Idaho Economic Forecast

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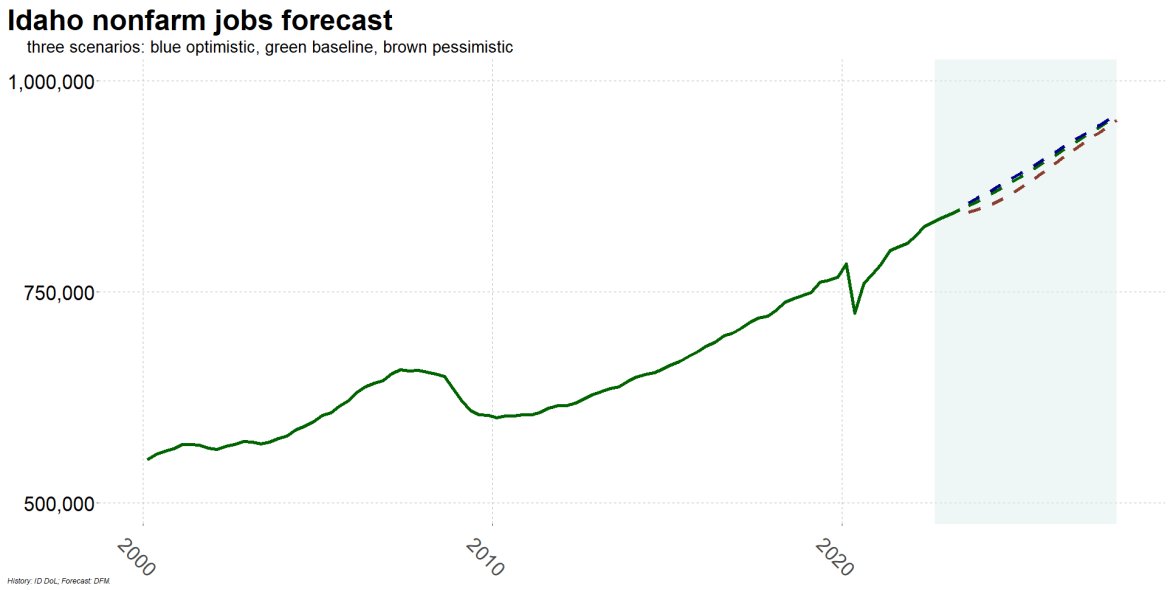
- **Forecast begins the third quarter of 2022**
- **Alternative forecasts**



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 October 2022 IHS Markit baseline forecast. IHS is now part of S&P Global. 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 second quarter of 2022 while personal income data is complete through the third quarter.

Historical and forecast data for Idaho are available. These are now provided via link within this pdf document.

The Idaho economic forecast has historically 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 inflation with regard to shelter, that is homeownership costs or renting costs, (October 17), remote work and its effects on housing (September 26), and the interaction between wage growth an inflation (September 06), among other interesting topics. The San Francisco Fed also offers monthly snapshots of its views on the overall economy through its FedViews publications. These include some behind the scenes research, such as the lags one can expect between monetary policy tightening and housing inflation as in the October FedView. These are among the many resources this publication references via pdf link.

Cover. Our prior cover commented upon the likelihood of imminent recession within the Idaho economy. That publication rested upon the July outlook by IHS. The firm switched its view from a slowdown to a mild recession as the baseline for its October US forecast. The prior month's outlook (September) had still maintained a slowdown for the baseline as opposed to an outright recession call. For the July publication, the assessment was that Idaho was unlikely to see an imminent recession, even in the pessimistic case.

With the switch in IHS's position, it is worth reconsidering the likelihood of a gloomy near-future for Idaho. Probaby the most salient feature for most Idahoans is their employment status, followed closely by their income trajectory, and then inflation. We provide graphs of the latter outlooks within the publication, but place the three scenarios for employment on the cover. These are nonfarm jobs, which roughly translates to the bulk of jobs covered by regular unemployment insurance. This is where the best statistics on jobs are available, and this has

been the primary forecast statistic for Idaho's Economic Forecast publication since its inception.

Readers with any questions should contact Greg Piepmeyer or Matthew Hurt at (208) 334-3900 or via email using greg.piepmeyer@dfm.idaho.gov or matthew.hurt@dfm.idaho.gov.

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Summary

The chief forecasting question at the end of October 2022 is: are we heading for a recession, or are we already in one? This report explores several avenues that are causing growth to slow down and increase the risk of entering or extending a recession. Today, rates of inflation not seen in forty years and strong moves by the Federal Reserve to constrain inflation are the primary causes of heightened recession risk.

This document explores the causes of this inflation and its relationship with other macroeconomic and international risks that elevate the likelihood of recession in the country and in Idaho. Taking stock of these risks we explore these impacts in our model's predictions for Idaho labor markets, personal income, and wages. We decompose some of these results across major sectors of the Idaho economy including health care, semi-conductor manufacturing, and construction.

After evaluating the risks and data in this report it is our conclusion that the state of Idaho is not currently in, nor headed for a recession. This is true even if the nation overall experiences economic contraction over the next several quarters. However, growth in Idaho in terms of population and jobs is expected to slow down. Between 2010 and 2020 Idaho was the second fastest growing state in the country. This decade it has been the fastest, and the competition is not close. [1]

Both IHS and our team believe that much of Idaho's growth in real GDP has followed from record levels of migration into the state. As housing markets in Idaho stabilize at substantially higher levels than in the last five years we expect fewer people moving into Idaho for housing cost relief. In spite of this net migration into the state is still expected due to a relatively tight Idaho labor market.

As we detail in our economic outlook portion of this report, Idaho nonfarm jobs and population are projected to grow three to four times as fast as the nation overall. The national forecast expects job contraction nationally in 2023 and 2024, while Idaho's economic model expects Idaho's job market to grow more in 2023 than in 2022. We also expect average real wage growth in Idaho to outstrip the nation over the next five years. It is difficult for an economy to contract while simultaneously adding more people, jobs, and higher wages.

The news on inflation in Idaho is less optimistic. State level CPI numbers do not exist, but as we detail in our section on Idaho, inflation data do exist for at the Census division level. The mountain division has experienced the highest levels of inflation. Idaho may be experiencing the highest rates of inflation in the country. If Idaho's economy remains strong, even while the rest of the country slows down, inflation could well remain higher in Idaho for longer.

We also explore how our baseline forecast has changed as new data have become available along with alternative pessimistic and optimistic forecasts. Compared to our April forecast our July forecast expected more personal income from 2022-2024, but lower levels in 2025-2026. Wages followed similarly. The July forecast had population lower for all years pushing the two million threshold out to 2024. The jobs forecast for 2022 was better in July than in April, but worse going forward.

[1] Population estimates come from Pew research.

In June we were experiencing some of the most intense inflation, particularly for gas prices, which explains some of the pessimism regarding jobs and popualtion growth. Comparing the October forecast, which should have the most accurate forecast of 2022 to July reveals a few interesting patterns. Personal income is up in the October forecast for 2022-2027 even while wages are lower across the same time horizon. Population is also lower in all periods pushing the two million threshold out to 2025. In contrast, jobs are up in all years, though not to the heights predicted by the April forecast. These differences likely reflect the fact that IHS believes that labor force participation will increase as economic conditions worsen and force workers back into the labor market.

The most significant difference between our baseline and pessimistic forecast is for jobs. While there is practically no difference in 2022, the pessimistic forecast for 2023 expects 6,250 (less than 1%) fewer jobs for the state. The gap doubles in 2024 with more than 13,000 fewer jobs expected in that year. The pessimistic model then expects 11,400 fewer jobs in 2025, 8,195 fewer jobs in 2026, and 5,862 fewer jobs in 2027. While none of that is good, all of those numbers still represent robust employment growth. Annual income follows a similar trend. We expect housing starts to increase if a recession happens. This is because the Federal Reserve will pause rate increases or even cut rates if the economy contracts too quickly.

Current economic conditions

The summary measure of the US economy is real GDP. The word "real" means that the value reflects the effects of inflation. Inflation has recently been high by typical US standards. The effect of inflation is to pull down nominal GDP figures.[2] In the history 2018–2020, we can

Real US GDP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
current	2.95	2.29	-2.77	5.95	1.71	-0.47	1.29	2.04	2.00	1.74
one year ago	3.00	2.16	-3.55	3.67	3.19	2.77	2.67	2.55	2.43	2.32
two years ago	2.92	2.29	-3.40	5.44	4.26	2.83	2.66	2.48	2.44	2.30

recognize the magnitudes that data revision have upon national accounts, but the degree to which 2020 values in this table change from two years ago, in the midst of 2020 to the current reading represent reassessment to the disruption the pandemic caused economically. Finally, for the forward forecast 2022–2027, it is clear that IHS is viewing growth as more difficult to attain.

The real GDP growth forecast incorporated in the full US economic forecast for October was 2.3 percent. IHS releases updates to its GDP forecast, similar to how Federal Reserve banks do. These "nowcasts" take in the latest data. The final "nowcast" by IHS, the estimate for third quarter 2022 real GDP growth for the United States was 2.6 percent, which is consistent with the first Bureau of Economic Analysis estimate, which was just released on October 27. The forecast for third quarter 2022 real GDP growth has been volatile since IHS started forecasting it in April. The first forecast value of 2.7 percent was close to the current measurment. Between April and the end of June IHS revised down their forecast to 2.2 percent. Concerns about inflation and expected action by the Federal Reserve caused the forecast to fall to just 0.6 percent by the end of July. In the end, IHS was broadly consistent with the average of professional forecasts released by the Bloomberg news service, the so-called panel forecast.

IHS is currently substantially more pessimistic than the panel forecast for the final quarter of 2022. As late as the middle of September, IHS was forecasting 1 percent growth, above the panel forecast of 0 change. The estimate at the start of October was for -1.2 percent, reflecting a substantial -2 percentage point swing in less than a month, and it was well below the panel forecast around 0. The panel has come down lately with a mid-October estimate around -0.3 percent, while IHS has already begun to revise their estimate up to around -0.6, though those revisions could not be incorporated into the full US forecast.

The first three quarters of 2022 experienced -1.63, -0.58, and 2.6 percent growth, respectively. Though it is just an approximation to the cumulative effect, summing these additively yields positive growth of 0.4 percent. If IHS is correct, and the economy contracts -0.6 percent in the final quarter of 2022, that will mean that the year experienced an overall contraction. If the panel is correct, then the net growth on the year will likely be positive, but close to zero.

[2] For example: if production went from 200 to 230 in nominal (i.e., cash) figures, but inflation was 4 percent in that time, then the real effect of that production growth is just $(230/200) \div 1.04(115) \div 1.04 \doteq 1.106$, meaning growth was brought down from the 15 percent level to the 10.6 percent level due to the 4 percent inflation.

In summary, the year will likely experience just a slight change in overall GDP level, possibly contraction or expansion. Looking forward, IHS projects two quarters of economic contraction in 2023 followed by a steady, though unexciting, expansion.

Some expected the National Bureau of Economic Research's Business Cycle Dating Committee (NBER for short), which is the official arbiter of US recessions, to call the contractions in the first half of 2022 as a recession. So far they have not, possibly for a variety of reasons. If IHS's prediction is correct, and we will experience five quarters of contraction out of six, it is possible that the NBER will call the entire six quarters a recession. This is similar to how the Great Recession began in 2008 even though the second quarter of 2008 included an expansion that undid losses from the previous quarter. In that case, the economy contracted around 15.5 percent over the next four quarters. IHS is predicting a total contraction around 4 percent from fourth quarter 2022 through second quarter 2023.

If labor markets continue to be tight, it is possible that even if the IHS prediction is correct, no recession designation may be given by the NBER. Second, IHS is the only major forecasting agency that has included a recession in their baseline forecast. Most other forecasts see the next few quarters will be a period of anemic economic expansion, tending to forecast growth around 0 percent. The economic conditions of today are substantially different to how they were before the Great Recession.

Here is a summary of what IHS is including or excluding from its forecast.

The October forecast incorporates the disruption from Hurricane Ian, which affected Florida and the Carolinas. GDP is pulled down by 0.1 percentage points in the third quarter, but bulks up by the same percentage as rebuilding takes place in the fourth quarter. IHS has also incorporated the extension of the student debt payment moratorium through the end of 2023, but it has not included the proposal to cancel $10–20 thousand in federal student debt per borrower. Partly this reflects that the plan is likely to face legal challenges. Partly it is the firm's estimation the the forgiveness would have a negligible impact on GDP.

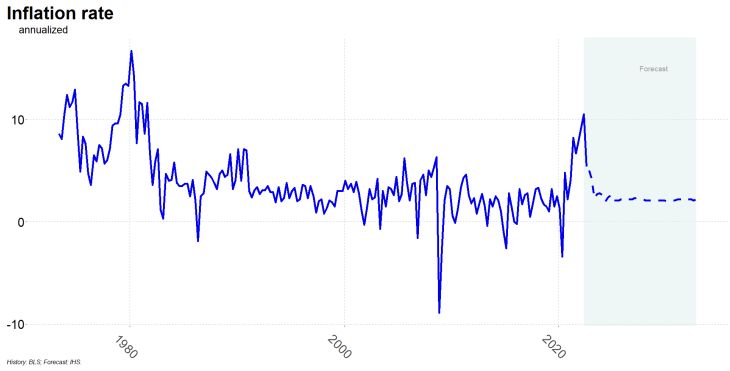
IHS is forecasting resilience in the automobile manufacture sector. They attribute this to continued demand, still very limited supply of finished vehicles, and improving supply chains for the manufacturers, particularly with regard to semi-conductor chips for the electronics included in modern cars.

IHS acknowledges that OPEC+ recently announced 2 million barrels a day in production would be cut. Many economists have noted that OPEC+ was already behind its planned production by 3.3 million barrels per day. Thus the cut is not necessarily a change in direct production, but perhaps more of an announcement that little effort will be expended for bridging the gap between the quota for production and actual production. IHS expects global oil prices to be in the $80–90 per (42 gallon) barrel range across the next few years. At the close of October, oil prices were closer to the $90 per barrel mark.

IHS continues with the trade tariffs which were implemented during the prior administration. There has been little movement on tariff reduction by the current administration. IHS also recognizes that the states' Medicaid match is about to switch to a pre-pandemic level (so less

federal money will flow to states) as an emergency expansion program lapses during the first quarter of 2023. IHS also includes the IIJA spending on infrastructure that states will be implementing in the near future as a result of that $1 trillion spending bill.

Inflation. Price increases beyond commensurate quality improvement is what the measures of inflation represent. Most of those measures have not been near the Federal Reserve's target rate of 2 percent since 2020.[3] Over the last two years, inflation has increased rapidly with both quarters of 2022 showing annualized rates of the headline measure of inflation above 9 percent. These are levels not seen in the United States since the 1980s. Inflation has routinely been listed by Americans, and indeed people in many countries, as the biggest challenge this year. Inflation has risen substantially across Europe where it (at 9.9 percent annualized) is behaving much like in the US though the European Central Bank has a similar target for inflation (just below 2 percent), in Canada under similar circumstances (6.9 percent with a 2 percent target), and parts of the Middle East, where Turkey (up 83.5 percent) and Lebanon are particularly affected. It has not abated in Latin America (Mexico is at 8.7 percent) nor in Africa (Egypt is at 15.1 and South Africa is at 7.8 percent).



Central banks around the world are raising short-term interest rates in order to combat inflation. These actions usually pull long-term interest rates up as well. Ten year yields are up 2.4 percentage points in the US from a year ago, 2.7 percentage points in Britain, 2.2—5 percentage points across the rest of Europe, and 2.2 percentage points in Mexico.

International inflation. An international risk to monitor is the behavior of central banks around the world in response to inflation. In general, higher interest rates lead to decreases in aggregate demand. This slows growth or can even cause growth to reverse into decrease. When one country raises interest rates, then the economic slowdown in that country can be modulated through export/import activities with other countries. When many countries simultaneously raise interest rates the risk is that these localized efforts to slow down the local economies can have an even larger effect on the global economy. Parts of the UN have warned that this is possible in the current environment.

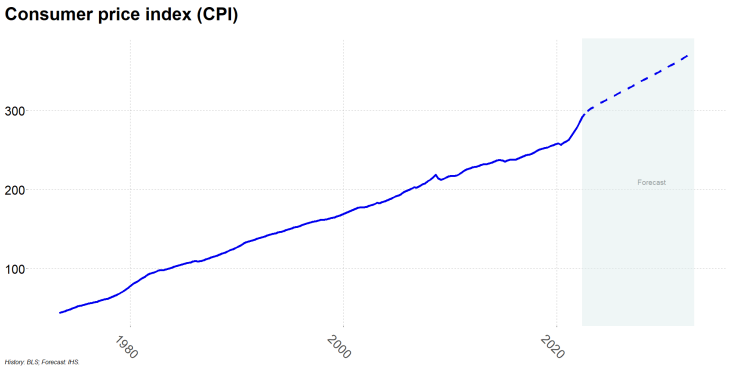
An official trade body at the UN warned that rising rates by central banks are likely to lower what would otherwise be economic output by 0.5–0.8 percentage points across a 3-year horizon, with developing economies more greatly affected. Further, the UN indicated that stagnation is likely to follow a recession in that case. The UN does not yet call for a recession as the most likely near-term outcome, but it characterizes it as expecting

[3] That target rate is for core personal consumption expenditure, or core PCE, inflation.

> the world economy to grow just 2.2 percent in 2023, but with risks of a further drop if financial conditions deteriorate in leading economies and contagion hits emerging economies. If such a low-growth scenario persists for two or more years, world output will be on course for a slower expansion than after the [2008—2009 Great Recession], itself substandard for many economies.

Indeed, this report opens with a simple statement: "growth is slowing everywhere." It also finds that inflation is diminishing the economic prospects for households in both advanced and developing countries, and it notes that whereas less than a billion people contended with inflation in double digits in mid-2021, more than 2 billion did so in mid-2022. Indeed, the number of countries with such inflation increased from 23 to 69.

Inflation and its measures and targets. Inflation is measured as the percentage change in price levels between two periods, and those price levels are depicted in this second figure. The percentage change, which is what the first picture illustrates, is often annualized in the US, as it was in that graphical display, which can lead to confusion about the severity of US inflation. For example, the quarterly values of the consumer price index (CPI) used by IHS for closing quarter of 2021 and the opening quarter of 2022 are 278.41 and 284.61, respectively. These are figures from the smoother graph. The growth rate between these two values is 2.2 percent, while the annualized growth rate reflected is 9.2 percent, which is what is recorded on the jagged graph. The distinction is that the 9.2 percent figure means that *if* inflation were to persist for four quarters at the 2.2 percent change, then the overall rate of inflation would be 9.2 percent across that year's time.[4]



It is also common to see inflation computed year-over-year.[5] This is computed by comparing the CPI in one period to the CPI in a period from a year ago. For example, the rate of inflation between the first quarters of 2021 and 2022 is 8 percent based on the values of 268.76 and 284.61, respectively. Inflation can also differ based on what aggregate price index is used in its computation. The CPI is the most common index and is computed as the cost of purchasing a fixed bundle of goods across time. IHS often uses changes in real personal consumption

[4] The arithmetic is $294.61/278.41 \doteq 1.022$ which is where the 2.2 percent comes from, but the fullest decimal should be kept for future computations. Indeed, continuing with the sentence and "annualizing" that $(1.022)^4 \doteq 1.091$ suggesting that actually the quarterly change is a bit larger than 2.2 percent, more like 2.22 to 2.23 percent, since 1.092 was expected, not 1.091. Indeed the fuller decimal was 1.022269.

[5] Much of the rest of the world uses this method to convey the effects of inflation, and indeed those inflation readings from overseas were year-over-year figures. The US housing market also chooses to discuss house price appreciation in this manner. Price changes for housing are part of inflation, and indeed they are an important component of inflation at the present moment. If a news story says that house prices are up 8.8 percent, it means from the year ago period, not from the prior month. It is similar for when US house prices decline.

expenditure to measure inflation. The reason IHS does so rests partly upon that being closer to the Federal Reserve's preferred measure, core PCE, for its target rate of inflation. Core PCE inflation is usually slightly lower than CPI inflation.

Regardless of how it is measured, when prices grow faster than earnings households must make spending decisions under greater duress. Some families choose to keep spending constant and consume less, other families choose to keep consumption constant and spend more at the expense of savings. In the latter case, saving may be curtailed, or savings may be tapped. Higher inflation discourages saving through diminished purchasing power: each dollar now buys less in the future.

No doubt, prices have grown more quickly than earnings recently. The Bureau of Labor Statistics (BLS) measures wage earnings monthly, as well as inflation. The two are combined in the real earnings release, which looks at real average hourly earnings. The September edition showed a 3 percent decline in real (that is after adjusting for inflation) earnings from September 2021. There have been declines in real earnings in many of the intervening months. Only July and August saw modest gains. The September release also indicated that hours worked declined across the Sept-2021 to Sept-2022 year. Together the two declines reduced real average weekly earnings by 3.8 percent.[6]

What is causing the current, sharp inflation? Inflation happens when demand in an economy—driven by consumer, investment, or government spending—grows faster than aggregate supply. Inflation today is being driven by five forces: pandemic related global supply chain disruptions, pandemic driven consumption, increased government spending, a delayed effect from long-term persistently low interest rates, and Russia's invasion of Ukraine. Inflation could more easily subside if each of the above challenges were addressed. Currently, the Federal Reserve has been raising interest rates at each opportunity, addressing the middle trio of those five challenges. Its aim is to slow down the economy, lowering consumption. That will come through individual consumers as well as a slowing of government spending. It may have a delayed effect, much as the low interest rates have had. Slowing the economy brings some recession risk. The willingness of the Federal Reserve to risk a recession to control inflation highlights how serious of a concern high inflation is.

National inflation. As the first of our inflation figures shows, for most of 1990–2020 the Federal Reserve was successfully able to keep inflation near its 2 percent target. IHS, and indeed most economists, expect inflation to fall back to near 2 percent over the next few years. In their baseline prediction, IHS expects inflation to be around 5 percent in late-2022, approaching 4

[6] Here we walk through the numerics: The last group of figures in Table A-1 of the BLS release show that average inflation was 8.2 percent across that year, average earnings were up 4.1 percent on a weekly basis, even though average hours almost decreased by one percent, but due to that inflation reading, average weekly real earnings fell by 3.8 percent. To follow the table computationally, begin with average hourly earnings going up by 5 percent. This translates to 1.05. Multiply that by $(1 - .009) = .991$ to account for the 0.9 percent decline in hours. That leaves 1.04055 which reflects the (by rounding to 1.041) 4.1 percent increase in average weekly wages. That then gets divided by 1.082 to account for the effect of CPI inflation. The result, .9616913, when rounded to 0.962, is 0.038 or 3.8 percent off of 1, which is the deline in real average weekly earnings.

percent in early-2023, and then settle around 2 percent by mid-2024. Preliminary monthly data from the BLS[7] show that inflation need not go up by leaps and bounds each month. The June–July transition showed inflation near 4 percent annualized, whether using seasonally adjusted or the raw data.

With inflation involving such broad notions as prices and quality, and with there being a plethora of items and services for sale in a modern economy, it is no wonder that inflation is often understood via personalized experience. This means that relaying the effects of inflation can and often involves illustrative anecdotes or more narrow considerations of concentrated inflation. Here are four we find illustrative.

- Inflation for different categories of goods is also tracked and reveal different patterns. According to the BLS, inflation between September 2022 and September 2021 was 8.2 percent, however inflation for food was 11.2 percent and inflation for energy was 19.8 percent. Driven in part by the pandemic trend of increasingly consuming food at home, and by broader international pressures on agricultural producers and supply chains, inflation for food at home reached 13 percent. Cereals and dairy in particular saw prices up by about 16 percent.
- Energy and fuel prices have increased rapidly in the last twelve months. Prices for food and energy tend to be the most volatile in normal times, hence their exclusion in measures of core inflation where the aim is to understand the underlying trend. The war in Ukraine has directly destabilized energy and food markets, and volatility in food and energy prices has increased. Until the war's resolution, it is reasonable to expect constrained supply and elevated prices in these markets. Since August 2021, piped natural gas prices in the United States have increased 33.1 percent and electricity prices have increased 15.5 percent. Gasoline prices have increased 18.2 percent, although prices were substantially higher during the summer and have since come down. Still, for gasoline last month, year-over-year inflation was 25 percent.
- The Wall Street Journal reported on Atlanta Federal Reserve Bank research indicating that items which re-price infrequently, such as education and public transportation, have recently been increasing prices to a greater degree than typical, both in frequency of increase as well as magnitude of increase. These prices are unlikely to fall. That is why the items are called sticky-priced items. So these items are contributing to inflation, but they are unlikely to act as gasoline has at some points this year, contributing to inflation in a negative way (gasoline prices fell from a high above $5 per gallon to below $4 per gallon on a national average by the end of summer).
- Automobiles have certainly increased average transaction prices during the pandemic. In September, the average new vehicle transaction was for $47 thousand dollars. Monthly payments topped $700, having been near $630 one year ago. General Motors indicated

[7] Include the series CUUR0000SA0L1E and CUSR0000SA0L1E to get unadjusted and seasonally adjusted CPI data. These are similar, but not exactly what is available via FRED, the St. Louis Fed data website for graphical display.

in an early-October NY Times article that the manufacturer has seen no softening in the demand for new vehicles. Several manufacturers supported this view, saying that demand remains firm, and is still outstripping supply.

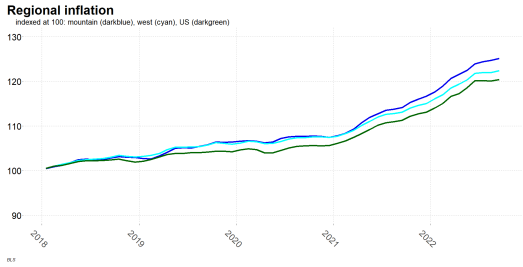
With so many aspects to inflation, it is no wonder that households have experiences with inflation which vary. The Congressional Budget Office (CBO) studied this across 2019–2022, using estimates for personal income and expenses for the final portion of 2022. It studied income in terms of just earnings, as well as income including transfer payments from the federal government as well as including the effects of taxes, including earned income tax credits/child tax credits. The CBO was interested in seeing the effects across the five income quintiles. It referred to income after taking into account taxes and transfers as market income.

The CBO findings: in inflation adjusted terms, that is in real terms, total income rose in 2020 and 2021, but is projected to fall in 2022. However, market income is expected to increase in all three years. Fixing a bundle of goods and services in 2019 as is done for CPI inflation, the CBO found that the bundle required less as a share of total income in all three subsequent years (2020, 2021, and 2022), but that the share increased from 2021 to 2022 whereas it had been decreasing across 2019 to 2020 as well as across 2020 to 2021. In terms of quintiles, all but the lowest quintile saw the share of income devoted to that fixed bundle decrease since 2019, but only the top and bottom saw incomes increase quickly enough to see the share of income decline across 2022. In other words, the middle quintiles saw prices rise faster than incomes in 2022.

To put this into dollar figures for one of the quintiles (the middle one), the CBO reported that inflation has eroded $2,900 in purchasing power for a middle-income household since 2019, but that household has seen an average $3,100 increase to income, and a $3,300 increase to market income, that is, income after transfers and taxes have been included.

The CBO article also includes a figure 3 which shows how various components of the fixed bundle have changed in prices across each of the years of the study. It reminds us that prior to the pandemic, components of CPI computations often had deflationary propensities.

Idaho inflation. Inflation is often studied at the national level, but the Bureau of Labor Statistics (BLS) also measures inflation at the Census region and division levels back through 2018. The figure[8] plots the CPI for the United States, the western census region, and the census division for the inter-mountain area. The three lines parallel each other for most of the observed period, with the western and mountain areas having higher price levels than the rest of the country. This is likely driven by high levels of migration into the area, and higher average gas and other fuel prices. In 2021, when inflation really accelerated for the country, there was a sharp increase in CPI for the mountain division above and beyond what the western US, or rest of the country, was experiencing.



[8]The CPI series for the Mountain division only begins in the fourth quarter of 2017. All CPI series are indexed to 100 as of that date for comparison.

Inflation has continued to be higher in the mountain division. Over the last three months the US experienced annualized inflation of -0.14, -0.42, and 2.61 percent. In the western region those values were 1.76, 0.24, and 4.21 percent. In the mountain division they were 5.14, 2.72, and 4.24 percent.[9] In all cases, over the last three months inflation was highest in the mountain division. To this point, the BLS does not produce CPI data at the state level, so it is not possible to measure differences in inflation between states. If migration and high fuel prices are the drivers of inflation, Idaho may be experienced some of the worst in the nation given our high levels of in-migration and limited access to fuel refineries. High levels of inflation in Idaho were one of the reasons cited for the passage of HB-1 during Idaho's special legislative session on September 1, 2022.

International developments. The primary international development relevant for Idaho's economic future is the war in Ukraine because it is the primary international development for nearly all near-term economic activity.

The war has limited the ability for Ukrainian food and fertilizer to be sold abroad. This has somewhat been mitigated via the Turkey-and-UN-led maritime deal which opened the Ukrainian port of Odessa. Russia had been blockading the Ukrainian ports on the Black Sea. That maritime deal is up for renegotiation before its expiration near Thanksgiving.[10] The war has forced Ukraine to pivot from production of goods for export to production of wartime material. The war has also limited Russia's ability to export oil and natural gas. Initially, this was through sanctions imposed by Western powers as well as with the withdrawal of international firms from Russia. More recently, it has been due to Russian actions to limit exports even further. The war has also taken Russians out of its normal economy and put them on the front lines in Ukraine. As the war has persisted, more Russians have been sent to the front lines and more than 700,000 adult men (around 1 percent of Russia's adult male population, and a larger percentage of its fighting-age male population) have fled the country to avoid being drafted per IHS.

Escalations in the conflict will add more inflationary pressures, particularly on food and fuel prices. In recent weeks Russia has increased its attacks on civilian infrastructure in Ukraine. The primary aim seems to be depriving Ukrainians of heating during the winter. These attacks have been made possible by the use of Iranian supplied drones. For now, Iran and Russia deny this, but the evidence is substantial. It has already led to European sanctions on Iran. Iran responded with retaliatory sanctions against the European Union. An escalation in sanctions may lead to higher fuel prices across the globe.

Further escalations in the conflict are possible, particularly if continued battlefield reversals increase Russian desperation. Elements in the Russian government have threatened to use tactical nuclear weapons against Ukraine. Vladimir Putin has denied that Russia has plans to use nuclear weapons. He also denied Russia had plans to invade Ukraine immediately before

[9] BLS1 contains an interactive graphic that allows users to select a region, division, or metro area, and BLS2 contains a list of options that a user can choose from including the west region that can be studied via the first link.

[10] Talks are imperiled at the close of October.

Russia launched its invasion. It is unclear exactly what the West's response would be to this kind of attack, but the event would have a significant impact on market stability. In the last week, the president of Ukraine has also warned that retreating Russian forces may breach the Kakhovka Hydroelectric dam. The Soviets used similar tactics to slow Germany's invasion during World War II. If such a dam breach were carried out, hundreds of thousands of Ukrainians would be affected. Prices will remain elevated and markets will remain unstable as long as Russia continues its occupation of Ukrainian territory.

Idaho and international developments. One bright spot for fuel markets is that a mild autumn and efforts to stockpile liquefied natural gas have led to European countries filling their storage capacity to above 90 percent. There are even reports of fuel tankers being turned away from European ports. Of course, fuel needs a repository to be useful. Coordinated efforts between the European Union and the United States to stabilize fuel markets in Europe seem to have worked. Stabilized fuel markets in Europe will likely lead to decreases in the price of natural gas in the United States as less will be exported. This may help to keep home heating bills a bit lower in Idaho since most homes in the state rely on natural gas for heating. Ultimately, though, local factors may be at play, and the cases pending at the Idaho Public Utilities Commission are perhaps mixed for the consumer.[11]

International trade plays an important role in promoting growth in the state. According to the office of the United States Trade Representative, Idaho exports were worth $6 billion in 2018 and accounted for 7.5 percent of state GDP. Two thirds of these exports were manufactured computer and electronic products while the other third were agricultural products. Our largest export markets are Canada, Taiwan, China, Singapore, and Mexico. Even though Idaho is the country's 39th largest economy by GDP according to 2022 estimates, Idaho was the country's 23rd largest agricultural exporter in 2017. Even with heightened international risks, Idahoans continue to take advantage of the opportunities of a global economy as evidenced by a recent Taiwanese delegation visit to foster deeper trade ties. The main recent outcome is a continued market for Idaho wheat.

Recession risk. Risk is an assessment of the likelihood of an outcome; typically we focus on negative risks, but positive risk also occur. As of Septemter, IHS placed the probability on its pessimistic alternative at 35 percent, the likelihood of the optimistic alternative at 15 percent, and the remaining 50 percent risk was assigned to the baseline (middle-of-the-road) scenario. That September forecast was published on September 8, and it was likely finalized a small handful of days earlier. On September 21, the Federal Reserve Open Market Committee (FOMC) raised short-term interest rates by three-quarters of a percentage point. Subsequently, on September 23 and in contrast to their September 16 weekly commentary which foresaw growth only slowing, IHS opened with the headline "Worsening financial conditions likely to tip US into recession." Clearly there is a reassessment of the probabilities in light of recent developments.

[11] Pending cases include up north and south.

DFM continues to find that conditions within Idaho are likely to mitigate some of the recessionary forces which IHS is reading at the national level. We address these through population and housing measures, through jobs, personal income, all of which incorporate IHS's national forecast, and finally through local news.

International recession risks. While there has been fanfare about states and/or countries reattaining their pre-pandemic economic levels,[12] whether in terms of nominal GDP or in terms of jobs, there persists an economic output gap between what was conservatively expected prior to the pandemic and what has been achieved to date. The UN sees this economic gap at 3 percentage points in 2023. For individual countries, the UN sees the economic gap at 4.5 percent in the US, 5.1 percent in the Euro area, 5.4 percent in Canada, 5.8 percent in Mexico, and 5.7 percent in China. Japan's estimated output gap is comparatively mild at 2.6 percent. Each of these percents is in terms of the respective area's GDP.

IHS places China's 2022 growth rate at 3.3 percent followed by 4.5 percent in 2024. The official target for real Chinese growth by the Chinese government is 5.5 percent for 2022. Eurozone growth is expected by IHS to be 3.1 pecent in 2022, but neither growth nor contraction at a 0.0 change in 2024. At the whole-world level, IHS sees real growth as slowing from 5.8 percent in 2021 to 2.8 percent in 2022 and then slowing further to 2.0 percent in 2023. These are similar to figures supplied by the International Monetary Fund in October: World growth was seen at 6.0 percent in 2021, is projected to register 3.2 percent when 2022 is closed, and to come in at 2.7 percent in 2023. The IMF gives context that 3.6 percent growth has been the world average across 2000–2021, and indeed across fifty years, 1970–2021. Further, the fund points out that the October projections are significantly weaker than what was foreseen as recently as April.

The IMF forecasts over 70 country economies at the quarterly frequency, the same frequency that IHS uses and which this publication also relies upon since that is the frequency if BEA data from the US government. In 31 of those economies, the IMF sees at least two quarters of contraction in the respective country's economy during the 2022 calendar year. For the US economy, growth is expected to register 1.6 percent in 2022 and 1.0 percent in 2023, but because of the sequence of quarterly components to give those aggregates, there is expected to be no growth from the fourth quarter of 2021 through the fourth quarter of 2022. Already, the first two quarters of 2022 have recorded slight contractions according to the BEA.

Thus from a GDP perspective, there appears to be widespread agreement among forecasts that growth is expected to be quite a bit slower than the initial recovery period from the pandemic shutdowns, but there is also expected to be near-term strength in the labor economies with many jurisdictions above or just reaching their pre-pandemic peak in employment.

National recession risks. The view from IHS now has the unemployment rate, currently reading 3.7 percent at the national level,[13] rising by several percentage points. The ructions in equity,

[12] Idaho recovered jobs from the pandemic among the most quickly. The US achieved its prior-to-the-pandemic job level during the third quarter.

[13] and 2.8 percent at this state's level

currency, bond, and commodity markets played into the raised risk for the pessimistic alternative, but among the most influential factors in IHS's view was the revisions to forecasts by the FOMC participants regarding the likely path of both inflation and the consequent interest rate rises the central bank is likely to use to combat that inflation. "The longer inflation remains elevated, the further the FOMC will be forced to raise interest rates [in order] to weaken demand to reduce inflationary pressures."

By the close of September, IHS expects "outright declines in real GDP beginning as soon as the fourth quarter" of 2022, with those declines persisting for enough quarters and of sufficient depth that the official arbiter of recessions, the Economic Dating Cycle Committee from the National Bureau of Economic Research, would declare a recession. The initial impression from IHS is that unemployment could reach 6 percent under such a slowdown. That unemployment rate was confirmed with the firm's October release, with that rate occurring at the close of 2023 and opening of 2024. The firm also expects the FOMC to again revise upwards its target rate for short-term interest rates. In the September meeting, that target was 3.25 percent. IHS expects it will be revised to 4.5 to 5 percent.

A hallmark of the recovery from the pandemic shutdown has been a surfeit of jobs and a dearth of workers. IHS sees labor force participation continuing to gently decline across the next five years. This is part of the firm's re-appraisal of its demographic assumptions, a process IHS first published upon in September. At that point, the firm wrote:

> An important change in the forecast is a significant downward revision in our projection of labor force participation. While rebounding from its pandemic low, the participation rate has fallen short of our earlier projected recovery towards the prepandemic level. Indeed, it remains slightly below the trend, dictated by the aging of the population, that has declined approximately 0.5 percentage points since late 2019. ... [W]e've revised the participation rate to approach the declining trend over next few quarters, after which we show it gradually declining at the pace suggested by demographics. The result is a sustained downward revision in the participation rate of about half a percentage point

These assumptions persist in the October IHS forecast. For October, IHS also sees job openings as quite elevated, noting that there are only 3 unemployed workers for every 5 current job openings. In its assessment of the current situation, IHS writes "while labor demand has shown signs of cooling, it remains robust."

A *Wall Street Journal* article discussed that Homeland Security plans on offering 130 thousand H2-B visas this year. This is the maximal amount automatically allowed; Congress passed a law specifying the level. Homeland Security issues half in summer and half in winter. It also may, should the administration choose to do so, issue another 65 thousand visas. It is expected that these may be issued with regional targets, likely as part of foreign diplomacy and humanitarian considerations. Direct announcements have not been made on that. Homeland Security aslo issues H2-A visas. These are for farm workers. These visas are not limited by Congress. In both visa categories, the programs are meant to aleviate worker shortages. A lack

of labor supply has been one part of the wage inflation which has occurred since the onset of the pandemic. Immigration, including under visa programs, was wound down during the height of the pandemic. Functioning visa programs are among the few levers the administration can use to influence labor supply in short order, and the visa programs are highly valued by the agricultural (and the winter tourism) industries.

IHS is expecting employment gains to slow to the level which would only sustain an unemployment rate during the final quarter of 2022. It is then expecting job losses in 2023 as it expects the unemployment rate to lift from 3.5 percent to 6 percent, but in the subsequent year, IHS expects jobs gains just barely above the threshold to very-very gradually decrease the unemployment rate in 2024.

This points to a recession of a slightly peculiar nature: it may rest to a degree on financial components rather than labor components. Where might there be labor components? Conversations with economists from both IHS and Moody's (another economic forecasting firm) indicate that their main view is that tightening financial conditions will slow construction activity, primarily through the single-family new home construction market, and that there may be a delayed redeployment of those effected companies and individual workers into commercial or public works projects, or indeed even into the multi-family home construction market. The delays may be regional in nature, depending upon the projects already within pipelines.

How might the financial components operate? High inflation has spurred the Federal Reserve, among other central banks, to raise short-term interest rates. Through the bond markets, this has pulled intermediate term interest rates upwards as well. For instance, the 10-year treasury yield has been in the low-4 percent range towards the close of October, having been as low as near 1.6 percent at the opening of 2022. Those in turn signal to banks and non-banks alike to raise mortgage rates, and these have, as is well known from headlines, doubled to near 7 percent this year. These higher interest rates push buyers down-market in terms of housing, possibly pushing them out of the market if there is insufficient lower-priced housing in the locale they seek.

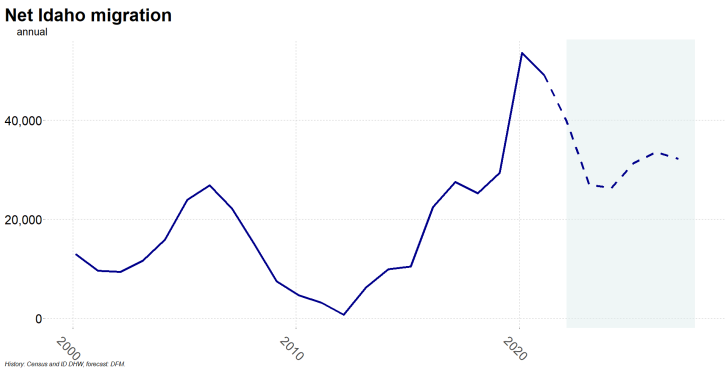
This means fewer transactions and at lower prices, putting a damper on economic activity. This occurs through retail, which benefits from people refitting their living environments, to the financial industry, which operates to a degree in terms of commissions, through to construction, in terms of remodeling to meet new owner's desires. It also slows construction through lower starts: builders, seeing fewer sales, recognize that the market for new homes is also likely to diminish. This, though, again points to a divergence by region. Those which have greater demand for housing may be insulated, perhaps enough so to pass through the anticipated slowing entirely.

While the regional experience may differ, the IHS narrative does have compelling points at the national level. One of the main economists for the US forecast from IHS was interviewed, with the context being earnings season on Wall Street, with the subtext being "businesses that are starting to feel the teeth of rising interest rates." The economist mentioned that "the housing sector is the first sector to respond by contracting." He then expects equipment spending to slow,

and eventually consumer demand for durables will wane. The article pointed out that, at least currently, businesses which sell to final individual consumers are faring well, but that businesses whose customers are other businesses—the so-called intermediate businesses—are starting to see the slowdown, and that is reflected in the language these intermediate businesses use as they communicate their expectations for their own business going forward. An example of a predominantly intermediate business would Microsoft, which sells software and cloud-computing to other businesses. Its earnings guidance came closer to 2 percent growth rather than the expectation on Wall Street which had been running closer to 8 percent.

Idaho housing and population. Freddie Mac, the quasi-governmental agency which publishes weekly average mortgages rates also researches the housing market. In a mid-summer publication, it studied migration patterns. Using earlier established understandings on reasons for moves differing by the distance of move, Freddie Mac found that the pattern of migration during the pandemic is supportive of households relocating for lower housing costs.

Not surprisingly, Idaho was a net destination state, as reinforced by the metro areas covered in the Freddie Mac study. The Boise MSA, as well as Twin Falls, Idaho Falls, Lewiston, and the greater Coeur d'Alene areas all saw moves in outnumbering moves out within the Freddie Mac data. Boise also made a list of larger metro areas with a table of numeric estimates of net moves. Where were these new migrants likely coming from? Only two types of metro areas were consistenly losing residents: the large and, in particular, the super-large metro areas lost residents. Note that this included Seattle, Portland, and even Salt Lake City as shedding residents. All of the next largest metro areas in Utah were net gainers, though.



While the weekly posting of average mortgage rates by Freddie Mac each Thursday gives an indication of the mortgage market, there is significant variation around those averages. Partly this is due to different lenders and different buyers. Partly it is due to paying points.[14] But there is also an aspect of delay in the collection of data. A recent Wall Street Journal article indicated that daily mortgage rates can be significantly above the values recorded for the week. Examples shown placed the difference sometimes as high as 0.4 percentage points, though these examples did happen to be near changes in interest rates by the Federal Reserve. Still, the point remains that there are a significant number of mortgage borrowers who will end up with mortgages rates above 7 percent even if the Freddie Mac interest rate quote around that time is (marginally) below 7 percent. There can also be daily differences from the weekly average. One can compare daily data with the weekly

[14] Paying points means pre-paying interest on the loan.

averages. Keeping all these sources of variation in mind, the final weekly posting by Freddie Mac for October showed average rates for the fixed 30-year mortgage at 7.08 percent.

Another article from Freddie Mac considered the broad features which seem to have lead to the rapid price appreciation that housing exprienced during the pandemic. It displays a Beveridge curve for housing supply (on the market) and price appreciation. Fewer months of supply have tended to result in steep appreciation, and this has been concentrated in 2021 and 2022, with 2020 showing the transition from what had been typical across 2010–2019. This is the push feature of supply on pricing. Less supply pushes prices upward. Freddie Mac also found that there was a demand feature as well, which worked in tandem. The 25–34 cohort had been expanding, and a more sizable portion of it has recently been earning higher incomes.

Another demand feature which seems to have affected housing prices is all cash offers. Data suggests that more than a third of transactions were all cash in the second quarter of 2022. Some of this is institutional investors,[15] but these represent one in every sixteen sales, rather far from the one in three which are all cash transactions. This means that the greatest bulk of all cash offers come from individuals, and that would seem cooborative of the view from Freddie Mac research that individuals are relocating for lower housing costs. perhaps trading from an area where a mortgage remained necessary to one where the owner's existing equity would permit outright acquisition.

The Atlanta Federal Reserve Bank has a calculator for affordability of housing by metro area. It relies upon median household income and median list price. Boise crossed from being affordable to being unaffordable at the close of 2020, as home prices rose above $360 thousand locally. Unaffordability has remained worse in Boise than for the nation overall since then. Coeur d'Alene crossed from affordable to unaffordable by that metric in the autumn of 2019, and it has remained less affordable than the national measure ever since. Pocatello switched over in May 2021, but largely is mirroring the national changes through March 2022 before becoming noticeably more unaffordable than the national measure since then. Idaho Falls crossed above the affordability threshold near Thanksgiving time in 2021, but has subsequently remained very slightly closer to affordable than the national measure. The most recent national measure, for August 2022, shows over 43 percent of median household income is required to[16] purchase the median list-priced home or condo. Housing is considered affordable if at most 30 percent of median household income is required for payments. The August reading for Coeur d'Alene, the most unaffordable of these Idaho areas, was registering at over 54 percent of median income being required for monthly payments.

The Freddie Mac forecast for home prices is of a decline by less than 1 percent in the third quarter of 2022 followed by four quarters of no discernible change in home prices, and and then a slight decline of less than a quarter of a percentage point for the final quarter of 2023. The view from IHS is that markets could see 6 percent declines by the close of 2024. Adjusting for expected inflation in the broader economy across that time-frame, that would be equivalent to a

[15] real-estate investment trusts, or REITs, for example

[16] sustain the monthly payments, based upon a 10 percent down payment—this is footnote f in the data definitions and sources—in order to

13 percent reduction in real prices. For some numeric context, the median existing single-family home is expected to be priced at $390 thousand in 2022, but just $343 thousand in 2024.

The Atlanta Fed data for Boise showed a median home price of $461 thousand in August, up $100 thousand from December 2020. For Idaho Falls the corresponding figures are $380 thousand and a $93 thousand change upwards since December 2020. For Coeur d'Alene they were $484 thousand and a $102 thousand increase since December 2020.

Labor markets. Here are the IHS as well as the DFM projections for nonfarm job growth across this and the past two October forecasts. Note the stability in the forecasts. Here are the national

ID job growth	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
current	3.28	2.95	-0.06	5.03	3.05	3.29	2.56	2.81	2.98	2.81
one year ago	3.28	2.95	-0.18	4.23	5.28	3.63	2.84	2.83	2.91	
two years ago	3.28	2.95	-1.46	4.86	3.08	2.69	2.43	2.65	2.78	

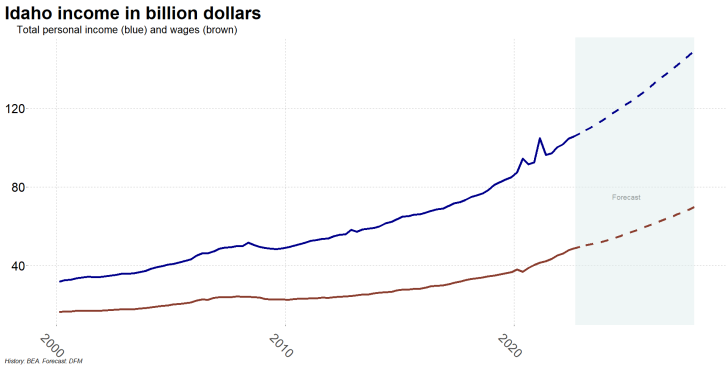
counterparts The IHS forecast is stable toward the final years, but there is a substantial reversal

US job growth	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
current	1.56	1.34	-5.80	2.78	4.01	-0.43	-0.50	0.86	0.69	0.47
one year ago	1.57	1.35	-5.73	2.63	3.60	1.94	0.96	0.59	0.48	
two years ago	1.57	1.37	-5.55	3.32	2.57	1.80	1.37	0.89	0.63	

in 2023–2024, consistent with the firm's call for a mild recession in the US in 2023.

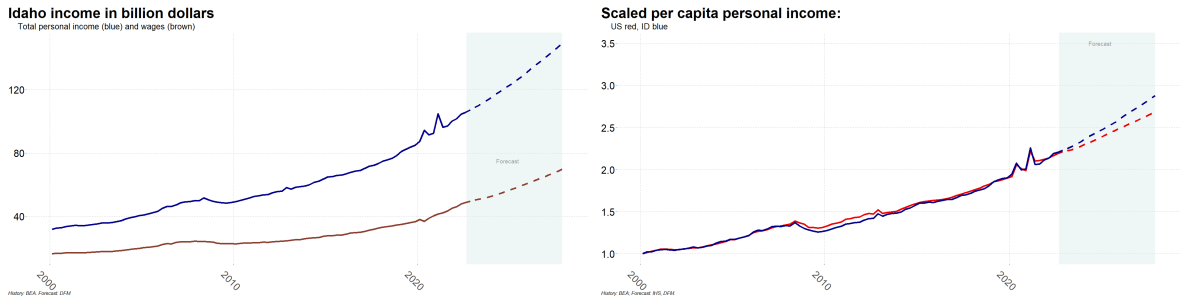
Personal income. Here are the IHS as well as the DFM projections for personal income, wage income, and per-capita versions of personal income as well as average wages.

Notice that there is a substantial gap between total wages (and bonuses) and total personal income. The remainder is covered by things like supplementary income, for which health insurance provided by an employer is an easy to grasp example.



It is also instructive to consider the outlook more at the individual level. Here, the per capita personal income values are close to average wages. Average wages are computed only against jobs. Per capita values are computed against the entire population.

Note that there has been some divergence in scaled per person personal income during the recovery from the 2008–2009 recession. A divergence in the other direction is anticipated in this forecast.



Spending. The US economy is dominated by consumer spending. The rule of thumb is that it accounts for two-thirds of GDP. The University of Michigan Consumer Sentiment Index gives some indication of future spending. It plummeted to a reading to a 20-year low in the early summer, but has only risen back to levels typically observed across the 2008–2009 recession. The bounce from that 20-year low was linked to falling gasoline prices in late summer. In its forecast, IHS has the index near these lows through 2023 before a rapid improvement across 2024–2025. In light of recent spending activity, the index provides some color to the type of downturn we might expect. The personal income figures just discussed gives some indication of the long-term ability to spend.

National business and consumer spending. The New York Federal Reserve Bank (FRBNY) conducts a survey of consumer expectations. Among the interesting results the survey provides are views from households on household finances. In the period from 2013, households expected income growth to generally be between 2 and 4 percent per year. There was a notable drop at the onset of the pandemic from near 3 percent to just below 2 percent. Contrast that with what households expect for spending growth, which has been above 4 percent during 2013–2015, then largely remained in the 2–4 percent band until 2021, but has been over 6 and even above 8 percent across 2022. While the expectations on falling further behind debt payments has not exceeded the typical measure in 2022, there is a notable expansion of the portion of households indicating that their financial situation has turned somewhat worse recently. Still, that measure puts well over 60 percent of households as either improving or at least staying comfortably where they have been in 2022.

IHS has consumer spending expanding by over 8 percent in 2021, which may suggest that the FRBNY expectations are actually realizations of recent activity. Its forecast for consumer spending in 2023 is 2–3 percent growth, with a slight contraction in 2023, before 1–2 percent growth in 2024.

Businesses are also expected to pull back in spending according to the IHS forecast. Growth in spending here was 6.4 percent in 2021, is expected at 3.2 percent in 2022, a contraction by 1.6 percent in 2023, followed by 0.2 percent contraction in 2024. Modest growth (under 3 percent per year) resumes for 2025 and 2026. Notable among the contracting portions of spending is that information processing is expected to reverse from 9.8 percent growth in 2021 to a 1.2 percent about-face in 2023. Commercial building and healthcare facilities is expected to continue to

slide: down 7.6 percent in 2021, it drops 14 percent in 2022, followed by 12.4 percent in 2023, all before a (relatively) mild 0.4 contraction in 2024.

Idaho businesses and consumer spending. In mid-October, Kroger grocery announced its intention to buy Albertsons Stores for $24.6 billion. If the deal goes through, the combined company would have annual revenues near $200 billion and a bit under 13 percent of the US grocery market. It appears that both sides of the deal have anticipated that some stores would need to be divested before the acquisition, which Kroger plans on paying for with cash and debt financing.

As Kroger operates the Fred Meyer brand and Albertsons operates its eponymous stores, both with presence across much of Idaho, local stores might be part of the divestitures needed to obtain regulatory approval. The companies expect the deal to take till the end of 2024 to finish. At that time, $4 billion in special dividends could arrive to Albertsons shareholders as part of the closing of the deal.

The Chips and Science Act from the federal government has brought about announcements for computer/memory chip manufacturing and research facilities. Micron announced a Boise facility at a value of about $50 billion, with 2,000 local jobs once it is fully operational. Initial operations are expected in 2025 at the new local facility. Micron then subsequently announced a $100 billion investment in a production facility in upstate New York. That plant would employ 9,000 directly. There the timeline is two decades, with one-fifth of the monetary investment before 2030.

Earlier in October, though, memory chip makers announced lower earnings expectations. This includes Samsung, the largest memory producer, as well as Micron. Memory chip prices were expected to decline across the remainder of 2022 and across all of 2023. Still, Micron's CEO indicated that capital investment by the company was expected to reach $8 billion this (company fiscal) year.

Both the Micron and the Albertsons news have been of international interest, with coverage in *The Economist* magazine. That publication does portray the perils in each endeavor. For the semi-conductor industry, its comments are: "The industry is notoriously cyclical: new capacity takes a few years to build, by which time the demand may no longer be white-hot,' it later follows up with the observation that "the combination of more supply and less demand is a recipe for trouble." The smaller expected demand is partly coming from restrictions on exports to China, where the market has been as large as $400 billion in 2021. Certainly those who work in the industry are aware of these issues and must, at some level, have faced them during the drafting and negotiation of the Chips Act. With regard to the grocery merger, the magazine places the market share a bit higher than that reported elsewhere, at 19 percent, still second to Walmart's 25–30 percent[17] market share. As in other news stories, the magazine points out that the two grocers have preliminarily prepared for divesting up to 375 stores[18], but that the Federal Trade Commission may look to the earlier merger between Albertsons and Safeway

[17] depending upon whether Sam's Club is included, a subsidiary of Walmart
[18] out of there approximately 4,700–4,800 total

where similar divestitures proved only temporary as the initial purchaser of the stores went bankrupt and Albertsons re-acquired the real estate. The magazine did indicate that trade data in the shares of Albertsons suggests that Wall Street is of the opinion that the acquisition will happen.

In a different vein, there has been news for Lemhi County as well. Since Idaho's statehood, it has been known as the gem state. Lately mining has been a declining sector, but the opportunity for a new cobalt mine outside Salmon may reverse the trend. The mine will be the first new one opened in decades in America and the only cobalt mine in the United States. Acquiring a domestic supply of cobalt will aid in efforts to expand America's supply of "green metals" needed to create batteries.

The new mine will be operated by the Australian firm Jervois Global and will be established at the site of the old mine which closed in 1982. That mine was the last cobalt mine to be shut down in the United States. The new mining operation will be primarily performed below ground, in contrast with the old, open-pit mine. New mining techniques may mitigate environmental impacts and could expand the mine's operative lifespan.

Jervois estimates the mine to be worth $100 million. It is unclear exactly what the labor-force impact will be, and whether the company will bring workers in from overseas or rely on a domestic workforce. Drilling is expected to begin in the summer of 2023. The mine is expected to supply around 10 percent of US demand, and there are currently no plans for further cobalt mines in the United States.

Economic outlook

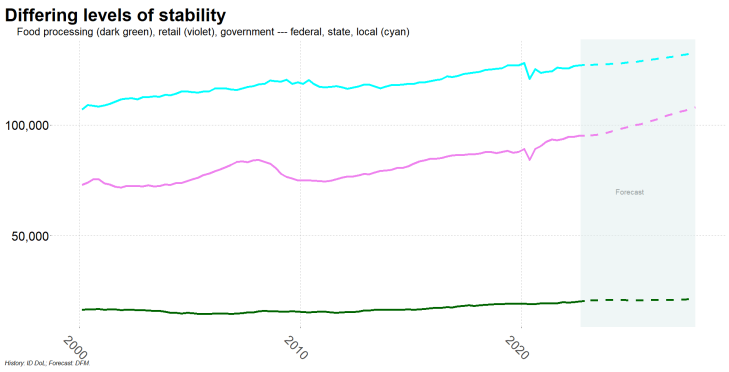
The story for Idaho relies upon population growth. That allows for swifter jobs growth than what is predicted for the US by IHS. Population growth also brings with it additional personal income growth. Perhaps the fairer comparison if one's aim is to understand how the economy would feel for a typical individual is to consider the trajectories for average wages in Idaho and in the US. However, as state or federal revenue is tied with aggregates such as total personal income and total wage payments, there is a place to consider those as well.

US growth rates	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
US nonfarm jobs	1.56	1.34	-5.80	2.78	4.01	-0.43	-0.50	0.86	0.69	0.47
US population	0.58	0.49	0.34	0.14	0.27	0.41	0.48	0.49	0.49	0.50
Total personal income	5.01	5.11	6.70	7.37	2.12	3.71	4.56	4.89	4.68	4.59
. . . inflation adjusted . . .	2.82	3.56	5.54	3.26	-3.97	0.18	2.39	2.83	2.63	2.51
Wage & salary payments	5.02	4.77	1.42	8.81	8.76	3.50	4.14	5.20	4.83	4.44
. . . average US wage . . .	3.41	3.39	7.77	5.73	4.58	3.96	4.65	4.30	4.11	3.95

ID growth rates	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ID nonfarm jobs	3.28	2.95	-0.06	5.03	3.05	3.29	2.56	2.81	2.98	2.81
ID population	1.88	2.11	3.28	2.88	2.10	1.49	1.39	1.57	1.61	1.47
ID personal income	7.11	5.73	7.41	11.96	10.59	7.63	6.45	7.55	7.70	7.47
. . . inflation adjusted . . .	6.32	8.63	10.14	8.86	4.50	7.02	6.90	6.61	7.39	6.88
Wage & salary payments	4.10	7.03	8.95	4.70	-1.34	2.96	4.69	4.53	5.28	4.75
. . . average wage . . .	3.85	3.40	7.03	6.74	6.24	5.52	3.99	4.65	4.61	4.61

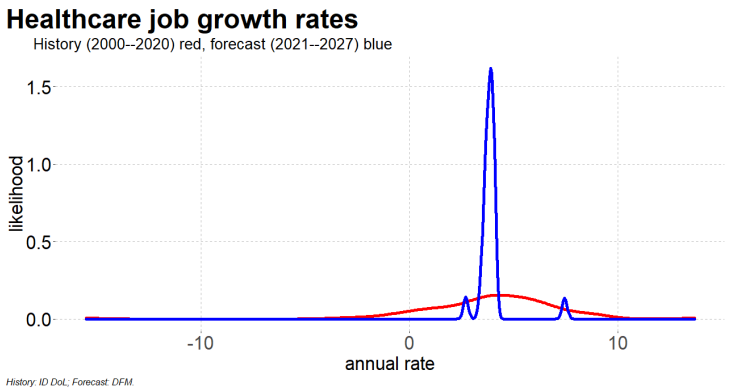
Housing starts and construction. That Idaho has grown its population substantially will aid housing this year. The growth figures are for housing in total, single-family added to multi-family. Interest rate pressures are expected to slow housing a bit in the near-term. There has been substantial multi-family activity this year, and that raises the outlook for that subsector in the forecast. Multi-family may also benefit at the expense of single-family due to rising costs associated with financing. It has the possibility of greater economies of scale.

		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
US	growth	3.54	3.50	8.06	15.06	-2.52	-22.01	8.04	7.60	-1.84	-1.90
	single units	871,417	888,583	1,001,917	1,131,083	1,022,581	832,497	936,665	994,146	973,261	952,824
	multi units	375,917	402,417	393,167	474,083	542,163	387,888	381,813	424,550	419,316	413,342
ID	growth	14.81	4.70	8.78	14.14	15.84	-23.58	-7.53	1.29	1.62	0.56
	single units	13,033	13,017	14,575	16,413	14,697	12,644	11,806	12,080	12,476	12,792
	multi units	3,059	3,831	3,753	4,505	9,534	5,873	5,316	5,263	5,148	4,931



Sectors. It may be surprising how responsive some sectors are to economic conditions. Retail may well be thought of as following the intensity of the economy. It may be somewhat surprising to see that government does to a discernable degree. Partly this reflects that there are at least three levels of government: federal, state, and local. Food manufacturing, as shown in this graph, appears steady. That is partly true, but it is also partly a reflection of its smaller nature. The scale of the graph suppresses the twists and turns it endures. Still, all three are expected to have steady trajectories into the near-future.

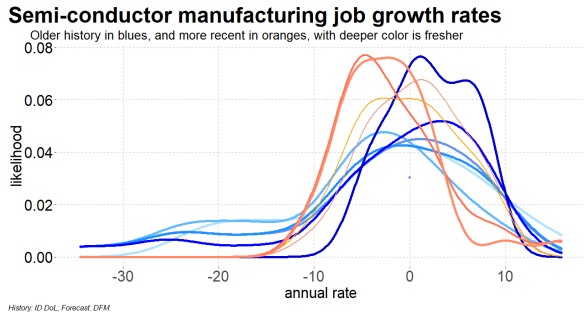
The last of our graphs will be distribution graphs, showing the general pattern of the growth rates. These growth rates are measured quarterly at annualized rates. The distributions cover the period 2000–2027. The forecast part is grouped with a little recent history, 2021–2022q2, in order to have 32 measurements on which to base the distribution. The distribution for healthcare has shown that growth around 3–6 percent is to be expected. That is where the greatest bulk in the red hill is concentrated. While growth above 10 percent is possible, it is rare. In this instance, that represents the rebound from the pandemic shutdown, when healthcare largely resumed elective care and patients returned to those services in late 2020. Contraction is also possible. There have been markedly few quarters where healthcare did not expand its employment in Idaho. This is reflected in the red graph by there being little bulk under the red curve and to the left of the 0 on the horizontal axis. Finally, the blue curve is highly concentrated. That concentration depicts that growth is expected to be quite stable in the forecast.

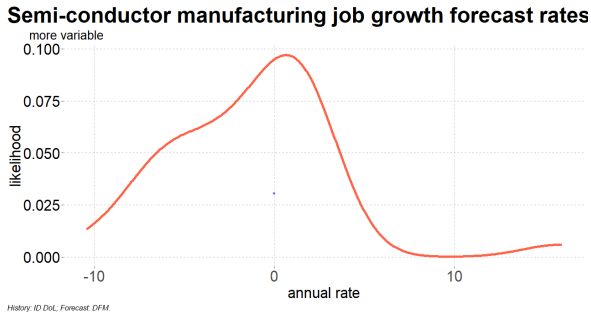


We illustrate with two distribution graphs first because the next sectors we discuss have had much more variable growth patterns. In the ensuing graphs, each colored line represents 8 consecutive years of data. Again this gives each distribution graph the heft of 32 measurements.

With HP, On Semi-conductor, and Micron all large players in the semiconductor industry, it is perhaps surprising to see that there have been substantial portions of recent history in which the industry's employment has shrunk in Idaho. Here we use two plots to give an indication of the evolution of the growth rates. Each line represents 8 years of quarterly data, with each line showing the

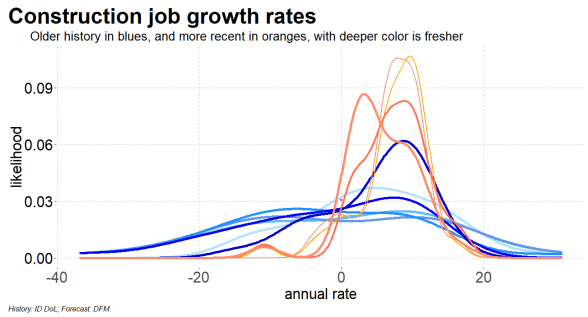
distribution of growth rates for 32 measurments on an annualized basis. The forecast is depicted

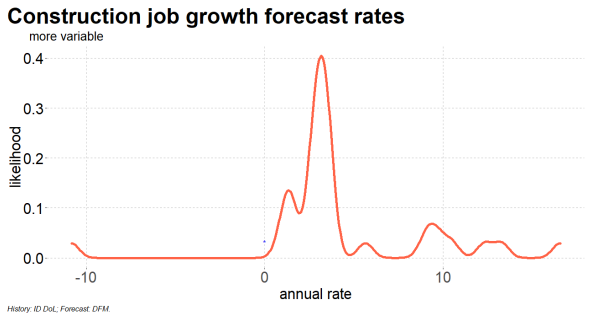




by the single line graph, which covers 2021–2027. We are aware that Micron has announced a major expansion in Boise. That expansion will take some time before workers who would be classified as semi-conductor manufacturing workers will be newly on the job. Exactly what that count will be is also to be determined; some may be classified as research scientists, and would be counted in elsewhere in the Idaho economic model. Consequently, there is no big "bump" intentionally added to the semi-conductor manufacturing job count for the forecast just yet.

A sector which has had quite a run of growth has been construction. For this sector, rising interest rates are a new headwind. Two plots give an indication of the evolution of the growth rates. Each line represents 8 years of quarterly data, showing the distribution of growth rates. That the bulk of the most recent blue hills is to the right of the bulk of the orange hills



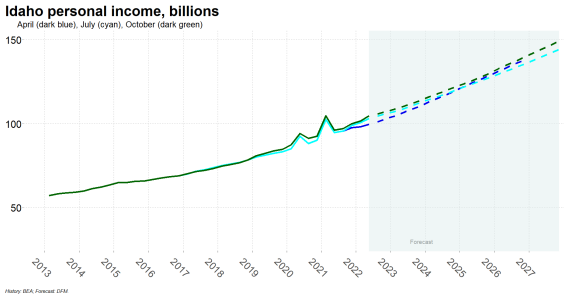


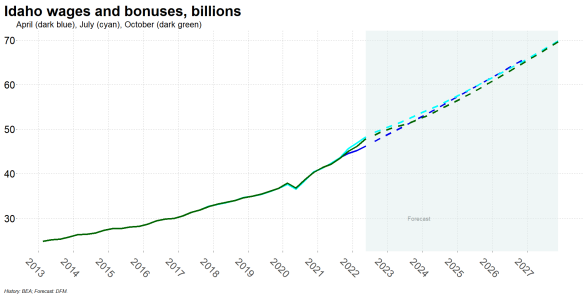
indicates that the most rapid growth in this sector is further back in history. Partly that is to be expected: growth in larger sectors is more difficult to achieve. Note that the scale on the horizontal axes differs. The multi-line graph shows that growth above 10 percent was a regular feature historically after the 2008–2009 recession. The fainter blue hills show that contractions were fairly common in periods which contained that recession. The brightest orange line shows that more recent history has favored growth more in the 5 percent range. That is what the forecast, depicted in the single line graph, is expecting.

Forecast analysis

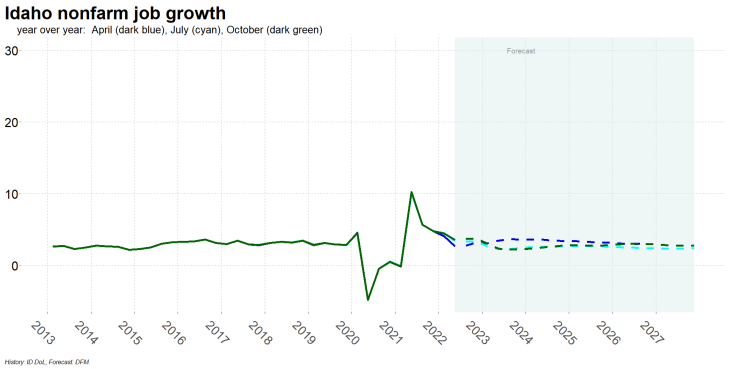
Forecast comparison. Aside from the mild recession call for the final quarter of 2022 through the first half of 2023 by IHS, other change have occurred since the prior editions of this publication. Ukraine was able to export grain from its port Odessa via a Turkey-UN backed agreement. Russia pulled out of that agreement in the last weekend of October. Officially, the agreement was to last until November 19.

The Federal Reserve upped short-term interest rates in September. They are widely expected to do so by a similar amount on November 2. Thirty-year mortgage rates topped 7 percent in the final October reading by Freddie Mac. They began the year under 3 and 1/4 percent, and were near 5 and 1/2 percent in mid-July. The housing market has come off of its roiling boil. Transaction times are measured in months again. While it may seem comparatively inconsequential, the sale of Twitter was completed before a court-imposed deadline; however, consequences for future merger and acquisition activity may occur, depending upon the losses the underwriting banks take on the debt side of that deal. There may be a lull as banks work to overcome those losses.





Behind the scenes, the Bureau of Economic Analysis revised the quarterly figures for personal income in the US, at the national as well as at the state levels. The revisions go back through 2017. This occurred as the readings for the second quarter of 2022 were released. Similarly, there have been revisions to the GDP figures. These revisions are in addition to the usual three readings for quarterly GDP. Looking at third quarter, the initial reading was publised October 27. The first re-reading will be released November 30. Looking back to second quarter, the difference between the readings was 0.3 percentage points: the second and eventually final estimate, August 25 and September 29, was for 0.6 percent contraction rather than the 0.9 percent contraction from the initial reading, July 28.



Given the recession call by IHS, perhaps the most important economic feature at the individual level is employment. Here is a year-over-year depiction of growth as envisioned across the past three forecasts. Overall, the trajectory is fairly calm, aside from the shutdown and reopening due to the pandemic. While this could evolve, indeed, the graph illustrates that it does, it is likely to take a more major disruption to economic activity than a few quarters of mild, national contraction to dislodge the overall expectation.

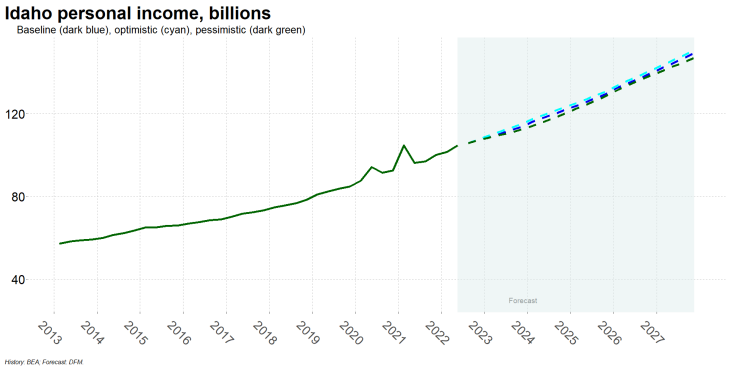
April forecast		2022	2023	2024	2025	2026	2027
Personal income	$ m	99,823	107,181	115,941	125,189	134,433	
Wages	$ m	46,491	50,743	55,063	59,561	64,034	
Population	count	1,952,361	2,016,049	2,065,301	2,108,180	2,149,072	
Nonfarm	jobs	823,097	854,902	885,787	915,854	944,297	
July forecast		2022	2023	2024	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
October forecast		2022	2023	2024	2025	2026	2027
Personal income	$ m	104,848	111,323	119,006	126,878	136,249	145,624
Wages	$ m	48,051	51,175	54,476	58,592	63,101	67,812
Population	count	1,940,875	1,969,872	1,997,162	2,028,559	2,061,220	2,091,619
Nonfarm	jobs	829,085	849,597	871,377	895,826	922,507	948,427

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.

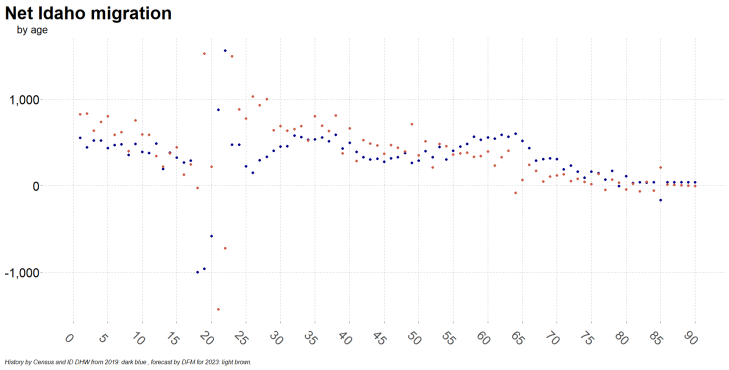
Alternative forecasts. Overall, IHS tilts the odds to 35 percent for the pessimistic case, 15 percent for the optimistic, and the remaining 50 percent for the baseline.

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 Idaho's economy was quite dynamic in 2020–2021, the change across that history does provide some context for the changes envisioned in the three main IHS alternatives.

None of the three scenarios from IHS suggest, yet, that Idaho is likely to see a major disruption to economic activity. Personal income under the three scenarios is expected to stay fairly in-line. There are, of course, a lot of stabilizers to personal income. One which will begin in 2023 is a substantial cost of living adjustment for social security and disability payment recipients. These payments are set to increase by over 8 percent. While Idaho does not tax social security via its income tax, recipients use it for everyday spending, keeping the economy in motion.



Though some newcomers to the state are of the ages eligible for social security payments, there are many new transplants who are years, and even decades away from collecting. Those newcomers are largely responsible for the possibility that Idaho can continue to see expansion of nonfarm jobs. That expansion is also crucial for the extended growth in personal income anticipated in this forecast. In the accompanying graph, the inferred migration pattern for 2019 ■ and the expected migration pattern for 2023 ■ are displayed. Notice that there is substantial net migration into Idaho in the prime working age range 25–54.



Idaho		2020	2021	2022	2023	2024	2025	2026	2027
Nonfarm jobs	baseline	759,942	798,189	829,085	849,597	871,377	895,826	922,507	948,427
	optimistic	759,942	798,189	829,561	852,899	875,618	899,789	925,839	951,116
	pessimistic	759,942	798,189	828,900	843,315	858,323	883,853	914,312	942,565
Wages, m $	baseline	38,400	42,992	48,051	51,175	54,476	58,592	63,101	67,812
	optimistic	38,400	42,992	48,068	51,564	55,142	59,440	64,096	68,930
	pessimistic	38,400	42,992	48,040	50,686	53,186	56,914	61,237	65,537
Housing starts	baseline	18,327	20,918	24,232	18,517	17,122	17,343	17,624	17,723
	optimistic	18,327	20,918	24,220	18,352	16,860	17,102	17,452	17,674
	pessimistic	18,327	20,918	24,263	18,678	17,859	18,865	19,688	19,955

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:

> **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.

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, billons 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
ID0YP	Total real personal income, 2005 dollars
ID0YP$	Total personal income
ID0YP$PC	Per capita personal income
ID0YPNF	Nonfarm personal income, 2005 dollars
ID0YPNF$	Nonfarm personal income
ID0YPNFPC	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