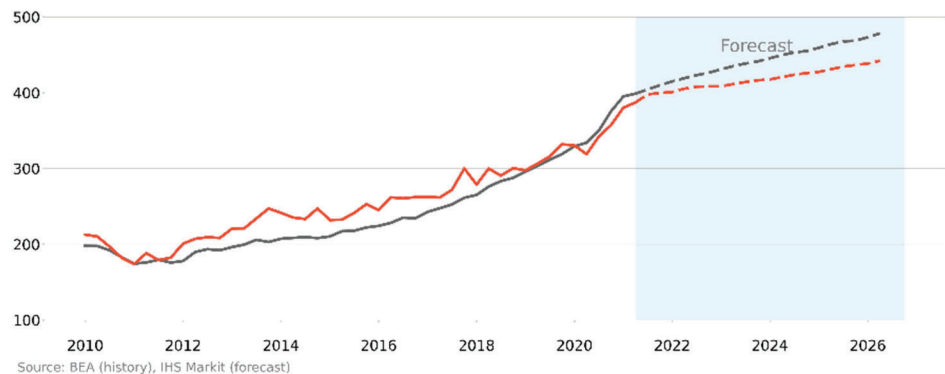
Housing starts are elevated but expected to grow.



### Idaho existing and new home prices, thousand dollars

Home prices, new and existing, soared in 2020 and the growth is likely to persist at a lower rate.

Home Price, Existing Mean; Home Price, New Mean



<sup>8</sup> <http://www.freddiemac.com/pmms/>

Large monetary injections in economies will increase the inflationary pressure in most countries and will likely force central banks to increase policy rates. In Europe, inflation surged in Hungary and the Czech Republic in April 2021. In May, Budapest saw inflation spike to a nine-year high. Consequently, the Hungarian central bank raised its base rate by 30 basis points to 0.9 percent on June 20. It became the first in the European Union country to tighten its monetary policy. Relative to historical rates, 0.9 percent remains a low yield. Other countries which have raised rates already include Russia and Brazil.

Japan offers a counterpoint. The Japanese economy experienced deflationary pressure until May this year. Japan rolled out the yen equivalent of a 2.2-trillion-dollar rescue package and it has recently announced another 708 billion dollars (equivalent) of support as deflationary forces returned. Over nearly a decade, Japan has been battling with low prices. Its tools have been fiscal stimulus and low interest rates. Borrowing has been nearly free. For consumers, falling prices sound like a good thing. However, from the producer's perspective low prices decrease profits and wages, and subsequently stagnate the economy. From the borrower's perspective low prices increase the burden of debt.

In 2020, world merchandise export declined by 1.4 trillion dollars. Within that figure, the US merchandise export declined by \$211.5 million. In the last two decades, global export has plummeted significantly twice, in the years 2009 and 2016. The

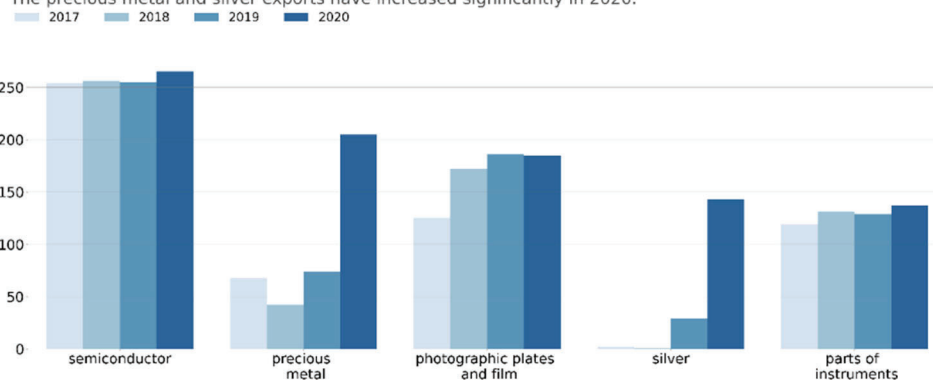
magnitude of trade measured by total exports in 2020 was nearly equal to the 2016 level. The global economic retraction and commodity price slowdown has been the major contributors to the slump in trade.

In the US, the pandemic disruption caused import prices to rise. The main sources are fuel and industrial materials. However, price inflation for capital goods and many consumer goods remained stable.

Last year direct exports to other countries from Idaho declined by 0.9

#### Idaho Top 5 export products, million dollars

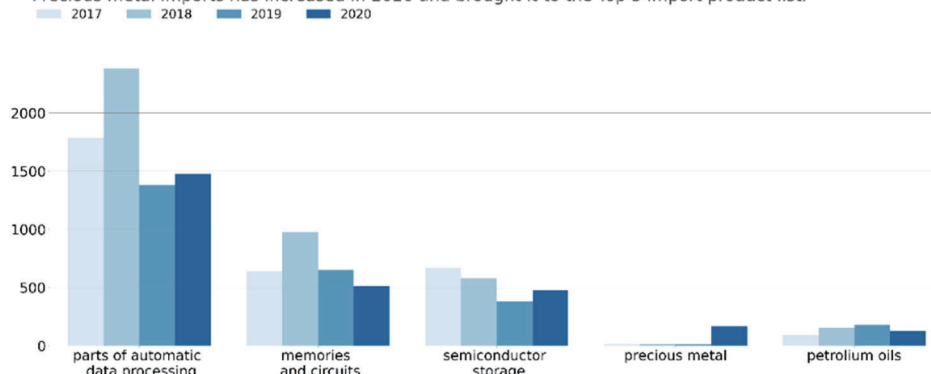
The precious metal and silver exports have increased significantly in 2020.



Source: US Census Bureau

#### Idaho Top 5 import products, million dollars

Precious metal imports has increased in 2020 and brought it to the Top 5 import product list.



Source: US Census Bureau

percent. Imports from other countries have increased by 7.3 percent from 2019. Semiconductor is Idaho's largest export product contributing 7.8 percent of total export with an amount of \$265 million in 2020. Parts of automatic data processing is the largest import product, at \$1.5 billion, and this alone constitutes 26.9 percent of total imports.

This page is left blank intentionally.

## PREVIOUS AND CURRENT FORECAST: A COMPARISON

Prior to the pandemic, Idaho wages and salaries disbursements were forecast at \$37.9 billion dollars for 2020. The value from the BEA places the actual figure at \$37.5 billion. The figures are surprisingly close given the disruption in the labor markets in April 2020. That prior forecast suggested that wage payments would rise to \$39.8 billion for 2021. The rapid recovery from spring 2020 suggests that wage payments will now be substantially higher.

The current forecast sees \$42.5 billion for this figure in 2021.

Looking two years further into the future, for 2023 the projection prior to the pandemic was for \$44 billion in wages and salaries disbursements in Idaho. Now the projection is for \$47.8 billion in wage payments. Jumping ahead again, the like comparison would now be

between \$48.9 billion and the current projection of \$52.5 billion. This change, seeing wage payments rise more substantially, is among the more consequential changes in the current forecast.

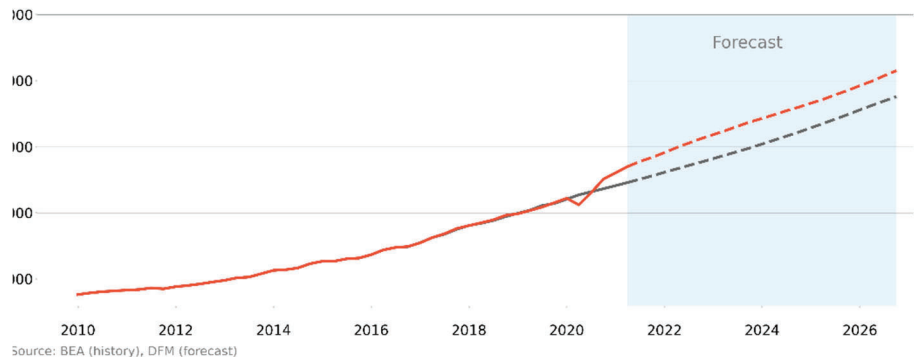
Total employment in 2021 is predicted at 795,500 under the current forecast. It was predicted at 796,600 prior to the pandemic. That is the only year, though, under which the current forecast predicts fewer jobs than was foreseen before Covid. The current outlook sees 2022 as having 6,800 more jobs, with more than 13,000 jobs sustained across 2023–2025, and almost as many in 2026.

Combining these, total wages and total employment, the outlook for average wage in Idaho has also brightened. Wages were forecast for \$48,500 per year in 2021, but they are now seen at \$52,200 this year. Closing 2026, wages were expected to cross above \$56,000 per year. Now traversing that mark occurs before 2024, with \$60,000 expected to be achieved in 2026.

### Wages and salaries disbursement, thousand dollars

Wages and salaries disbursement recovers rapidly starting from Spring 2020.

— January 2020 forecast — July 2021 forecast



**IDAHO ECONOMIC FORECAST  
FORECASTS COMPARISON  
DIFFERENCES BETWEEN  
JULY 2021 vs. APRIL 2021 FORECASTS**

	2017	2018	2019	2020	2021	2022	2023	2024
<b>U.S. GDP (BILLIONS)</b>								
Current \$	0	0	0	0	337	587	571	509
% Difference	0.0%	0.0%	0.0%	0.0%	1.5%	2.4%	2.3%	1.9%
2012 Chain-Weighted	0	0	0	0	72	201	186	114
% Difference	0.0%	0.0%	0.0%	0.0%	0.4%	1.0%	0.9%	0.5%
<b>PERSONAL INCOME - CURR \$</b>								
Idaho (Millions)	0	0	0	329	911	-88	-296	-844
% Difference	0.0%	0.0%	0.0%	0.4%	1.0%	-0.1%	-0.3%	-0.8%
U.S. (Billions)	0	0	0	37	288	335	371	296
% Difference	0.0%	0.0%	0.0%	0.2%	1.4%	1.6%	1.7%	1.3%
<b>PERSONAL INCOME - 2012 \$</b>								
Idaho (Millions)	0	0	0	294	-7	-1,358	-1,620	-2,066
% Difference	0.0%	0.0%	0.0%	0.4%	0.0%	-1.6%	-1.8%	-2.3%
U.S. (Billions)	0	0	0	33	76	12	21	-45
% Difference	0.0%	0.0%	0.0%	0.2%	0.4%	0.1%	0.1%	-0.2%
<b>TOTAL NONFARM EMPLOYMENT</b>								
Idaho	21	30	36	25	-4,287	-8,127	-10,688	-14,133
% Difference	0.0%	0.0%	0.0%	0.0%	-0.5%	-1.0%	-1.3%	-1.6%
U.S. (Thousands)	0	0	0	0	-545	238	550	121
% Difference	0.0%	0.0%	0.0%	0.0%	-0.4%	0.2%	0.4%	0.1%
<b>GOODS PRODUCING SECTOR</b>								
Idaho	3	6	6	5	359	882	308	-745
% Difference	0.0%	0.0%	0.0%	0.0%	0.3%	0.6%	0.2%	-0.5%
U.S. (Thousands)	0	0	0	0	-65	-19	95	98
% Difference	0.0%	0.0%	0.0%	0.0%	-0.3%	-0.1%	0.5%	0.5%
<b>NONGOODS PRODUCING SECTOR</b>								
Idaho	18	23	30	20	-4,646	-9,008	-10,996	-13,388
% Difference	0.0%	0.0%	0.0%	0.0%	-0.7%	-1.3%	-1.5%	-1.8%
U.S. (Thousands)	0	0	0	0	-480	257	455	22
% Difference	0.0%	0.0%	0.0%	0.0%	-0.4%	0.2%	0.3%	0.0%
<b>SELECTED INTEREST RATES</b>								
Federal Funds Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%
Bank Prime Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%
30 year const. vs exist mortgage	-0.2%	-0.2%	-0.2%	-0.2%	-0.4%	-0.4%	-0.2%	-0.1%
<b>INFLATION</b>								
GDP Price Deflator	0.000	0.000	0.000	0.000	1.292	1.695	1.646	1.713
Personal Cons Deflator	0.000	0.000	0.000	0.000	1.123	1.768	1.863	1.835
Consumer Price Index	0.000	0.000	0.000	0.000	0.033	0.059	0.067	0.067

**National Variables Forecast by IHS Economics  
Forecast Begins the Second Quarter 2021**



## ALTERNATIVE FORECASTS

IHS sets its baseline, pessimistic, and optimistic forecast to indicate possible economic outcomes.

Baseline assumes current economic and policy conditions persist, pessimistic takes into account some possible negative shocks, and optimistic some possible positive shocks.

The IHS makes an assumption on the likelihoods of each event to happen. In July these likelihoods are 50%, 20%, and 30%, respectively. They were 50%, 25%, and 25% in the prior report. Thus, the firm believes that there is slightly more likelihood for an upside outcome than a downside one given current conditions. Besides the differences in consumer behavior discussed below, one upside opportunity is the passage of a federal infrastructure bill, something which has received a boost in the final days of July.

### A snapshot of the alternatives: national indicators

		2021	2022	2023	2024	2025	2026
Federal funds rate	pessimistic	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
	<b>baseline</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.5%</b>	<b>1.0%</b>	<b>1.5%</b>
	optimistic	0.1%	0.4%	0.7%	1.1%	1.6%	2.1%
Real GDP growth	pessimistic	6.1%	4.4%	2.7%	2.2%	2.0%	2.1%
	<b>baseline</b>	<b>6.6%</b>	<b>5.0%</b>	<b>2.1%</b>	<b>2.0%</b>	<b>2.1%</b>	<b>2.3%</b>
	optimistic	7.3%	6.1%	2.2%	1.8%	1.7%	1.8%
Nonfarm employment growth	pessimistic	2.6%	3.2%	1.5%	0.6%	0.5%	0.7%
	<b>baseline</b>	<b>2.8%</b>	<b>3.7%</b>	<b>1.7%</b>	<b>0.7%</b>	<b>0.5%</b>	<b>0.6%</b>
	optimistic	3.1%	3.8%	1.5%	0.7%	0.4%	0.5%

### A snapshot of the alternatives: Idaho indicators

		2021	2022	2023	2024	2025	2026
Nonfarm employment growth	pessimistic	3.4%	4.3%	3.0%	2.4%	2.2%	2.2%
	<b>baseline</b>	<b>3.4%</b>	<b>4.4%</b>	<b>2.8%</b>	<b>2.1%</b>	<b>2.0%</b>	<b>2.1%</b>
	optimistic	3.4%	5.0%	3.0%	2.2%	1.8%	1.9%
Personal income	pessimistic	16.0%	-6.5%	4.9%	4.8%	5.0%	5.4%
	<b>baseline</b>	<b>16.0%</b>	<b>-5.4%</b>	<b>5.1%</b>	<b>5.0%</b>	<b>5.2%</b>	<b>5.6%</b>
	optimistic	16.0%	-3.8%	5.6%	5.1%	4.9%	5.3%
Wages and salaries disbursement	pessimistic	8.4%	9.1%	5.3%	4.8%	4.8%	5.4%
	<b>baseline</b>	<b>8.4%</b>	<b>10.0%</b>	<b>5.7%</b>	<b>5.0%</b>	<b>4.8%</b>	<b>5.4%</b>
	optimistic	8.4%	11.2%	6.1%	5.2%	4.6%	5.2%

Overall, IHS assigns the economic turns between these scenarios to the outcome of the pandemic and the responses, by consumers and officials, to those turns. Consumer spending rises more slowly in the pessimistic case, whereas in the optimistic case, the strength of that scenario is ascribed primarily to households spending more quickly as well as spending some of their accumulated savings during 2020.<sup>1</sup> The interlink between the household consumption and official response is partly tied to inflation expectations. This is reflected in the Federal Reserve expected actions in the table.

<sup>1</sup> <https://www.reuters.com/world/us/us-household-wealth-rose-record-1369-trillion-q1-fed-says-2021-06-10/>

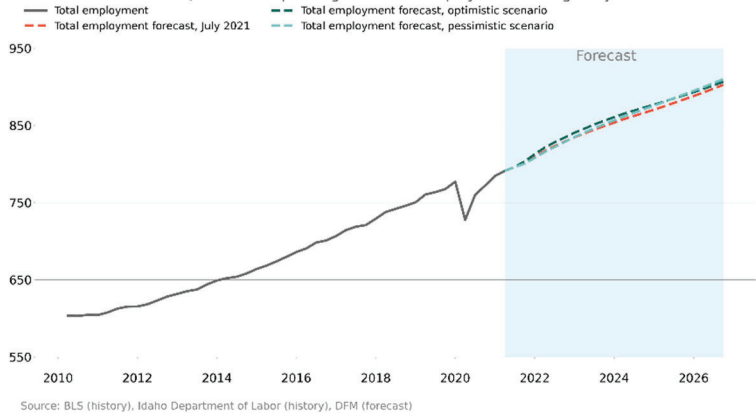
**IDAHO ECONOMIC FORECAST**  
**BASELINE AND ALTERNATIVE FORECASTS**  
**JULY 2021**

	BASELINE					OPTIMISTIC					PESSIMISTIC				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
<b>U.S. GDP (BILLIONS)</b>															
Current \$	20,937	23,080	24,779	25,824	26,929	20,937	23,264	25,338	26,487	27,597	20,937	22,932	24,280	25,158	26,058
% Ch	-2.3%	10.2%	7.4%	4.2%	4.3%	-2.3%	11.1%	8.9%	4.5%	4.2%	-2.3%	9.5%	5.9%	3.6%	3.6%
2009 Chain-Weighted	18,426	19,641	20,616	21,041	21,455	18,426	19,777	20,990	21,453	21,837	18,426	19,543	20,401	20,944	21,396
% Ch	-3.5%	6.6%	5.0%	2.1%	2.0%	-3.5%	7.3%	6.1%	2.2%	1.8%	-3.5%	6.1%	4.4%	2.7%	2.2%
<b>PERSONAL INCOME - CURR \$</b>															
Idaho (Millions)	89,145	96,793	97,848	102,801	107,965	89,145	97,146	99,468	105,057	110,446	89,145	96,429	96,648	101,380	106,275
% Ch	8.5%	8.6%	1.1%	5.1%	5.0%	8.5%	9.0%	2.4%	5.6%	5.1%	8.5%	8.2%	0.2%	4.9%	4.8%
U.S. (Billions)	19,728	21,085	21,279	22,175	23,149	19,728	21,180	21,634	22,649	23,663	19,728	20,978	20,908	21,632	22,421
% Ch	6.3%	6.9%	0.9%	4.2%	4.4%	6.3%	7.4%	2.1%	4.7%	4.5%	6.3%	6.3%	-0.3%	3.5%	3.7%
<b>PERSONAL INCOME - 2012 \$</b>															
Idaho (Millions)	80,209	84,488	83,597	86,235	88,826	80,209	84,731	84,637	87,618	90,246	80,209	84,319	83,439	86,943	90,185
% Ch	7.3%	5.3%	-1.1%	3.2%	3.0%	7.3%	5.6%	-0.1%	3.5%	3.0%	7.3%	5.1%	-1.0%	4.2%	3.7%
U.S. (Billions)	17,751	18,403	18,180	18,602	19,045	17,751	18,471	18,409	18,889	19,336	17,751	18,342	18,050	18,552	19,027
% Ch	5.1%	3.7%	-1.2%	2.3%	2.4%	5.1%	4.1%	-0.3%	2.6%	2.4%	5.1%	3.3%	-1.6%	2.8%	2.6%
<b>TOTAL NONFARM EMPLOYMENT</b>															
Idaho	759,082	793,265	819,390	841,963	860,054	759,082	794,129	823,997	848,318	867,042	759,082	793,095	818,381	843,247	863,904
% Ch	-0.2%	4.5%	3.3%	2.8%	2.1%	-0.2%	4.6%	3.8%	3.0%	2.2%	-0.2%	4.5%	3.2%	3.0%	2.4%
U.S. (Thousands)	142,252	146,183	151,543	154,061	155,160	142,252	146,647	152,166	154,412	155,422	142,252	145,997	150,601	152,872	153,816
% Ch	-5.7%	2.8%	3.7%	1.7%	0.7%	-5.7%	3.1%	3.8%	1.5%	0.7%	-5.7%	2.6%	3.2%	1.5%	0.6%
<b>GOODS-PRODUCING SECTOR</b>															
Idaho	127,721	134,992	139,942	143,396	146,482	127,721	135,453	141,971	145,653	148,831	127,721	135,074	139,862	144,503	148,827
% Ch	1.7%	5.7%	3.7%	2.5%	2.2%	1.7%	6.1%	4.8%	2.6%	2.2%	1.7%	5.8%	3.5%	3.3%	3.0%
U.S. (Thousands)	20,076	20,391	20,640	20,658	20,554	20,076	20,396	20,661	20,670	20,585	20,076	20,392	20,414	20,225	20,057
% Ch	-4.6%	1.6%	1.2%	0.1%	-0.5%	-4.6%	1.6%	1.3%	0.0%	-0.4%	-4.6%	1.6%	0.1%	-0.9%	-0.8%
<b>NONGOODS-PRODUCING SECTOR</b>															
Idaho	631,361	658,273	679,448	698,566	713,572	631,361	658,676	682,026	702,665	718,211	631,361	658,021	678,518	698,744	715,077
% Ch	-0.6%	4.3%	3.2%	2.8%	2.1%	-0.6%	4.3%	3.5%	3.0%	2.2%	-0.6%	4.2%	3.1%	3.0%	2.3%
U.S. (Thousands)	122,176	125,792	130,903	133,404	134,606	122,176	126,251	131,504	133,742	134,837	122,176	125,605	130,187	132,647	133,759
% Ch	-5.9%	3.0%	4.1%	1.9%	0.9%	-5.9%	3.3%	4.2%	1.7%	0.8%	-5.9%	2.8%	3.6%	1.9%	0.8%
<b>SELECTED INTEREST RATES</b>															
Federal Funds	0.4%	0.1%	0.1%	0.2%	0.5%	0.4%	0.1%	0.4%	0.7%	1.1%	0.4%	0.1%	0.1%	0.1%	0.1%
Bank Prime	3.5%	3.2%	3.3%	3.3%	3.7%	3.5%	3.2%	3.5%	3.8%	4.3%	3.5%	3.2%	3.3%	3.3%	3.3%
30 year construction Mortgage	3.1%	3.0%	3.5%	3.8%	4.1%	3.1%	3.0%	3.6%	4.0%	4.2%	3.1%	3.0%	3.3%	3.4%	3.6%
<b>INFLATION</b>															
GDP Price Deflator	1.2%	3.4%	2.3%	2.1%	2.3%	1.2%	3.5%	2.6%	2.3%	2.4%	1.2%	3.3%	1.4%	0.9%	1.4%
Personal Cons Deflator	1.2%	3.1%	2.1%	1.8%	2.0%	1.2%	3.2%	2.4%	2.0%	2.1%	1.2%	2.9%	1.2%	0.7%	1.1%
Consumer Price Index	1.2%	3.7%	2.4%	2.1%	2.1%	1.2%	3.8%	2.8%	2.2%	2.2%	1.2%	3.5%	1.6%	0.9%	1.2%

As is apparent from the accompanying graph, the employment outlooks are each relatively optimistic for Idaho. In the pessimistic scenario, IHS assumes the Federal Funds rate to be set at close to zero. This leads to lower interest rates, including mortgage rates. Lower interest rates aid housing and construction employment in the pessimistic case.

#### Idaho employment outlook, thousand

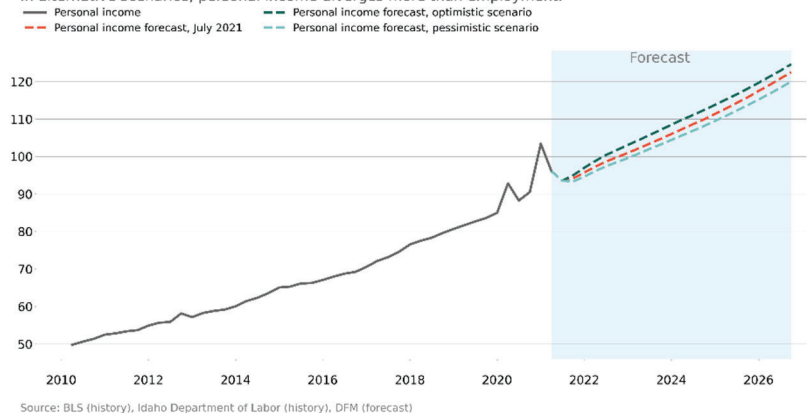
In alternative scenarios, consumer spending differs but employment is not greatly affected in Idaho.



The net effect on personal income within Idaho between the three scenarios shows greater spread compared to the employment. The spread five years in the future amounts to \$2.3 billion between the pessimistic and baseline cases, and \$2.2 billion between the optimistic and baseline cases.

#### Idaho personal income outlook, thousand

In alternative scenarios, personal income diverges more than employment.



## **APPENDIX**

IHS Markit's US Macroeconomic Model .....	Page 26
Idaho Economic Model: .....	Page 28
Exogenous Variables .....	Page 30
Endogenous Variables .....	Page 32

## THE IHS Markit US MACROECONOMIC MODEL

IHS Markit (IHS) Macroeconomic Model is a multiple-equation model of the US economy. Consisting of over 1,200 equations, the model is solved iteratively to generate the results of different policy and forecast scenarios. The model incorporates the best insights of many theoretical schools of thought to depict the economic decision processes and interactions of households, businesses, and governments.

The IHS model is divided into the following eight major sectors:

- I Private Domestic Spending**
- II Production and Income**
- III Taxes**
- IV International Transactions**
- V Financial**
- VI Inflation**
- VII Supply**
- VIII Expectations**

- I. **Private Domestic Spending.** Major aggregate demand components include consumption, investment, and government. Consumer purchases are divided among three categories: durable goods, nondurable goods, and services. In nearly all cases, real expenditures are influenced by real income and the relative price of consumer goods. Durable and semi-durable goods are also sensitive to household net worth, current finance costs, and consumer sentiment.

IHS divides investment into two general categories: fixed investment and inventories. The former is driven by utilization rates, capital stock, relative prices, financial market conditions, financial balance sheet conditions, and government policies. Inventory investment is heavily influenced by such factors as past and present sales levels, vendor performance, and utilization rates.

The government sector is divided into federal government and state and local government. Most of the federal expenditure side is exogenous. Federal receipts are endogenous and divided into personal taxes, corporate taxes, indirect business taxes, and contributions for social insurance. State and local sector receipts depend primarily on federal grants and various tax rates and bases. State and local government spending is driven by legal requirements (i.e., balanced budgets), the level of federal grants (due to the matching requirements of many programs), population growth, and trend increases in personal income.

- II. **Production and Income.** The industrial production sector includes 74 standard industrial classifications. Production is a function of various cyclical and trend variables and a generated output term, i.e., the input-output (I-O) relationship between the producing industry and both intermediate industries and final demand. The cyclical and trend variables correct for changes in I-O coefficients that are implied by the changing relationship between buyers and sellers.

Pre-tax income categories include private and government wages, corporate profits, interest rate, and entrepreneurial returns. Each of these categories, except corporate profits, is determined by some combination of wages, prices, interest rates, debt levels, capacity utilization rate, and unemployment rate. Corporate profits are calculated as the residual of total national income less the nonprofit components of income mentioned above.

- III. **Taxes.** The model tracks personal, corporate, payroll, and excise taxes separately. Tax revenues are simultaneously forecast as the product of the rate and the associated pre-tax income components. The model automatically adjusts the effective average personal tax rate for variations in inflation and income per household, and the effective average corporate rate for credits earned on equipment, utility structures, and R&D. State taxes are fully endogenous, except for corporate profits and social insurance tax rates.
- IV. **International.** The international sector can either add or divert strength from the central flow of domestic income and spending. Imports' ability to capture varying shares of domestic demand depends on the prices of foreign output, the US exchange rate, and competing domestic prices. Exports' portion of domestic spending depends on similar variables and the level of world gross domestic product. The exchange rate itself responds to international differences in inflation, interest rates, trade deficits, and capital flows between the US and its competitors. Investment income flows are also explicitly modeled.
- V. **Financial.** The IHS model includes a highly detailed financial sector. Several short- and long-term interest rates are covered in this model, and they are the key output of this sector. The short-term rates depend upon the balance between the demand and supply of reserves in the banking system. The supply of reserves is the primary exogenous monetary policy lever within the model, reflecting the Federal Reserve's open market purchases or sales of Treasury securities. Longer-term interest rates are driven by shorter-term rates as well as factors affecting the slope of the yield curve. These factors include inflation expectations, government borrowing requirements, and corporate finance needs.
- VI. **Inflation.** Inflation is modeled as a controlled, interactive process involving wages, prices, and market conditions. The principal domestic cost influences are labor compensation, nonfarm productivity, and foreign input costs that later are driven by the exchange rate, the price of oil, and foreign wholesale price inflation. This set of cost influences drives each of the industry-specific producer price indexes, in combination with a demand pressure indicator and appropriately weighted composites of the other producer price indexes.
- VII. **Supply.** In this model, aggregate supply (or potential GNP), is estimated by a Cobb-Douglas production function that combines factor input growth and improvements to total factor productivity. Factor input equals a weighted average of labor, business fixed capital, and energy. Factor supplies are defined by estimates of the full employment labor force, the full employment capital stock net of pollution abatement equipment, the domestic production of petroleum and natural gas, and the stock of infrastructure. Total factor productivity depends upon the stock of research and development capital and trend technological change.
- VIII. **Expectations.** Expectations impact several expenditure categories in the model, but the principal nuance relates to the entire spectrum of interest rates. Shifts in price expectations or the expected government capital needs influences are captured directly in this model through price expectations and budget deficit terms. The former impacts all interest rates and the latter impacts intermediate- and long-term rates. On the expenditure side, inflationary expectations impact consumption via consumer sentiment, while growth expectations affect business investment.

## THE IDAHO ECONOMIC MODEL

The Idaho Economic Model (IEM) is an income and employment-based model of Idaho's economy. The Model consists of a simultaneous system of linear regression equations, which are estimated using quarterly data. The primary exogenous variables are obtained from the IHS Markit US Macroeconomic Model. Endogenous variables are forecast at the statewide level of aggregation.

The focal point of the IEM is Idaho personal income, which is given by the identity:

**personal income = wage and salary payments + other labor  
income + farm proprietors' income + nonfarm proprietors'  
income + property income + transfer payments - contributions  
for social insurance + residence adjustment.**

Except for farm proprietors' income and wage and salary payments, each of the components of personal income is estimated stochastically by a single equation. Farm proprietors' income and wage and salary payments each comprise sub-models containing a system of stochastic equations and identities.

The farm proprietor sector is estimated using a sub-model consisting of equations for crop marketing receipts, livestock marketing receipts, production expenses, inventory changes, imputed rent income, corporate farm income, and government payments to farmers. Farm proprietors' income includes inventory changes and imputed rent, but this component is netted out of the tax base.

At the heart of the IEM is the wage and salary sector, which includes stochastic employment equations for 23 North American Industry Classification System employment categories. Conceptually, the employment equations are divided into basic and domestic activities. The basic employment equations are specified primarily as functions of national demand and supply variables. Domestic employment equations are specified primarily as functions of state-specific demand variables. Average annual wages are estimated for several broad employment categories and are combined with employment to arrive at aggregate wage and salary payments.

The demographic component of the model is used to forecast components of population change and housing starts. Resident population, births, and deaths are modeled stochastically. Net migration is calculated residually from the estimates for those variables. Housing starts are divided into single and multiple units. Each equation is functionally related to economic and population variables.

The output of the IEM (i.e., the forecast values of the endogenous variables) is determined by the parameters of the equations and the values of exogenous variables over the forecast period. The values of equation parameters are determined by the historic values of both the exogenous and endogenous variables. IEM equation parameters are estimated using the technique of ordinary least squares. Model equations are occasionally re-specified in response to the dynamic nature of the Idaho and national economies. Parameter values for a particular equation (given the same specification) may change as a result of revisions in the historic data or a change in the time interval of the estimation. In general, parameter values should remain relatively constant over time, with changes reflecting changing structural relationships.

While the equation parameters are determined by structural relationships and remain relatively fixed, the forecast period exogenous variable values are more volatile determinants of the forecast values of endogenous variables. They are more often subject to change as expectations regarding future economic behavior change, and they are more likely to give rise to debate over appropriate values. As mentioned

above, the forecast period values of exogenous variables are primarily obtained from the IHS US macroeconomic model.

Since the output of the IEM depends in large part upon the output of the IHS model, an understanding of the IHS model, its input assumptions, and its output is useful in evaluating the results of the IEM's forecast. The assumptions and output of the IHS model are discussed in the National Forecast section.



## NATIONAL EXOGENOUS VARIABLES

CPI	Consumer price index, all-urban, 1982-84=1.00
CRCATCVS	Cash receipts, US cattle and calves
CRCROP	Cash receipts, US crops
CRDAIRY	Cash receipts, US dairy
CSVOR	Real Consumer Spending -Other services, billion 2012 dollars annual rate
DUMCENSUS	These are dummy variables used in regression equations to capture the impacts of discrete economic or noneconomic events such as strikes, plant opening or closures, unusual weather conditions, etc.
ECON	Employment in construction
EDRIPS	Economic depreciation rate software
EEA	National Nonfarm Payrolls
EMD321	Employment in wood products
EMN311	Employment in food manufacturing
EMN323	Employment in printing and related support activities
ENRM21	Employment in mining
EOTS	Employment--Other Services, millions
EPBS54	Employment--Professional, Scientific & Technical, millions
EPBS55	Employment--Management of Companies & Enterprises, millions
EPBS56	Employment--Administrative, Support, Waste Management, Remediation, millions
EXPUS\$	Nonagricultural production expenses
GDPR	Real gross domestic product, billions of chained 2012 dollars, annual rate
GF	Federal purchases of goods and services
GFGIIPRDR	Real federal investment in research and development, billions of chained 2012 dollars, annual rate
GFML	Federal defense purchases of goods and services
GFMLCWSS	Federal government defense personnel outlays
GFOCWSS	Federal government nondefense personnel outlays
HHAF	Household financial assets
HHAO	Household holdings of real estate and other nonfinancial assets
ID0IP2122_2123	Industrial production index, metal and nonmetal ore mining, 2012=100.0
IPSG311	Industrial production index, food, 2012=100.0
IPSG321	Industrial production index, wood products, 2012=100.0
IPSG322	Industrial production index, paper, 2012=100.0
IPSG323	Industrial production index, printing, 2012=100.0
IPSG3253	Industrial production index, agricultural chemicals, 2012=100.0
IPSG332	Industrial production index, fabricated metal products, 2012=100.0
IPSG3332	Industrial production index, industrial machinery, 2012=100.0
IPSG334	Industrial production index, computer and electronic products, 2012=100.0
IPSG3342	Industrial production communications equipment, 2012 = 100.0
IPSG335	Industrial production index, electrical equipment, appliances, and components, 2012=100.0
IPSG339	Industrial production index, miscellaneous manufacturers, 2012=100.0
IPSG51111	Industrial production index, newspaper publishing, 2012=100.0
IPSN32732T9	Industrial production index, concrete and cement products, 2012=100.0
JECIWSP	Employment cost index—private sector wages and salaries, December 2005=1.00
JEXCHBROAD	Broad U.S. trade-wtd. value of the dollar, index, 2012=1.0

JEXCHMTPREAL	Real US trade-weighted exchange rate with major currency trading partners, 2005=1.00
JEXCHOITPREAL	Real US trade-weighted exchange rate with other important trading partners, 2009=1.00
JPC	Implicit price deflator, personal consumption, 2009=100.0, chain weighted
MINWAGE	Minimum wage, dollars, hourly rate
N	Population, US
N16A	Population, US, aged 16 and older
RMMTG30CON	Commitment rate on conventional 30-year mortgage
RMMTGEXIST	Effective conventional mortgage rate, existing homes, combined lenders
RUC	Civilian unemployment rate, percent
TRF\$US	Government payments to US farms
TXSIDOM	Domestic social security tax receipts
WPI01	Producer price index, farm products, 1982=1.0
WPI02	Producer price index, processed foods and feeds, 1982=1.0
WPI08	Producer price index, lumber and wood products, 1982=1.0
WPI10	Producer price index, metals and metal products, 1982=1.0
YP	Personal income
YPAINT	Personal interest income
YPCOMPSUPPAI	Other labor income, US
YPCOMPWSD	Wage and salary disbursements
YPPROPADJF	Farm proprietors' income (with inventory valuation and capital consumption adjustments)
YPPROPADJNF	Nonfarm proprietors' income (with inventory valuation and capital consumption adjustments)
YPRENTADJ	Rental income of persons with capital consumption adjustment
YPTRFGF	Federal transfer payments to individuals
YPTRFGSL	State and local transfer payments to individuals
ZADIV	Dividend payments, billons of dollars, annual rate