



# Idaho Economic Forecast

Brad Little, Governor      DIVISION OF FINANCIAL MANAGEMENT  
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July 2022

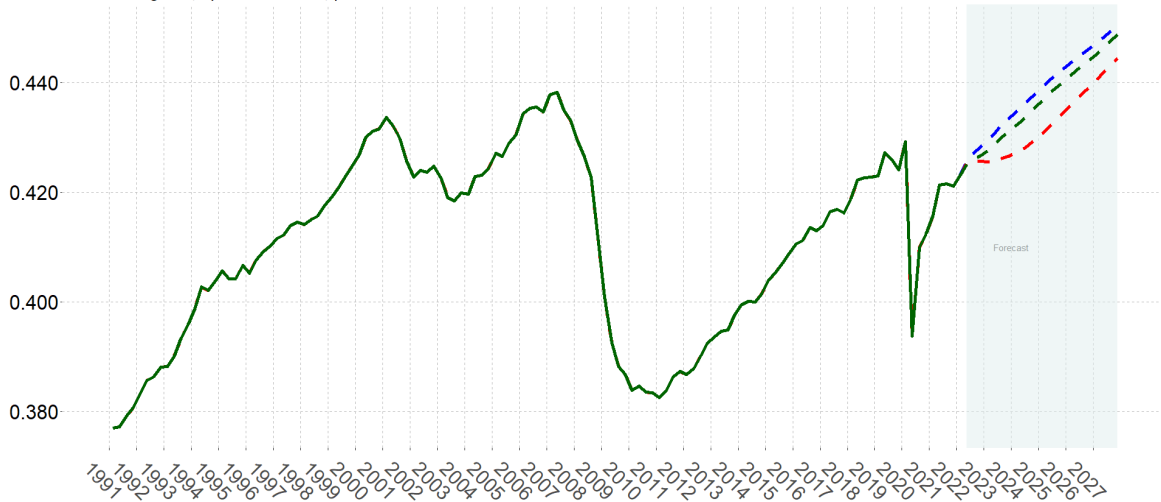
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- Forecast begins the second quarter of 2022
- Alternative forecasts

## ID jobs per capita

baseline in dark green, optimistic in blue, pessimistic in red



History: BLS/Census; Forecast: DFM

**Idaho  
Economic  
Forecast  
2022–2027**

State of Idaho  
BRAD LITTLE  
Governor

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## Introduction

This document summarizes Idaho's economic forecast for 2022 through 2027. The primary national forecast in this report is the July 2022 IHS Markit (IHS is now part of S&P) 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 Open Market Committee decisions. Alternative Idaho economic forecasts are developed under different policy and growth scenarios at the national level. Three of these forecasts are included in this report.

The Idaho Department of Labor provides monthly historical employment data that are then seasonally adjusted and converted to quarterly frequencies by DFM. For this report, historical employment data is complete through the first quarter of 2022.

Historical and forecast data for Idaho are available. These are now provided via [link](#) within this pdf document. We appreciate the State Controller's office for cooperation with posting the data through its Transparency Idaho website and will update as that link becomes available.

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 the mortgage market since the pandemic began ([June 27](#)), supply and demand in connection with inflation ([June 21](#)), and the natural rate of unemployment ([May 31](#)), among other interesting topics.

**Cover.** With the two most recent quarters of GDP contraction at the national level, it is expected that some readers will ask if this forecast sees a recession for Idaho. The content of the cover graph provides some illustration suggesting, no, DFM does not see a recession looming for Idaho given the data available and the current national outlook from IHS. Even the pessimistic case looks milder than the "dot-com" recession's effect on Idaho. The dot-com recession is widely thought to have skipped over Idaho.

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

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This Idaho economic forecast uses the July 2022 edition of the IHS forecast of the US economy. DFM runs the Idaho economic model based upon this national forecast to produce Idaho's economic forecast.

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## Summary

**Near term.** The first quarter of 2022 saw real GDP contract 1.6 percent at an annualized rate. July 28 brought the first reading of second quarter GDP. Again there was a contraction, measured now at 0.9 percent. These measures take into account the elevated inflation the US is undergoing; that is the meaning of the word “real.” Just prior to that GDP news release, the Federal Reserve increased its policy interest rate by 0.75 percentage points, moving to the 2.25–2.5 percent range. Raising that rate has historically worked to counter inflationary pressures.

Inflation and subsequent Federal Reserve policy changes as well as the war in Ukraine remain major drivers in this forecast, as they were for the April forecast. IHS largely follows the forward guidance from the Federal Reserve, so the overnight lending rate is expected to reach 3.25–3.5 percent by the close of the year. It began the year at 0–0.25 percent. Raising this interest rate is intended to cool the economy by reducing demand so that the available supply more closely matches that demand relieving some inflationary pressure. That is the ultimate aim of the Federal Reserve: moving inflation close to its 2 percent annual average target rate.

One expected avenue for the economy cooling is through milder housing activity. Higher interest rates have been followed by higher mortgage rates, and the bidding up or even over bidding of properties seems to be less prevalent in some markets, including in San Francisco. Another route by which higher interest rates may lead to less feverish economic activity is in the auto market. Loan and lease rates are also climbing, and as with house prices, average new and used car prices are at or near historic highs. Together, high prices and more expensive lending rates deter some buyers or force buyers to seek more frugal alternatives than might have been considered when rates were lower.

The US unemployment rate fell from the January 2022 reading of 4.0 percent for the nation to 3.6 percent in March according to the Bureau of Labor Statistics.<sup>1</sup> It has remained at that rate since then. IHS forecasts increasing unemployment, with 4.3 percent possible in 2023. Idaho continues to experience unemployment around 2.5 percent, below the national average. This has rate has remained consistent over the last few months.

The most recent Idaho unemployment rate has been 2.5 percent, a rate that has been sustained for several months.

Oil prices quickly escalated with the Russian invasion of Ukraine. Oil prices have come down since then. [West Texas](#) intermediate oil prices in Cushing, OK have also followed global pricing

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<sup>1</sup>BLS

pressures. Oil prices are high, but no longer pinned at the top end of forecasts. IHS sees a medium-term projection (towards the end of 5 years) nearer to 93 dollars per barrel.

<b>Annual rates</b>	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
US nonfarm jobs	1.56	1.34	-5.80	2.78	3.91	0.86	0.01	0.42	0.54	0.41
ID nonfarm jobs	3.28	2.95	-0.06	5.03	3.64	2.42	2.60	2.70	2.50	2.37
US personal income	5.08	4.06	6.53	7.46	2.82	4.71	4.55	4.87	4.77	4.60
ID personal income	6.40	6.72	8.85	9.96	5.76	6.12	6.60	6.48	6.29	6.29
US wage & salary	5.02	4.75	1.29	9.53	9.73	4.86	4.15	4.56	4.40	4.12
ID wage & salary	7.06	5.66	7.00	13.00	12.57	7.06	6.73	7.12	6.98	6.91
US population	0.57	0.49	0.34	0.14	0.35	0.46	0.50	0.53	0.54	0.54
ID population	1.88	2.11	3.28	2.88	2.35	1.45	1.56	1.59	1.51	1.39

**Longer term.** This forecast continues to see Idaho population growing more quickly than the US population. Migration from another US state into Idaho is bureaucratically frictionless compared with moving across national borders. Migration is expected to show about 30,000 net people moving to the state per year. Births are in the low-20,000s and deaths are not far behind, in the high-teens (of thousands). Thus natural increase in the state is in the mid-to-high single thousands, and so migration into the state is responsible for the preponderance of the expected population growth in Idaho.

In contrast, IHS recently revised its population projections, putting 40 percent of US population growth due to (international) immigration, and the remaining 60 percent of US population growth due to natural increase (which is births minus deaths). The consequence of these two assumptions becomes visible in the population growth rates in the accompanying table.

Population is driven by job growth within the Idaho economic model. Hence the migration expectation reflects continued labor market expansion within the state at a robust level. The BLS survey called Job Openings and Labor Turnover Survey (JOLTS) has consistently indicated that there are more job openings than unemployed people within the state. It estimates around three openings for each unemployed person.<sup>2</sup> This demand for workers is substantial enough that even in light of the Federal Reserve actions to cool the economy, it is likely to be quite a while before parity between openings and unemployed Idahoans is reached, and so a tight labor market is expected to persist for the near future. That tight labor market is expected to draw in migrants from other states, as it has done for the last handful of years.

IHS's forecast for the US labor market shows employment fairly flat, particularly about one and one half years from now. Employment in 2022 is expected to average 158.5 million nonfarm jobs. By 2024 the average is expected to be 159.7 million nonfarm jobs. Growth of 1.2 million jobs in in two years is less than a single year's growth pre-pandemic. Much of this has to do with the slower population growth primarily due to immigration across the past half of a decade which has resulted in fewer people entering the prime working ages. There also seems to be a

<sup>2</sup>An unemployed person is one who has looked for work within the past 4 weeks.

settling into a new labor market structure subsequent to the pandemic disruptions, with labor force participation not rebounding as quickly as openings have.

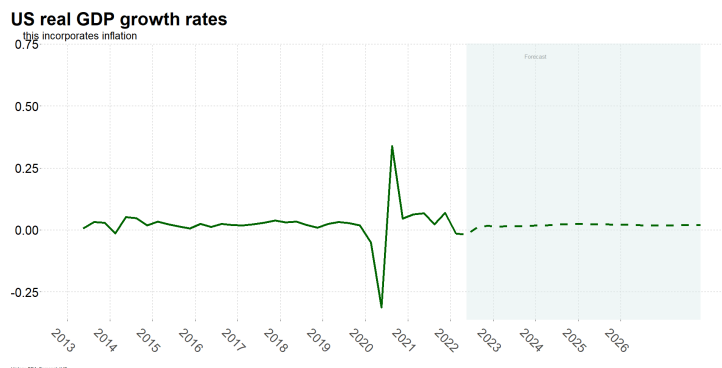
With greater job growth, it is unsurprising that personal income growth in Idaho is expected to exceed the national measure. This is aided by personal income still being lower in Idaho than the US average.



## Current economic conditions

### Domestic conditions.

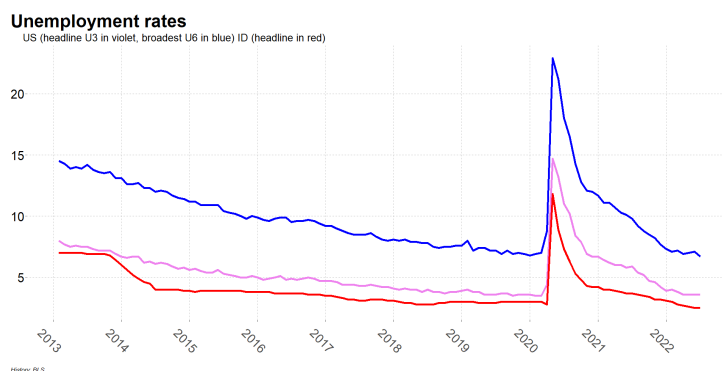
*GDP growth.* IHS 2022Q2 forecast of a -1.3 percent contraction just before Q2 preliminary GDP estimates were released on July 28th reflect pessimism about the national economy. Should the current estimate of -0.9 percent for 2022Q2 hold then the first half of the year will have seen a shrinking US economy. First quarter was measured at -1.6 percent by the Bureau of Economic Analysis (the BEA is part of the Department of Commerce) in its final assessment.<sup>3</sup> Two subsequent revisions of the -1.3 percent number will be made in the coming months as data for the measure become more complete.



Here are the IHS forecasts for real GDP released in July the past three years.

<b>Real US GDP</b>	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
current	2.92	2.29	-3.40	5.67	1.44	1.25	1.86	2.34	2.10	1.89
one year ago	3.00	2.16	-3.49	6.59	4.96	2.06	1.97	2.13	2.32	
two years ago	2.93	2.33	-6.10	3.75	3.56	3.34	2.88	2.73	2.46	

*Labor market.* The US unemployment rate is at 3.6 percent. The Bureau of Labor Statistics, in table A-15 of the [employment situation](#) report, shows the recent trend in the U-6 unemployment rate — the broadest measure of unemployment for the US — with a substantial improvement in this measure across the past year. A full picture can be found via this link [U6](#).



From October 2021 through January 2022, nonfarm jobs in the US increased by an average of 600 thousand per month. From February through June of 2022, the average was 381. IHS is forecasting the next three months to be closer and then below 200 thousand per month. Prior to the pandemic, increases of 150 thousand were

<sup>3</sup>Both values are represented at annualized rates, meaning that if four consecutive quarters were to occur with similar growth or contraction, the end result would be an economy which differed by that percentage. Annualized figures are typically used in the US.

needed to keep the unemployment rate stable. Changes in labor force participation have altered that. For example, the unemployment rate has been 3.6 percent since March.

Idaho's unemployment [rate](#) has been stable near 2.5 percent for several months. Here are the DFM projections for nonfarm job growth across this and the past two July forecasts.

<b>ID job growth</b>	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
current	3.28	2.95	-0.06	5.03	3.64	2.42	2.60	2.70	2.50	2.37
one year ago	3.28	2.95	-0.18	4.50	3.29	2.75	2.15	1.95	2.09	
two years ago	3.28	2.95	-2.40	3.49	3.73	2.77	2.27	2.40	2.55	

*Monetary policy.* The Federal Reserve's Open Market Committee (FOMC) has raised the overnight lending rate four times this year, by 0.25, 0.5, 0.75 and 0.75 percentage points. The first 0.75 percentage point increase caught my analysts by surprise and demonstrated an aggressive approach by the FOMC. The most recent increase was more in line with expectations. IHS sees the Fed moving this rate up to 3.25–3.5% by the close of the year. We began the year with the rate in the FOMC's target range of 0–0.25%.

The FOMC is reacting to inflation, as are other central banks, including the Bank of Canada, the Bank of England, and the European Central Bank. These banks have raised interest rates, each having at least one 0.5 percentage point increase this year. The Bank of Japan, where inflation has so-far been more muted, has not raised interest rates.

Interest rates are pushed higher in order to cool inflation within the economy. Measured by the consumer price index (CPI), nationwide inflation has reached 8.5 percent in March over the prior March, then 8.8 percent in April, and 9.1 percent in May. In the Intermountain West, that local measure is even higher, at 10.4 percent, 10.1 percent, and 9.9 percent, respectively; see the current [CPI](#) release, table 4 for the most recent reading, and consult [their archive](#) of CPI releases for past history.

The situation with inflation has upended the Federal Reserve's take on the economy. This is visible in the graphs in 3.A,C–E of their summary of economic projections; here are the most recent two for comparison: [\(March SEP\)](#) and [\(June SEP\)](#) IHS has generally adopted the view expressed by the median reading for each economic statistic — particularly the overnight rate which the Federal Reserve endeavors to control — in these SEP files for its official forecast.

*Fiscal policy.* The current forecast does not indicate any substantial fiscal policy change other than the sale of oil from the Strategic Petroleum Reserve in order to combat energy prices. In IHS's analysis, the effects on GDP are temporary reductions, then temporary boosts to the annualized quarterly figures. The reduction is by 0.4 percentage points in 2022Q2 and 0.1 percentage points in 2022Q3. A near mirror image with slight boosts to GDP occurs in early 2023 as the draw-down ends.

*Housing market.* In April, we noted that IHS revised its demographic view of the US, increasing international immigration across the next few years back toward its pre-pandemic levels. That

should produce extra demand for housing. The firm has also noted that there is a rate of household (one could think of family units) formation which has been declining the past few decades. That should dampen demand for housing. Overall, the effect is that household formation, and hence demand for housing, is expected to grow at about 0.9 percent per year rather than 1 percent per year as was typical in the decade prior to the pandemic.

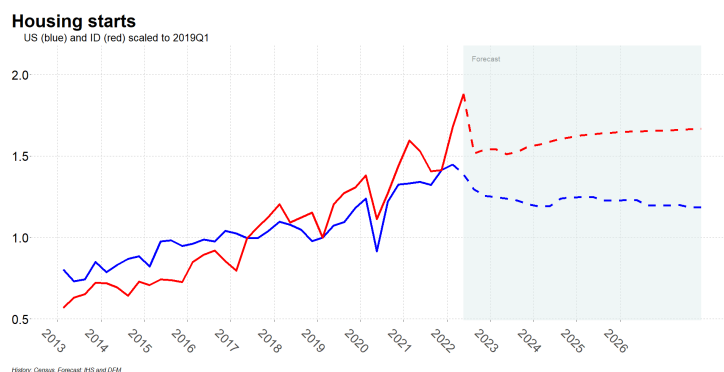
*Personal income in Idaho.* First quarter data from the Bureau of Economic Analysis showed 2022Q1 personal income in Idaho increased more than had been forecast in earlier editions of this publication. Consequently, personal income is revised upward in level. In terms of average growth rates, personal income is expected to increase by 6.2 percent whereas it was projected at 6.7 percent, both looking at averages until 2025 of forecast. This compares with 4.5 percent nationally in the current forecast, and 4.9 percent in the earlier forecast.

Idaho's personal income forecast is aided by its jobs outlook, which in turn relies upon its population outlook. Whereas Idaho can draw from other US states for migration, the US jobs market relies upon international immigration. Moving from Colorado to Idaho is substantially easier than moving across most international borders.

#### *Housing starts and population in Idaho.*

Net movers in their 30s to Idaho have been 7,200 per year across 2018–2021. We are forecasting that across 2022–2025 this cohort addition will be over 50,000. The computation for this accounts for (and does not put those people into the tallies just given) the current residents who would age into their 30s and who would remain in Idaho.

The 30s are the prime years for first-time home buying. To a degree harmonious with that forecast, housing starts are expected to remain elevated in Idaho. Single family starts are traditionally less erratic than multi-family starts, which can be influenced by large projects getting underway. There are plenty of these still within the pipeline, including some in the Treasure Valley (Southside Blvd. in Nampa, Lincoln Rd. in Caldwell) and in Kootenai County.



**Global conditions.** IHS characterises the global economy as follows:

After a strong finish to 2021, the global economic climate is shifting rapidly, putting forecasters on recession watch. With inflation at a fever pitch, central banks around the world are raising interest rates with new urgency, hoping to cool inflation by slowing growth of aggregate demand and achieving a closer balance with supply. While several countries will experience brief contractions in real GDP, we [IHS] are not forecasting a global recession.

China aims for 5.5% real GDP growth, but IHS has them at 5.1% in March. IMF placed growth in 2022 at 4.4% for China, with the estimate current as of April. Shanghai was locked down across much of April and May. IHS places growth for China at 4.0% in 2022 followed by 5.2% in 2023, noting that after the re-opening of Shanghai and other cities from Covid lockdowns, indicators show a rebound in Chinese output.

## Economic outlook

US growth rates	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
US nonfarm jobs	1.6	1.3	-5.8	2.8	3.9	0.9	0.0	0.4	0.5	0.4
US population	0.6	0.5	0.3	0.1	0.3	0.5	0.5	0.5	0.5	0.5
Total personal income	5.1	4.1	6.5	7.5	2.8	4.7	4.5	4.9	4.8	4.6
...inflation adjusted ...	2.9	2.5	5.3	3.5	-3.1	1.7	2.8	3.0	2.7	2.6
Wage & salary payments	5.0	4.8	1.3	9.5	9.7	4.9	4.1	4.6	4.4	4.1
...average US wage ...	3.4	3.4	7.5	6.6	5.6	4.0	4.1	4.1	3.8	3.7

ID growth rates	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ID nonfarm jobs	3.28	2.95	-0.06	5.03	3.64	2.42	2.60	2.70	2.50	2.37
ID population	1.88	2.11	3.28	2.88	2.35	1.45	1.56	1.59	1.51	1.39
ID personal income	6.40	6.72	8.85	9.96	5.76	6.12	6.60	6.48	6.29	6.29
...inflation adjusted ...	4.18	5.16	7.59	5.91	-0.32	3.04	4.81	4.59	4.20	4.21
Wage & salary payments	7.06	5.66	7.00	13.00	12.57	7.06	6.73	7.12	6.98	6.91
...average wage ...	3.82	3.35	6.78	7.73	8.86	4.73	4.12	4.36	4.45	4.51

*Housing starts and construction.* The outlook for housing is slower in this forecast than the earlier one in the spring. IHS summarizes the outlook for the next few quarters as: “In our July forecast, housing starts drop for eight straight quarters, starting in the second quarter” of 2022. Within the marketplace for homes, the firm finds: “Home sales are expected to fall from a 14-year height of 6.90 million in 2021 to 6.22 million in 2022 and 5.98 million in 2023.” That represents an average decline of 7 percent across 2022–2023 in home sales volume.

		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
US	growth	3.54	3.50	8.06	15.06	-0.40	-8.66	-1.03	1.68	-2.01	-1.74
	single units	871,417	888,583	1,001,917	1,131,083	1,093,357	1,037,083	1,020,614	1,026,429	1,005,897	988,400
	multi units	375,917	402,417	393,167	474,083	505,407	423,183	424,599	443,123	434,164	426,607
ID	growth	14.78	4.71	8.73	14.24	11.26	-7.30	4.06	2.59	0.95	0.65
	single units	13,025	13,015	14,558	16,416	16,208	16,616	17,667	18,154	18,499	18,850
	multi units	3,057	3,828	3,745	4,505	7,066	4,963	4,787	4,882	4,757	4,558

Construction jobs within Idaho continue to be bolstered by the expected stronger Idaho housing market in terms of starts. Other drivers also point towards expansion of construction jobs in the state. Some of this has to do with the structure of federal support given to the states. Many project will have funds from the stimulus bills, including the IIJA, the infrastructure bill in 2021. Others come from local funds, including several water and sewer projects: Boise and Nampa are undergoing major renovations at their treatment plants, and funds have been set aside for raising Anderson Ranch dam. Idaho, by HB0362 of the 2021 legislative session, has also been directing a greater share of sales tax revenue towards road projects. Still others have

to do with ordinary federal support. An example is a \$2 million grant from the US Bureau of Reclamation to Northside Pumping, a Jerome irrigation district.

*Investment and wealth.* The expectation for the S&P 500 index in the IHS forecast is for the total market capitalization in that index to average under \$34 trillion in 2023, just slightly below the average it is expected to maintain in 2022. It was valued at \$36.7 trillion in 2021. Even in 2024, the capitalization is expected to be just shy of \$36 trillion. For those following the indices, the 2021 average was over 4300, this year it is expected under 4100, with next year at 4000, and then 2024 bringing it back to just under 4300. Consequently, the stock market is not expected to deliver substantial wealth in the near-term.

In terms of home prices, IHS is predicting a moderation in growth. The median US home was 354 thousand dollars in 2021, and it is predicted to be 384 thousand dollars in 2023. That represents 4 percent average annual growth, which is much less than the 18.5 percent annual price increase recorded across 2021 for the median US home.

The CoreLogic House Price Index increased from near 200 to over 300 across 2018–2022. It is expected to increase to just under 340 by 2027, with the bulk of that gain by 2023. Transitioning back from an index to actual price, the median price of a single family home increased from \$260 thousand in 2018 to over \$390 thousand in 2022. It is expected to increase to just over \$440 thousand by 2027. Annual increases in value exceeding 10 percent, as were common in 2018–2022 are expected to moderate to annual increases under 3 percent across 2022–2027. Thus, in IHS’s view, the housing market is expected to continue to provide an avenue for accretion of wealth across a few years, but not to the extent it has recently.

For comparison we might look towards one of the government sponsored enterprises involved in the US mortgage market. In the case of Freddie Mac, the [outlook](#) from that firm along the lines IHS considers plausible. In Freddie Mac’s view, house price appreciation to slow from 10+ percent the past three years to 4 percent growth in 2023.

Housing and equities have dominated recent changes in wealth at the national level, as may be surmised from this discussion. To see to what degree, the Federal Reserve provides an [interactive](#) manner for assessing net changes across time. Price gains in the housing market in Idaho suggest similar trends for Idahoan’s wealth.

For Idaho, migration also explains a substantial portion of the increase in overall state personal income. The IRS documents this through its Statistics of Income program. For instance, retrieving the [data](#) for Idaho shows<sup>4</sup> a \$2 billion increase in personal income in Idaho due to migration into the state across 2019–2020. For context, total personal income in the state was almost \$82 billion in 2019. Migration was responsible for 2–2.5 percent of state personal income which is equivalent to an entire quarter’s increase in state personal income.

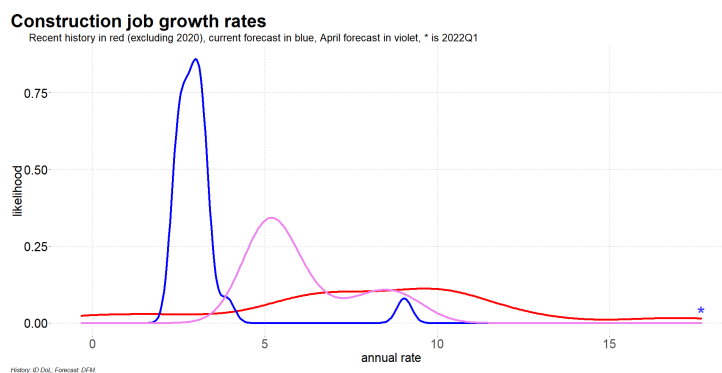
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<sup>4</sup>G7 of state inflow minus the corresponding cell value from state outflow.

*Sectors.* Water projects are ramping up, and so is roadwork, both from local and federal funds. For example, \$20 million is directed towards Lake Coeur d’Alene water quality improvements from the Leading Idaho initiative. One aim is to reduce phosphorus (fertilizer) runoff reaching the lake. The Coeur d’Alene tribe is also receiving \$3 million from the federal government for water improvements in De Smet, an area near US Route-95. St. Maries is also receiving a \$0.5 million grant from Idaho Division of Environmental Quality (DEQ). Laclede also received a \$7.3 million loan, with about 10 percent of that loan being forgivable, from DEQ. Idaho 95 near Moscow is being rerouted in order to expand from two to four lanes. Another Leading Idaho project includes roadway resurfacing work in Bonner County. Senate Bill 1359 put \$200 million towards work on ageing bridges in Idaho. Idaho Falls is preparing to use some of that funding.

The model predicts slowing construction employment, an expected consequence of rising interest rates. The National Association of Realtors’ chief economist has noted the connection: as mortgage rates have risen, the housing market has cooled off drastically.<sup>5</sup> This channel is mostly due to home construction. Idaho has made news in terms of the recent rise in home prices across the state. It is now making headlines as forecasters see Idaho markets as overvalued. Moody’s expects Boise prices to decline 5 to 10 percent. Indeed, the Wall Street Journal had an article<sup>6</sup> indicating that “61 percent of listing in the Boise metro area had a price cut in June, the highest rate out of 97 metro areas surveyed, according to brokerage Redfin Corp.” Later the article notes that “the metro areas with the most price cuts in June after Boise were Denver, Salt Lake City and Tacoma,” and it says that Oxford Economics, a competitor to Moodys, also finds Boise housing is overvalued. Other researchers quoted in that article say “Boise-area home values were 69 percent above what they should be relative to Boise’s long-term pricing trend.”

Local builder CBH Homes was quoted in that NYTimes article, indicating that pricing for new homes would need to move back towards the \$300,000s rather than the \$500,000s. Such a shift may require a different mix of house construction, perhaps smaller housing units. There are four apartment complexes planned near the Village in Meridian. Sandpoint has approved a 130 unit complex. More apartments are in the works across Capital Blvd. from Boise State University. Rising rates may also prompt buyers to look at alternative financing. Zion’s Bank has indicated that more than half of its recent loan volume has been for adjustable rate mortgages. The most recent construction jobs data, for 2022Q1, show that there is still upside growth (see the vertical



<sup>5</sup>Marketplace: “Pending home sales fall 8.6 percent in June as housing market cools.”

<sup>6</sup>WSJ: “Boise’s Housing Market Boomed Early in the Pandemic. Now it is Cooling Fast.”

line in the attached graph, marking the annualized growth rate for the first quarter of this year). However, there are reasons to doubt very aggressive construction forecasts.

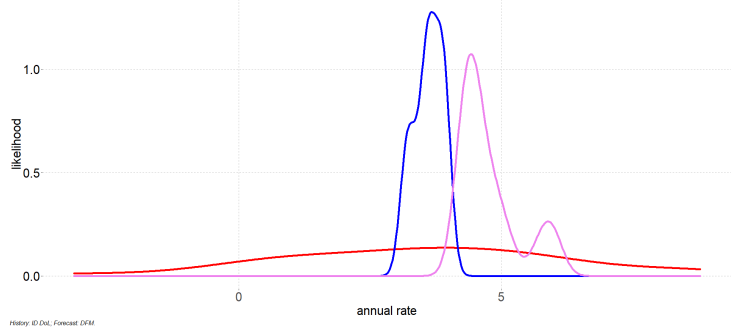
Traveling nursing is less a portion of the workforce than it was during previous covid episodes. St. Alphonsus employed up to 250 at times during the pandemic. While the prediction is for slightly slower growth than was envisioned in April, growth is still well within the most likely rates as seen by history. St. Lukes has, across recent years, averaged about 5 percent open positions, but it is now running up to 12 percent. Benewah County hospital is offering scholarships in order to recruit workers.

It appears that the US Congress may pass a semi-conductor bill. On July 27, the US Senate passed the CHIPS and Science Act. It authorizes \$52.7 billion in “direct financial assistance for the construction and expansion of semiconductor manufacturing facilities<sup>7</sup>.” Among that is \$11 billion set aside for “advance semiconductor manufacturing research and workforce training,” the former of which Idaho already has strength within through Micron and On Semiconductor. Additionally, among the \$280 billion bill, there is “nearly \$170 billion for technology research and development across several federal agencies during the next five year.”

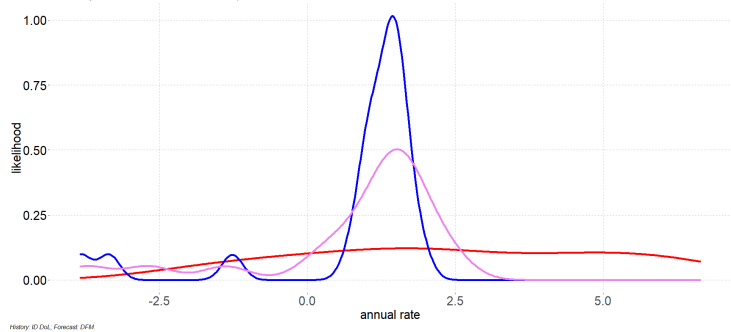
Among the five-year authorization’s goals is to boost clean energy and nuclear physics, which the Idaho National Laboratory specializes in. In another article,<sup>8</sup> the New York Times characterizes the lengthy (1,000+ page) bill as “at once a research and development bill, a near-term and long-term jobs bill, a manufacturing bill and a semiconductors bill.” Later in that article, the newspaper indicates that “the subsidies for chip companies were expected to produce, in the short term, tens of thousands of jobs, with manufacturers pledging to build new factories or expand existing plants in Ohio, Texas, Arizona, Idaho and New York.”

Idaho law, through HB 678 from this past session, creates incentives based upon passage of a US bill similar to the CHIPS Act. The window for action within Idaho law is for identification and outline of project by 2026, with the project term allowed out until 2040. Due to the long

**Healthcare job growth rates**  
Recent history red, current forecast in blue, April forecast in violet



**Manufacturing job growth rates**  
Recent history red, current forecast in blue, April forecast in violet



<sup>7</sup>WSJ: “Senate Approves \$280 Billion Bill to Boost U.S. Chip Making Technology”

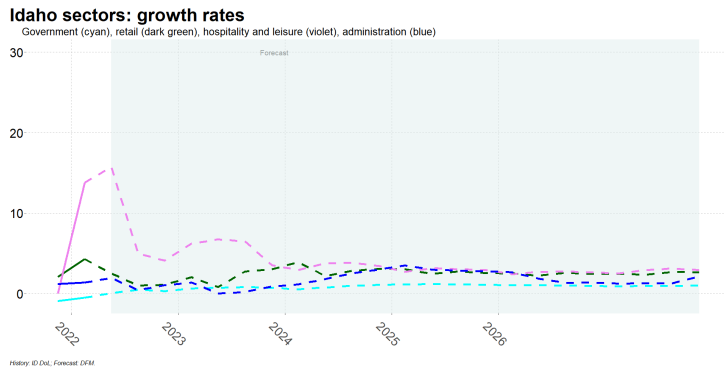
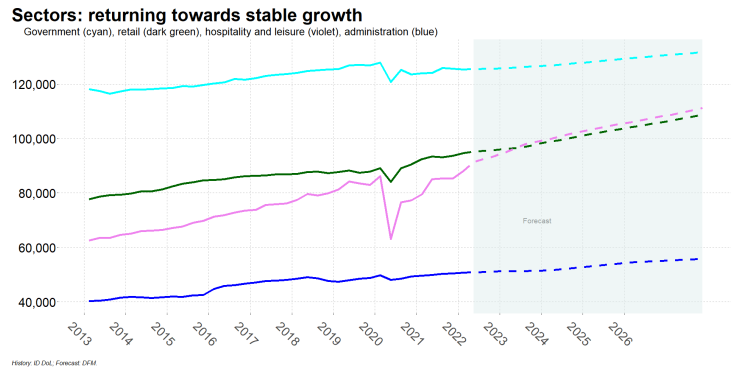
<sup>8</sup>NYT: “Senate Passes \$280 Billion Industrial Policy Bill to Counter China”



time-frames in the legislation, and that the federal legislation still needs to pass the US House and be signed by the President, there is not yet a definitive add to the forecast for Idaho employment. However, as plans become known or as contracts become awarded to national labs, there is the potential for upward revision to construction jobs, manufacturing jobs, and then subsequently, to the broader service industries within Idaho.

We also give some indication for a few other main industries within the state: private administration/management, retail, leisure and hospitality, and government work. The disruption to hospitality and leisure was among the most severe in the state. It looks to be behind us, though, as that industry is expected to reattain its prior trend towards the close of next year. Retail, however, seems to have received a boost

once the reopening occurred. Population is a driver of that sector within our Idaho economic model. Administration, though it saw some disruption during the shutdown, has remained quite steady, and is forecast to continue as such. Government looks likely to not reattain its prior trajectory: it seems there has been a level-shift downward in the count of workers in government jobs in Idaho. All these descriptions are visible in the level's graph, but the annualized growth rates graph also brings with it an indication of where job growth is expected to be more rapid. Hospitality and leisure and retail look to outpace government quite substantially during the majority of the forecast window, with administration doing so during the middle years of the forecast, but with growth quite similar to governmental growth towards both ends of the forecast window.



## Forecast analysis

**Forecast comparison.**<sup>9</sup> Here we present a small comparison between the most recent forecasts: January, April, and the current July edition. We include the January forecast as that was the basis for the prior revenue forecast by DFM. This July forecast will be the basis for the new revenue forecast for the state, to be reported with the August release of the General Fund Revenue Report. Comparing with April indicates what is likely due to changing monetary policy as a response to inflation. Comparing with January indicates that as well as the war in Ukraine, which has contributed to inflation.

Other changes include additional data. Each edition has seen one more quarter's worth of employment statistics. April began incorporating the most recent population estimates from the US Census Bureau. We have revised down our estimate for 2022 population in this edition compared to the April edition. Job growth across 2023–2026 is also revised downward compared with April and January. The 2027 value for nonfarm jobs seen now is close to the value which was projected for 2026 in the January edition.

<b>January forecast</b>		2022	2023	2024	2025	2026	2027
Personal income	\$ m	97,086	102,835	108,993	117,897	126,991	
Wages	\$ m	45,238	48,622	52,374	56,640	61,336	
Population	count	1,910,826	1,951,169	1,985,121	2,016,092	2,047,404	
Nonfarm	jobs	828,332	855,603	880,072	907,471	936,876	
<b>April forecast</b>		2022	2023	2024	2025	2026	2027
Personal income	\$ m	99,823	107,181	115,941	125,189	134,433	
Wages	\$ m	46,491	50,743	55,063	59,561	64,034	
Population	count	1,952,361	2,016,049	2,065,301	2,108,180	2,149,072	
Nonfarm	jobs	823,097	854,902	885,787	915,854	944,297	
<b>July forecast</b>		2022	2023	2024	2025	2026	2027
Personal income	\$ m	103,589	109,924	117,180	124,772	132,623	140,967
Wages	\$ m	48,628	52,060	55,565	59,521	63,677	68,080
Population	count	1,945,563	1,973,689	2,004,537	2,036,370	2,067,100	2,095,760
Nonfarm	jobs	827,248	847,279	869,347	892,805	915,118	936,796

<sup>9</sup> Prior forecast editions considered most to all of 2022 as forecast. This edition has some data across 2022. Since that data is still far from complete, 2022 is again a forecast year, but data is often incomplete. For instance, data on farm activity for 2021 is still absent. However, at some point another year of forecast should be added at the far end of the forecast window in order to maintain a five-year window. We do so this time. Consequently, 2027 is forecast in this July edition, but had not been forecast in prior editions.

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IHS sets its baseline, pessimistic, and optimistic forecasts to indicate reasonably likely economic outcomes. Baseline assumes current economic and policy conditions. Pessimist takes into account some possible, negative shocks. Optimist takes into account some possible, positive shocks. IHS scenarios are not exhaustive, but rather indicative.

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**Alternative forecasts.** Overall, IHS tilts the odds to 45 percent for the pessimistic case, 5 percent for the optimistic, and the remaining 50 percent for the baseline. Thus in this case, the pessimistic and baseline cases are almost equally likely.

Summary statistics are presented in the below table. Two years of history are given, along with the forecast years (2022–2027). All three alternatives agree across history, but they diverge beginning this year. While 2020–2021 were quite dynamic in Idaho’s economy, the change across that history does provide some context for the changes envisioned in the three main IHS alternatives.

<b>Idaho</b>		2020	2021	2022	2023	2024	2025	2026	2027
Nonfarm jobs	baseline	759,954	798,212	827,248	847,279	869,347	892,805	915,118	936,796
	optimistic	759,954	798,212	829,095	852,346	875,511	898,947	920,752	941,602
	pessimistic	759,954	798,212	826,708	839,591	856,053	877,937	901,591	924,994
Wages, m \$	baseline	38,231	43,199	48,628	52,060	55,565	59,521	63,677	68,080
	optimistic	38,231	43,199	48,720	52,641	56,433	60,592	64,899	69,401
	pessimistic	38,231	43,199	48,567	51,478	54,258	57,553	61,223	65,074
Housing starts	baseline	18,314	20,922	23,278	21,579	22,454	23,037	23,256	23,408
	optimistic	18,314	20,922	23,266	21,511	22,418	23,061	23,329	23,495
	pessimistic	18,314	20,922	23,249	21,520	22,887	23,598	23,674	23,649

By the close of the forecast window, in 2027, the difference in jobs could range from about one extra quarter’s worth of job growth to one fewer half-year’s worth of job growth. Looking at wages, by 2025, the difference to either side of the baseline is about \$1 billion dollars. Housing starts are a bit stronger in the pessimistic case than one might expect, but one of the drivers of housing starts are mortgage rates. Lower rates are expected in the pessimistic case because in that case, the tightening that the Federal Reserve is expected to do to quell inflation does not need to persist as long, and rates then revert to the neutral rate sooner in that scenario. Consequently, finance costs to housing are lower in the pessimistic case in the future than in the other scenarios. This is visible across 2024–2027 in the table.

## Appendix

### i. US Economic Model by The IHS Markit

IHS Markit (IHS) Macroeconomic Model is a multiple-equation model of the US economy. Consisting of over 1,200 equations, the model is solved in an iterative manner 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:

- (1) **Private domestic spending**
- (2) **Production and Income**
- (3) **Taxes**
- (4) **International**
- (5) **Financial**
- (6) **Inflation**
- (7) **Supply**
- (8) **Expectations**

- (1) **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.

- (2) **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.

- (3) **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.
- (4) **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.
- (5) **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.
- (6) **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.
- (7) **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.

- (8) **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.

## ii. 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:

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

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.



### iii. Exogenous And Endogenous Variables

#### 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
CENSUS	Value 1 when Census operations are in place, 0 otherwise.
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\$	Non-agricultural 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& nonmetal ore mining, 2012 = 100
IPSG311	Industrial production index, food, 2012 = 100
IPSG321	Industrial production index, wood products, 2012 = 100
IPSG322	Industrial production index, paper, 2012 = 100
IPSG323	Industrial production index, printing, 2012 = 100
IPSG3253	Industrial production index, agricultural chemicals, 2012 = 100
IPSG332	Industrial production index, fabricated metal products, 2012 = 100

IPSG3332	Industrial production index, industrial machinery, 2012=100
IPSG334	Industrial production index, computer & electronic products, 2012=100
IPSG3342	Industrial production communications equipment, 2012=100
IPSG335	Industrial production index, electrical equipment, appliances, and components, 2012=100
IPSG339	Industrial production index, miscellaneous manufacturers, 2012=100
IPSG51111	Industrial production index, newspaper publishing, 2012=100
IPSN32732T9	Industrial production index, concrete and cement products, 2012=100
JECIWSP	Employment cost index—private sector wages and salaries, December 2012=100
JEXCHBROAD	Broad U.S. trade-wtd. value of the dollar, index, 2012=100
JEXCHMTPREAL	Real US trade-weighted exchange rate with major currency trading partners, 2012=100
JEXCHOITPREAL	Real US trade-weighted exchange rate with other important trading partners, 2012=100
JPC	Implicit price deflator, personal consumption, 2012=100, 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
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, billions of dollars, annual rate

**Endogenous Variables:**

EEA_ID	Employment on nonagricultural payrolls, total
EEA_ID_2100	Employment in mining
EEA_ID_2300	Employment in construction
EEA_ID_3110	Employment in food processing
EEA_ID_3230	Employment in printing
EEA_ID_3250	Employment in chemicals
EEA_ID_3320	Employment in fabricated metal products
EEA_ID_3330	Employment in machinery
EEA_ID_3340	Employment in computers and electronic products
EEA_ID_4200	Employment in wholesale trade
EEA_ID_44_45	Employment in retail trade
EEA_ID_48_49_22	Employment transportation, warehousing, and utilities
EEA_ID_5100	Employment in information
EEA_ID_52_53	Employment in finance, insurance, and real estate
EEA_ID_54_55_56	Employment in professional, scientific, and technical services
EEA_ID_61_62	Employment in health care and educational services
EEA_ID_71_72	Employment in leisure and hospitality
EEA_ID_8100	Employment in other services
EEA_ID_DMANU	Employment in durable goods manufacturing
EEA_ID_GOODS	Employment in goods producing
EEA_ID_GV	Employment in government
EEA_ID_GVF	Employment in federal government
EEA_ID_GVSL	Employment in state and local government
EEA_ID_GVSLAD	Employment in state and local government, administration
EEA_ID_GVSLED	Employment in state and local government, education
EEA_ID_MANU	Employment in manufacturing
EEA_ID_MFDNEC	Employment in other durable manufacturing
EEA_ID_MFNNEC	Employment in other nondurable manufacturing
EEA_ID_NMANU	Employment in nondurable manufacturing
EEA_ID_NONGOODS	Employment in nongoods producing
EEA_ID_SV	Employment in services
EEA_ID_WOOD	Employment in wood products and logging
ID0CRCROP	Cash receipts, crops
ID0CRLVSTK	Cash receipts, livestock
ID0EXFP	Farm production expenses
ID0HSPR	Housing starts, total
ID0HSPRS1_A	Housing starts, single units
ID0HSPRS2A_A	Housing starts, multiple units
ID0KHU	Housing stock, total

ID0KHU1	Housing stock, single units
ID0KHU2A	Housing stock, multiple units
ID0NB	Number of births
ID0ND	Number of deaths
ID0NMG	Net in-migration of persons
ID0NPT	Resident population
ID0WBB\$	Wage and salary disbursements
ID0WBBCC\$	Wage and salary disbursements, construction
ID0WBBF\$	Wage and salary disbursements, farm
ID0WBBMF\$	Wage and salary disbursements, manufacturing
ID0WBBMIL\$	Wage and salary disbursements, military
ID0WBBOTH\$	Wage and salary disbursements, except farm, manufacturing, military, and construction
ID0WRWCC\$	Average annual wage, construction
ID0WRWMF\$	Average annual wage, manufacturing
ID0WRWOTH\$	Average annual wage, except farm, manufacturing, military, and construction
ID0YDIR\$	Dividend, interest, and rent income
ID0YFC\$	Corporate farm income
ID0YINV_R\$	Farm inventory value changes, imputed rent, and income
ID0YYP	Total real personal income, 2005 dollars
ID0YYP\$	Total personal income
ID0YYP\$PC	Per capita personal income
ID0YYPNF	Nonfarm personal income, 2005 dollars
ID0YYPNF\$	Nonfarm personal income
ID0YYPNF\$PC	Per capita nonfarm income, 2005 dollars
ID0YPPC	Real per capita personal income, 2005 dollars
ID0YPRF\$	Net farm proprietors' income
ID0YPRNF\$	Nonfarm proprietors' income
ID0YPTXB	Tax base, 2005 dollars
ID0YRA\$	Residence adjustment, personal income
ID0YSI\$	Contributions for social insurance
ID0YSUP\$	Other labor income
ID0YTR\$	Transfer payments to individuals
ID0YTRF\$	Government payments to Idaho farmers
IDWAGE	Idaho average annual wage
YPADJ_ID	Adjusted total personal income