



Idaho Economic Forecast

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January 2024

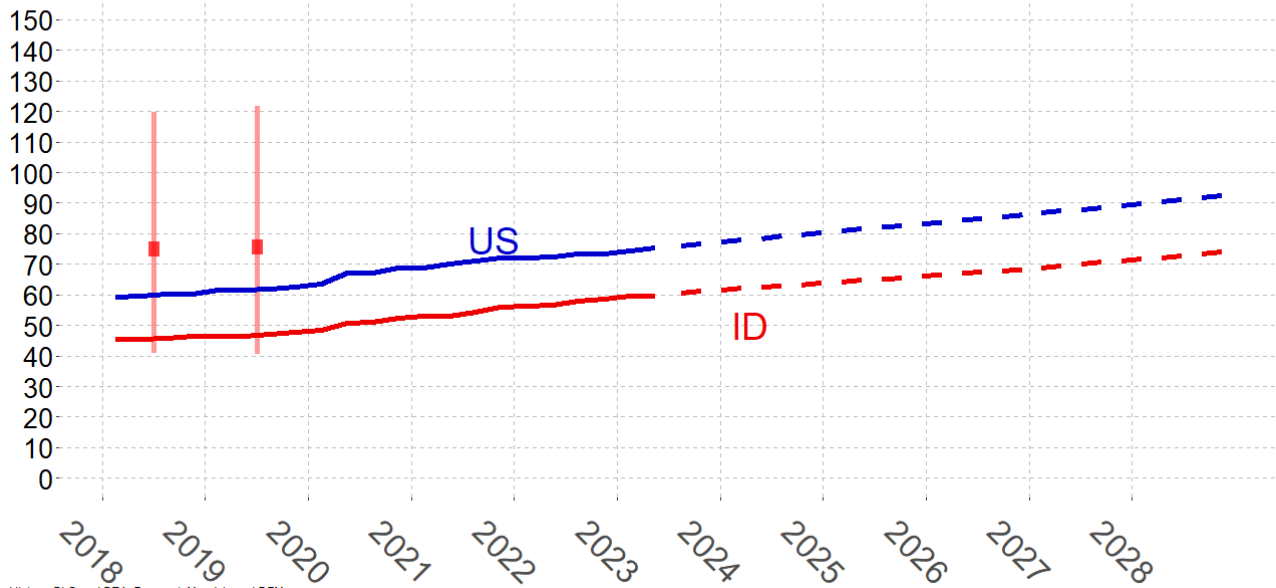
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- Forecast begins the third quarter of 2023
- Alternative forecasts

Average wagebill

per nonfarm job, in thousand dollars per year



History: BLS and BEA; Forecast: Moody's and DFM.

**Idaho
Economic
Forecast
2024–2028**

State of Idaho
BRAD LITTLE
Governor

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Introduction

This document summarizes Idaho's economic forecast for 2024 through 2028. The primary national forecast in this report is the December baseline forecast for the US economy by Moody's Analytics. The Idaho economic model takes the 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. Moody's 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.

Idaho Department of Labor provides monthly historical employment data that are seasonally adjusted and converted to quarterly frequency by DFM. Data is complete through 2023Q2.

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/> for the Federal Reserve Bank of San Francisco. [November 8](#) saw a publication on the remaining pandemic-era savings, while a recent economic outlook was published [November 30](#), and the economic letters publications we often reference have recently had notes on participation rates [October 10](#) and more recently on the outlook for hiring [December 18](#).

Historical and forecast data for Idaho are available. These are now provided via [this link](#).

Cover. Traditionally, personal income is shown on the cover of the January publication. This year we are showing average wage per nonfarm job instead. That is reflected in the blue and red curves. History is represented by solid lines; forecasts are represented by dashed lines. Recent work from the Federal Reserve Bank of Minneapolis has brought information on the distribution of income for each state. Two vertical strips represent the data available and within the time-frame of our graph. The longer, thinner, and more transparent vertical strips represent the 25th to 75th percentiles of AGI per address. The shorter, thicker, less transparent vertical strip records where the median of AGI per address site. Comparing those values with the nonfarm job wagebills, it is apparent that most addresses represent either multiple jobs (possibly through multiple job-holders) or additional income streams beyond wagebills. For the latter, that includes transfer payments such as social security as well as nonwage earnings such as dividends.

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

Gross domestic product information for the US has shown great resiliency. International conflicts and high interest rates have not derailed the recovery. Jobs growth continues and unemployment remains low. Wage gains are moderating, but are currently exceeding inflation. Immigration to the US has returned; population growth would be precarious without immigration as births and deaths are not far apart for the existing population.

Several disruptive strikes have been resolved this past autumn, including for actors and writers and for autoworkers. These resolutions are recognized in the most recent jobs numbers, which showed a 3.7 percent unemployment rate in the US. This means that just under two in fifty working-age people in the US are out of work and seeking employment within the past four weeks.

Recent readings on inflation have been a bit above the target of 2 percent, but they have been heading towards that target the past few months. This has been aided by oil prices being stable and by some expected moderation in rent. The phenomenon is not just occurring in the US. Europe and Canada have also seen moderation in inflation, with the changes approaching the desired level.

The outlook is for the Federal Reserve to maintain interest rates at their current level for a bit longer, but then to eventually and quite gradually reduce them across a few years. The expectation for the initial cut to short-term interest rates is often placed on mid-2024; markets have on occasion implied that this may occur as early as the first quarter of 2024. Communication from the Federal Reserve has indicated a bit later start. The December Summary of Economic Projections indicated that the participants in the meeting which sets short-term interest rates see the possibility of 3 quarter-point cuts before the end of 2024.

Unemployment in Idaho has generally drifted upwards a bit this year. Still, at 3.2 percent in October, it remains below the national unemployment rate. Nonfarm employment data show jobs growth continuing across 2023. The expectation is for moderate jobs growth across 2024–2025.

Areas of expected job growth are healthcare, construction, and leisure and hospitality. Together, these three sectors are expected to add just over 10,000 jobs in calendar year 2024, and an additional 8,000 jobs in 2025. The last of these sectors has had among the most difficult recoveries from the pandemic shutdown. Partly that may be due to the nature of the work, partly that may be due to salaries in the industry, and partly that may be due to changing habits by consumers, which have pushed demand within the industry to different parts at different times. For example, fast foods establishments have done well, but sit-down restaurants have done less well, at least nationally.

On the horizon, the expected hiring for Micron's new fabrication plant remains in the future. Construction is beginning, but it will be a while before new clean-room technicians are occupying the new buildings. Similarly, St. Luke's expansion of its campus in the east end of downtown Boise is yet to occur. In the meantime, there are several high-rise buildings mid-way to completion in Boise, keeping construction crews occupied.

Also on the horizon, a 2024 decision by the FTC is expected in the Albertsons-Kroger merger. Idaho is expected to see an expansion of federal workers in its forests. They aim to reduce wildfire risks. Vista Outdoors has one offer for its ammunition manufacturing units; it turned down a rival offer. Lewiston is a major manufacturing hub for bullets. Idaho Power is lining-up power supplies, partly spurred by both Meta and Micron. These supplies are largely solar and wind with battery back-up, and the mix is designed to be the lowest-cost and lowest-risk combination.

Avista (with the aid of many other utilities) was able to restore natural gas service to central Idaho after a rupture at a pipeline in eastern Washington. Work on the Nampa wastewater treatment facility is past Phase I and is approaching Phase II, with a goal of meeting regulatory requirements until 2031. In other utility news, the small modular nuclear reactor project at INL has come to a commercial close.

US	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
real GDP growth	2.47	-2.21	5.8	1.94	2.43	1.72	1.66	2.24	2.39	2.44
inflation, CPI measure	1.81	1.25	4.68	7.99	4.15	2.8	2.35	2.22	2.18	2.22
Federal Funds rate	2.16	0.37	0.08	1.68	5.03	5.11	4.16	3.19	2.95	2.76
mortgage rates	3.93	3.11	2.96	5.33	6.82	6.73	6.31	6.08	6	5.93

Current economic conditions

Economic Watch. Real gross domestic product has grown from 21.85 to 22.49 trillion from 2022Q3 to 2023Q3, each measured in the value of the dollar as of 2017. This represents 2.9 percent real growth. Generally, economists have seen that 2 percent annual growth is the long-term expectation for an advanced economy such as the US with demographics similar to the US.

Recently, the Federal Reserve has indicated that there are some times when economies can run above long-term expectations without so-to-speak overheating. The gradually declining rate of inflation across 2023 and a remarkably stable unemployment rate has indicated that the US economy is not running too hot for its potential. Partly, the Federal Reserve has pointed towards new entrants into the jobs market as offering some relief from the pressures inherent in the current economic expansion. These workers have alleviated some of the difficulty that employers were encountering during 2021–2022 in finding workers.

Moody’s December forecast for real GDP growth is 1.07 percent while the Atlanta Federal Reserve Bank’s January 2nd estimate ([GDPnow](#)) was for growth of 2.0 percent; that bumped up to 2.5 percent on January 3. The New York Federal Reserve Bank has resumed producing its concurrent estimate as well; its estimate ([Nowcast](#)) for 2023Q4 is 2.4 percent, and estimate last updated December 29. All of these estimates are recorded as annualized growth rates.

The New York Fed is also producing an estimate for 2024Q1; that stands at 2.21 percent as of December 29.

International. ¹

Two major questions remain to be addressed, and these were questions at the beginning of 2023Q4 just as they remain so at the beginning of 2024Q1. For Ukraine: what level of funding will there be from the US? For Israel: what will be the aftermath? In fact, both questions pertain to both conflicts, though there seems to be a perception that the Israeli–Palestinian war will be of shorter overall duration. There have been some recent events suggesting a spread of the latter conflict beyond the Gaza area, with attacks on shipping in the Red Sea, an assassination in Beirut, Lebanon, and bombings in Iran.²³

The Russian–Ukrainian war has also seen some broadening in scope, the latest being a missile within Polish airspace.⁴ There has also been some concerted counter-attacks by Ukraine on the Russian city of Belograd.

Closer to the humanitarian side, there was an exchange of prisoners of war between Russia and Ukraine. Both sides released over 200 POWs. The deal was aided by the United Arab Emirates.⁵ There have been 49 prisoner exchange events during the war.

¹ The next World Bank publication on global growth, the “Global Economic Prospects” is due to be published just slightly after this publication is made. We expect to reference it in the April edition of this publication.

² WSJ articles: [Boat sinking Dec 31](#), [Beirut explosion Jan 2](#)., and [Iran explosion Jan 3](#).

³ The bombing in Iran was eventually claimed by a branch of Islamic State, and so that may be opportunistic or coincidental rather than a deliberate broadening of the Israeli–Palestinian war.

⁴ WSJ article: [Poland Dec 29](#).

⁵ [NPR](#) and [AP](#).

Moving further from conflict and broadening our view, the International Monetary Fund (IMF) expects global growth to slow in 2023 and 2024 and remain below long run average growth of the 2010s; its latest report is from October.⁶ It has world growth at 3 percent in 2023 and 2.9 percent in 2024. For the US, the figures are 2.1 percent and 1.5 percent for 2023–2024. In an accompanying [blog post](#), the chief economist points out the trends for five-year-ahead growth forecasts looking back across the past fifteen years; see the last graph in that post, the one entitled “Medium-term prospects dimming”. There appears to be convergence in prospects towards the 2–4 percent real growth range.

The OECD⁷ expects the US to grow 2.4 percent in 2023 and to follow that with growth of 1.5 percent in 2024 and 1.7 percent in 2025. That organization sees its members as growing below 2 percent across 2023–2024, but non-OECD countries maintaining growth almost at 4 percent. The world long-run average the OECD cites is for 3.8 percent across 2000–2019, and the organizations forecast for the world as a whole is 2.9 percent in 2023, 2.7 percent in 2024, and 3.0 percent in 2025.

The OECD also sees inflation easing further in 2025 compared to 2024 for most countries, with only India, Saudi Arabia, and China being notable exceptions. However, the first two of these are expected to remain within 2–3 percent across 2024–2025, and china is expected to rise from 1 percent in 2024 to 1.5 percent in 2025. The Chinese economy has seen some of the lowest inflation readings in 2023 for a major world economy. While the organization is projecting softening inflation in most parts of the world, it notes that there is a growth of the list of items having inflation above 6 percent. For the US, this moved from about 16 percent of the items in the CPI basket to about 24 percent from September 2022 to September 2023. Thus, though inflation has overall been slowing, some parts of the economy are proving resistant towards holding prices steady. The OECD does, however, see that monetary policy is likely to win the inflation fight. The group projects inflation as falling from 3.9 percent in 2023 to 2.8 percent in 2024 and then 2.2 percent in 2025 for the US economy. This victory is also visible by the outlook for the US short-term interest rates, which the group sees as reaching 4–4.25 percent at the close of 2025, with steady if incremental changes from the current 5.25–5.5 percent level.

National. The outlook from Moody’s is that the soft landing is their baseline outlook. This means that inflation returns to the Federal Reserve’s 2 percent target in the medium term and that there is no significant rise in unemployment through abrupt, substantial job losses. This soft landing is due to prices moderating significantly, with further moderation set to come from the shelter (housing) category as the known dynamics of the measurement of rents play out. Rents typically adjust only once per year, so there are well-perceived lags in the measurement of inflation when it pertains to housing. This allows the Federal Reserve to lower its short term interest rate to near or just below 4 percent by the start of 2026, and that then would sit underneath the 10-year treasury yield forecast by Moody’s. This would be a reversion of

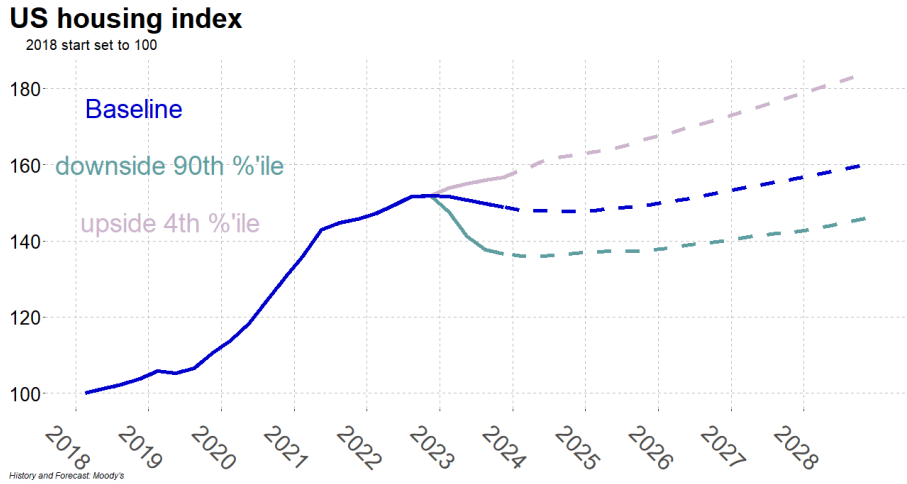
⁶ [IMF October WEO](#)

⁷ Organization for Economic Cooperation and Development—this is a group of 35 countries including the US. This data is from their 29th of November 2023 economic outlook.

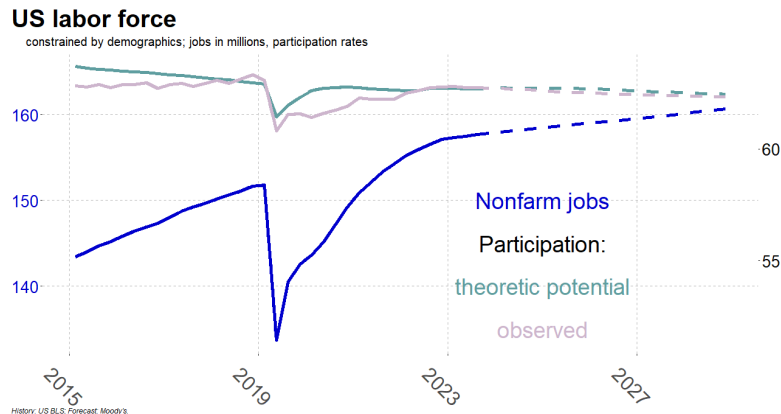
the yield curve inversion which has been present since the start of 2023. A normal yield curve suggests that the economy is not likely to head towards a recession in the next 6–12 months.

Moody’s attributes some of the good fortune that the US economy has had the past two years to resilient consumer spending. While there appears to be a shift still present between services and (towards) goods, the overall spending trend is in-line with expectations prior to the pandemic shutdown. The US regained that trend early in 2021, partly aided by the infused wealth coming from federal stimulus. Other aspects of increased wealth have likely sustained that trend.

One of the large contributors of wealth in the US economy has been the recent housing market. Moody’s indicates that the likely scenario is for some sideways movement, with the housing market resuming its longer-run trend near the close of the five-year forecast horizon. Only in the most optimistic of the scenarios of the firm do US house prices increase over 2024–2026.



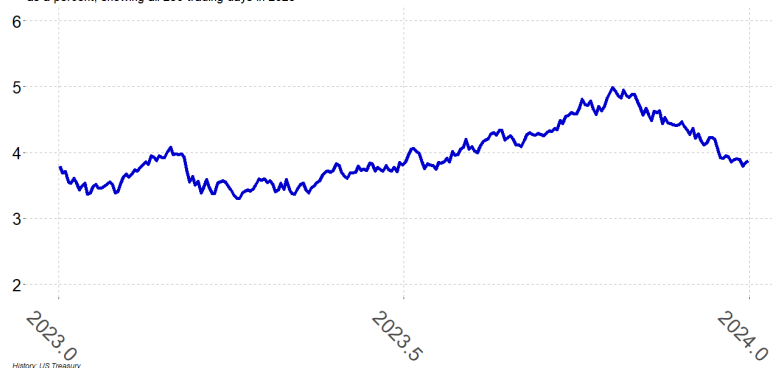
Finally, other factors look set to keep consumer spending in-line with those expectations, and one of the largest is the jobs market. We see that Moody’s has an expansion of the working labor-force, that the potential labor force participation and the actual expected labor force participation rates are closely aligned. This differs from most of the time from the great recession to the pandemic shutdown, when actual participation trailed potential participation until just the year before the pandemic. Some degree of caution then reigned until the close of 2022, when the gap began to narrow so as to disappear across 2023.



Monetary policy. Anticipation by the bond market has led to swift changes in the 10-year treasury yield this autumn, though the actual movement in the underlying short-term interest rate by the Federal Reserve has been nil during the autumn. The December meeting by the FOMC indicated rates are likely to end 2024 near 4.6 percent. They currently are within 5.25–5.5 percent.

10 year treasury yields

as a percent, showing all 250 trading days in 2023



Other central banks have indicated either that they would be pausing interest rate hikes (Canada), or suggesting that they would possibly consider interest rate cuts (ECB). In contrast, there has been news suggesting that the Bank of Japan would be stepping away from its targeting (though yield curve control) of long-term interest rates near zero.

Local. The Idaho Department of Environmental Quality issued grants to [nine](#) water systems across Idaho in order to deliver “engineering reports identifying the most cost-effective, environmentally sound method of upgrading a system to achieve and maintain compliance with state and federal standards.” DEQ also announced a \$20+ m construction [grant](#) to Cottonwood for construction work on its wastewater systems.

CWI received a \$4.2 million dollar [grant](#) from the Idaho Workforce Development Council. The grant is to assist in developing a pipeline of students for Micron’s new fabrication plant. There will be internship opportunities associated with this grant at Micron’s Boise facility.

Idaho Falls saw the construction of a aquifer recharge basin, with two more on the way, in addition to new pipeline for the Enterprize Canal Company to deliver irrigation water to thousands acres of farmland. These projects were partly funded through state grants. Other grants came through the Idaho Water Resources Board, including \$11 m going to [19](#) projects.

Meridian opened its eighth fire station, in the Ustick-McDermott-McMillian-Star square-mile block. The city also established a police precinct nearby, its first. Meridian is expected to see a Tesla car dealership open on Franklin Road. Chubbuck is going to get Google Fiber internet service. Health West opened a new pharmacy in Chubbuck and acquired other facilities from Bear Lake Community Health Centers. These include one in Montpelier. The non-profit health provider covers services including pediatrics, ob/gyn, as well as dental and behavioral health. Pocatello received a \$1 m grant for urban community forestry inventory work from the US Forest Service. This will also assist the city in understanding risks to its urban canopy.

Idaho Transportation Department is looking to replace [two bridges](#) to the east of Lewiston. These will be multi-year projects. Funding partly comes from the TECM (Transportation Enhancement and Congestion Mitigation) diversion from the sales tax revenue stream of the state.

In Franklin County, some open space currently used for ranching is being conserved, thanks to a conservation [easement](#). Such agreements, which are entered into voluntarily by the landowner, are helping preserve some of southeastern Idaho. Investigating the [map](#) gives an idea of the size of the various river basins, as well as the assortment of easements that the Sage Brush Land Trust has been able to establish in order to preserve some of that land. Funding for the recent easement was partly provided by PacificCorp. There are, of course, such conservation organizations in other corners of the state. Confer [Idaho Power](#).

Economic outlook

Labor market. While the table has a bit more than just labor market information for the US, the additional information is informative for the context of the outlook for nonfarm jobs in the US economy. Looking at the US nonfarm job growth trajectory, it is apparent that there is a

US growth rates	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
US nonfarm jobs	1.34	-5.79	2.9	4.34	2.33	0.88	0.39	0.36	0.33	0.35
US population	0.43	0.28	0.19	0.41	0.54	0.45	0.39	0.36	0.35	0.34
Total personal income	4.72	6.93	9.06	2.02	5.27	4.50	4.16	4.37	4.52	4.59
... inflation adjusted ...	3.24	5.79	4.69	-4.17	1.40	1.96	1.83	2.19	2.34	2.37
Wage & salary payments	4.78	1.50	8.96	7.79	6.24	5.17	4.27	3.99	3.96	3.99
... average US wage ...	3.39	7.74	5.88	3.31	3.82	4.26	3.86	3.62	3.62	3.63

slowing in jobs creation expected across the forecast horizon by Moody's. That slowing quickly lines up with the expected population trajectory. Partly this reflects a shift of the baby-boomer generation from typical working age to typical retirement age. It is the expectation that jobs and population will continue to expand through 2028.

When considering the wage and salary payments, recent history has seen average wages being less volatile than total payments,⁸ but the forecast has both being quite stable, and converging to the 3.5–4 percent growth per year.

Turning towards Idaho, the analogous data illustrates several features of a

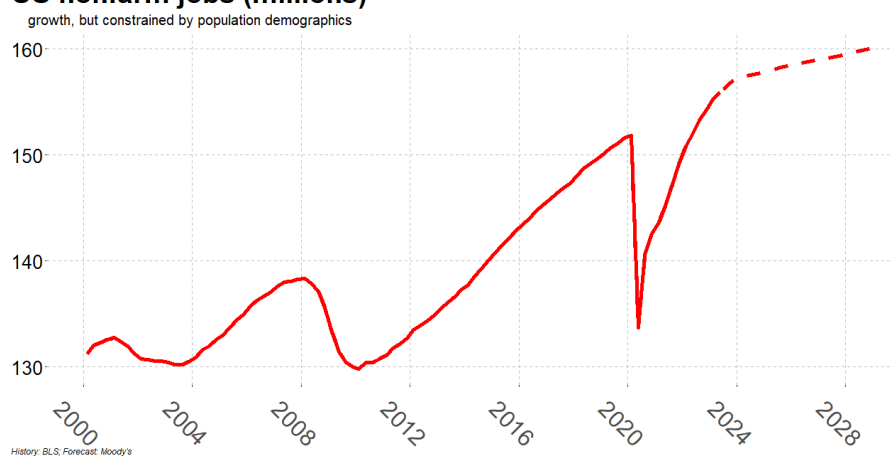
smaller economy benefiting from additional people moving to the state.

First, the downturn due to the onset of the pandemic is barely perceptible in the Idaho data, showing only a minor contraction in non-farm jobs in 2020. This reflects the average count of jobs across the year. In reality, Idaho had, by the fourth quarter of 2020, exceeded the number of jobs present in 2019.

Next, the population growth rates for Idaho have been significantly elevated compared to those of the nation, and that is expected to persist across the forecast. However, there is a significant slow-down in population growth for Idaho in the out years compared to the recently booming

⁸ The line labeled Wage & salary payments reflects total wage and salary payments whereas the line labeled ... average US wage ... reflects the per-job average wage growth.

US nonfarm jobs (millions)

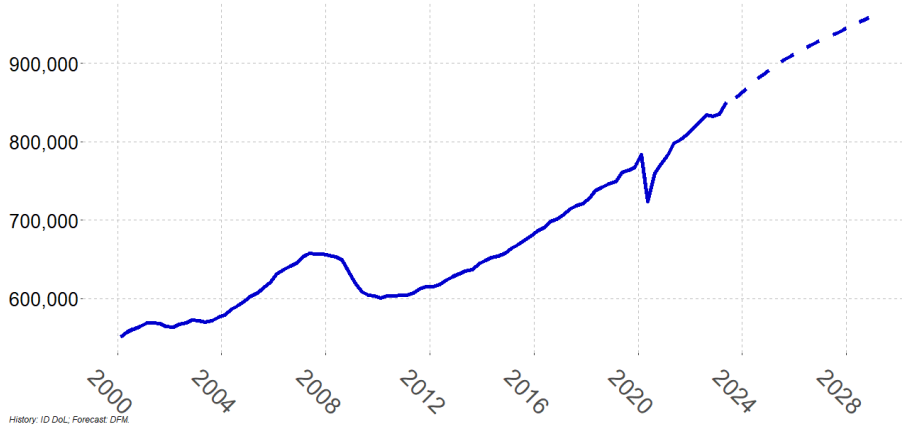


ID growth rates	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
ID nonfarm jobs	2.95	-0.06	5.02	3.71	1.86	4.08	2.77	2.11	1.73	1.68
ID population	2.11	3.36	2.98	1.82	2.57	1.00	1.49	1.17	0.92	0.83
Total personal income	8.48	10.68	12.22	6.46	4.67	6.86	5.78	5.87	5.57	6.00
... inflation adjusted ...	6.94	9.50	7.72	0.00	0.82	4.26	3.41	3.65	3.37	3.75
Wage & salary payments	5.79	7.51	12.23	9.98	7.79	7.54	6.50	5.78	5.73	5.85
... average ID wage ...	2.76	7.58	6.86	6.04	5.83	3.32	3.63	3.60	3.93	4.10

population expansion. Migration into the state is not expected to hit the highs recorded in 2021 and 2022 again in the near future. Job growth is expected to generally be above population growth; that occurred in 2019, 2021, and 2022. The first quarter of 2023 recorded little in terms of nonfarm job growth in the data we received, but the second quarter saw job gains making up for that pause. We expect a bit of an unusual pattern in 2023 and 2024 vis-a-vis the population growth, but the out-years trajectory is qualitatively similar to those three earlier years, albeit a bit less rapid of growth.

Turning towards income, the growth in personal income in 2022 was able to match inflation, in contrast with the national outcome. Generally, total personal income growth in the state has been significantly above the national counterpart, and the expectation is for a differential in that same direction to persist. Adjusted for inflation, growth is expected to result in real personal income expansion near 3.5 percent on average.

Idaho nonfarm jobs
growth sustained by population expansion



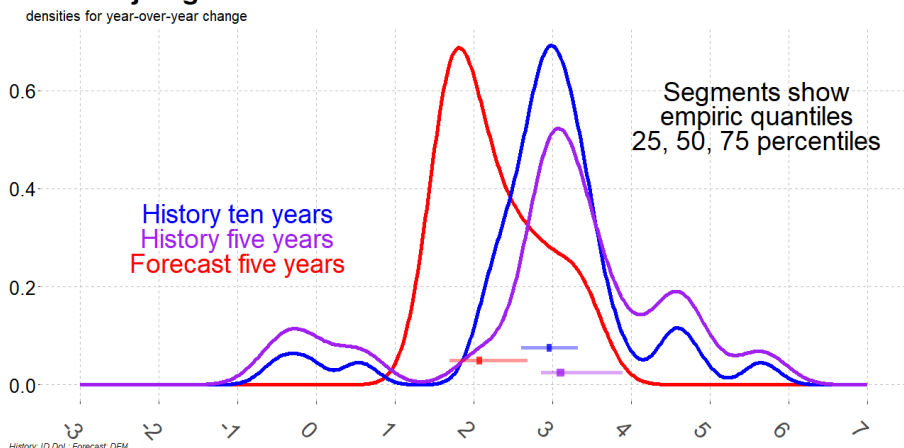
To complete the discussion of the table, looking at the wage growth, there is greater space between average wage growth in Idaho’s future and total wage payment growth. This reflects stronger job growth, by which we mean, greater expansion in the count of the number of nonfarm jobs.

Our final look at overall nonfarm jobs is through the historical and expected jobs growth densities. Here we are considering year-over-year growth measured four times a year.⁹ In the past five years, this somewhat smooths out the abrupt changes due to the pandemic shutdown; that is particularly so for the Idaho economy which bounced back very quickly. Still, the left shoulder of the purple and blue distribution curves do reflect those few quarters of tumult. The

⁹So, for example, we compare 2022Q3 with 2021Q3 and express that as a growth percentage.

expected distribution of growth going forward, the red curve, is centered just slightly left of the blue curve, and a fair bit left of the purple curve. The recovery from the pandemic shutdown in Idaho has produced a string of very strong growth in Idaho nonfarm jobs and this is reflected in the shift of the last five years towards growth approaching 4 percent.

Nonfarm job growth in Idaho

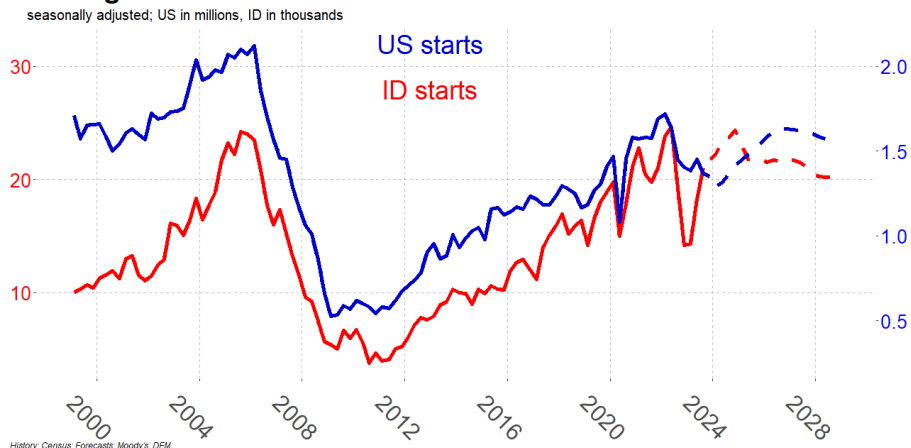


This graph also shows the empirical percentiles for the data and the forecast. The 50th percentile is the median, meaning half of the observations are below, and half of the observations are above. The 75th percentile means that three-quarters of the observations are below, and one-quarter of the observations are above. Thus the

short blue segment extending from about 2.5 to about 3.4 indicates that only a quarter of the time has growth registered below 2.5 percent and only a quarter of the time has growth been above 3.4 percent; in both cases we are discussion the past ten years of data, so 40 quarterly observations. In terms of the analogous red segment, we expect typical growth to be just about 2.1 percent (the middle of the segment), but we expect about half of the observed growth rates to fall between 1.7 and 2.7 across the five-year forecast horizon (the edges of the red segment).

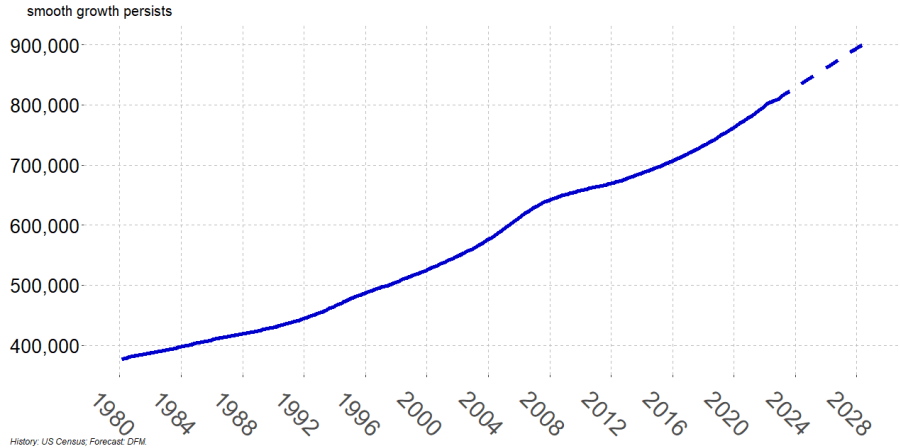
Housing starts, construction, and retail. The outlook for housing starts is a bit muted, largely reflecting higher interest rates and the demographics of the US population, both of which also impact Idaho. Idaho benefits from domestic migration to supplement its natural population change. The US is only able to supplement its

Housing starts



natural population change through international immigration, a much more involved process than domestic migration. It seems that demand for housing in Idaho is already visibly countering the slowdown from higher interest rates, which is affecting both the local housing market and the broader US housing market.

Idaho housing stock

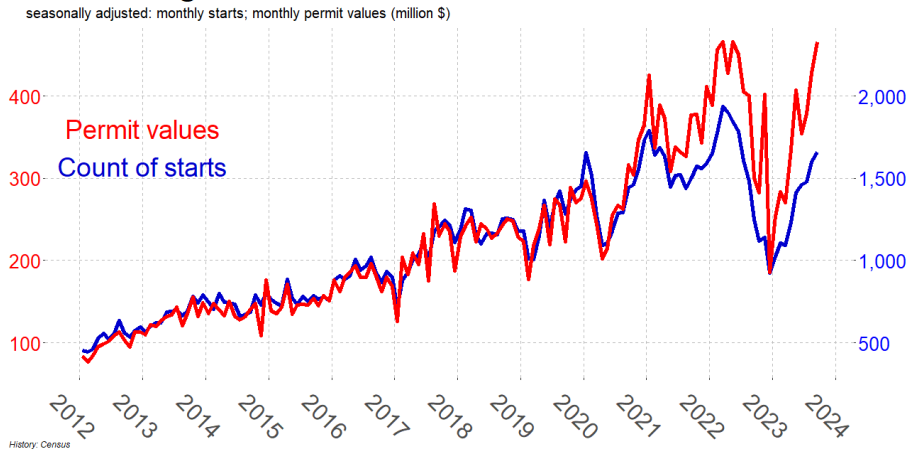


Housing starts receive a lot of attention. They do eventually translate into housing stock, and it is in units within that stock which families reside. Thus the behavior of that housing stock is ultimately of interest. The trajectory of Idaho’s housing stock is quite steady, and is expected to remain so across the forecast horizon. Our

variable for predicting housing stock are simple: prior values of the housing stock and the expected house starts. This produces quite a smooth outlook for the housing stock, even if the outlook for housing starts is quite variable. An easy aid in interpreting this is that not all house starts take identical amounts of time to reach completion. This variability helps to smooth the input from starts, which can move a bit erratically depending upon weather, material availability, and building lot availability, into stock.

Housing starts have been a part of the Idaho economic model for some time. They aid in predicting employment in the construction sector, and they are useful for predicting sales tax revenue. Due to the latter feature, we have investigated another data series collected by the US Census Bureau. That agency provides our hous-

Idaho housing

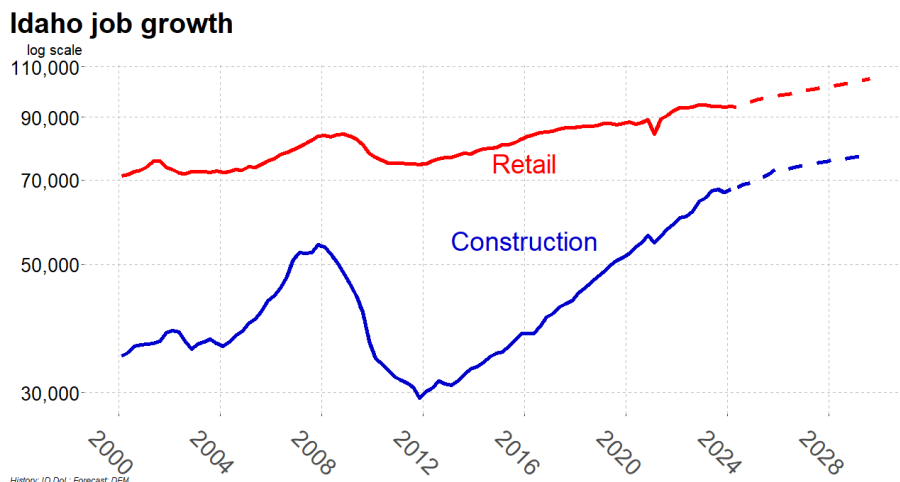


ing permits data through its Building Permits and Construction sub-program. That group also provides the total permit values at the monthly frequency associated with the total permit counts. While highly correlated with the permit counts, the housing permit values may have additional predictive power for sales tax revenues, and for this reason we have collected some of this data. The variability of those monthly values is quite apparent, even after applying the seasonal adjustment procedures to the underlying data.

The recent rise in interest rates did seem to have a quick reflection in the value of permits issued, meaning fewer projects or much less ambitious projects were in the works recently.

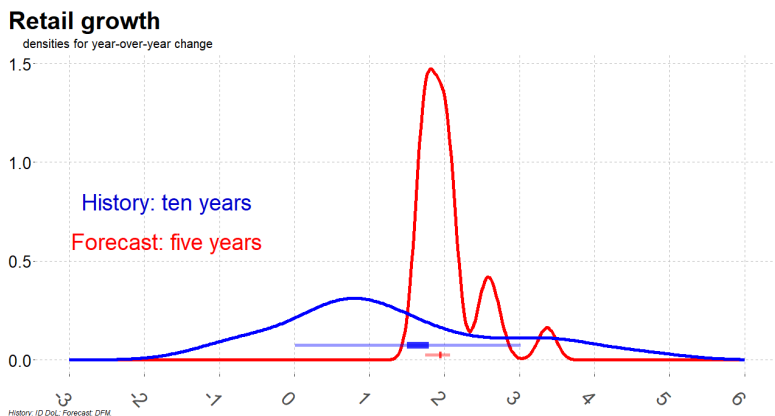
However, there has been a rapid resumption towards the trend in permit values. This appears to be a local manifestation of the common observation that few existing homes are being put up for sale, which has bolstered the new housing market even in the face of steeper interest rates than have been common for most of the 2000s.

We provide in a graph a longer history for construction and retail employment in Idaho. Partly this illustrates how distinct the past three recessions have been. The dot-com recession resulted in construction jobs waffling in the 36–40 thousand range for four years. Retail employment in the state was essentially flat across the



years 2000 to 2004. The great recession saw construction jobs plummet, and retail also lost a lot of jobs, returning during 2010–2011 to levels below the dot-com peak a decade prior. Contrast those with the pandemic shutdown recession. Two to three quarters of data after the short 2020 official recession, the trajectories of both retail jobs and construction jobs in Idaho were nearly indistinguishable from what had been the prior trend.

Another point to make with the longer history is that construction jobs increased by about 1/3 across 2011 to 2016. That was only a partial recovery of job losses in the great recession. The expectation in this forecast is that construction will add 1/3 to its count of jobs across 2021–2028. A bit longer than the prior recovery, but as visible, this period had much less to recover from in terms of jobs count in Idaho.

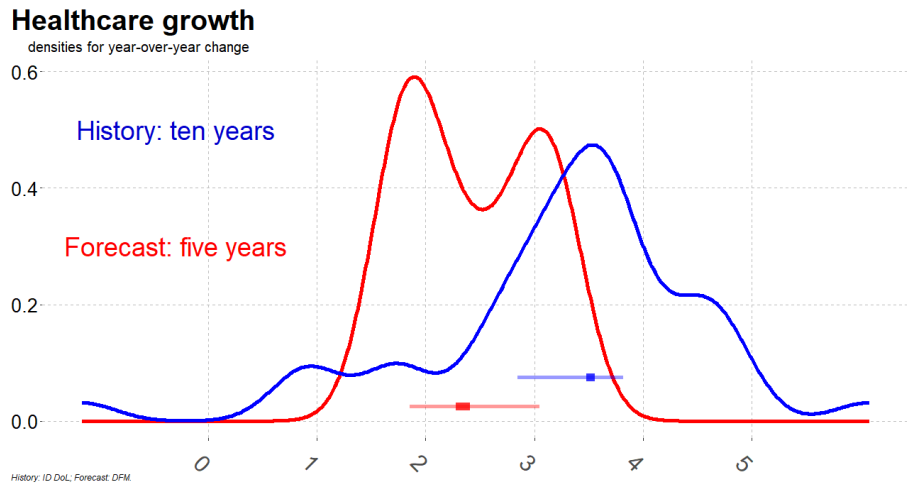


Finally, for both construction and retail trade, which are intertwined in the Idaho economic model, growth is expected going forward, but the expectations are not for aggressive growth. For retail, this is perhaps best seen via the distribution graph. For construction, it is visible in the trajectory across the forecast versus the recent history.

The outlook for retail trade in Idaho’s economy is highly centered on growth just a smidgen above the typical growth rate seen the past ten years. History has

shown that the sector can see contractions; those, however, are not foreseen within the outlook. The primary drivers of retail within the economic model are personal income and population. Both of these are expected to show steady expansion, so it is unsurprising that the outlook for the retail sector's employment is for expansion as well. Looking at the trajectory displayed in conjunction with that of the construction industry, though, it is apparent that growth in the retail sector is not expected to be over-the-top.

Healthcare. The outlook for healthcare in Idaho is for continued growth. Largely this reflects continued population growth in Idaho. The Idaho population is also aging, with a growing cohort reaching retirement ages. This places more people on Medicare coverage. It also places more people into the portion of their lives when,



aside from relevant births, the majority of their healthcare use will occur. This is true both of routine check-ups as well as major interventions. For this reason, there is little to suggest that Idaho's healthcare jobs count demand will not be pulled along by its general population growth. On the supply side, we expect that Launch will aid in bringing in additional workers to the healthcare sector, but we also expect that highly skilled healthcare positions will remain among the most difficult to fill job openings. Partly this reflects the long training periods needed for advanced medical expertise.

Forecast analysis

Forecast comparison.

International changes. There has been further destruction in the Russian/Ukraine war as well as the Hamas/Israel war. Argentina elected an unusual politician, self-described as an anarcho-capitalists, as its next president. Liberia demonstrated a successful [transition](#) of power, which has been somewhat rare among recent political developments in Africa.

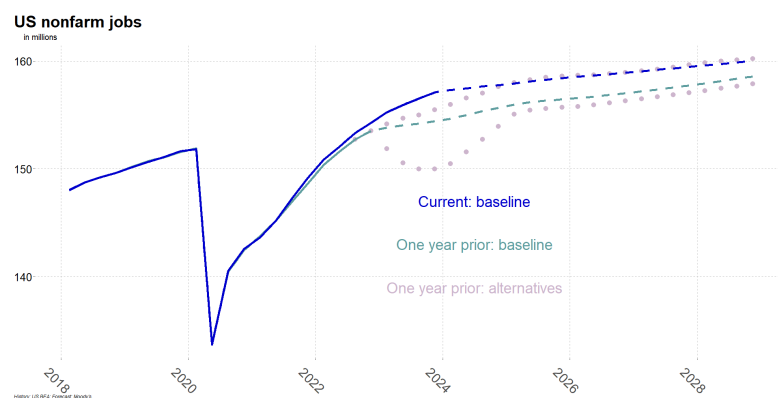
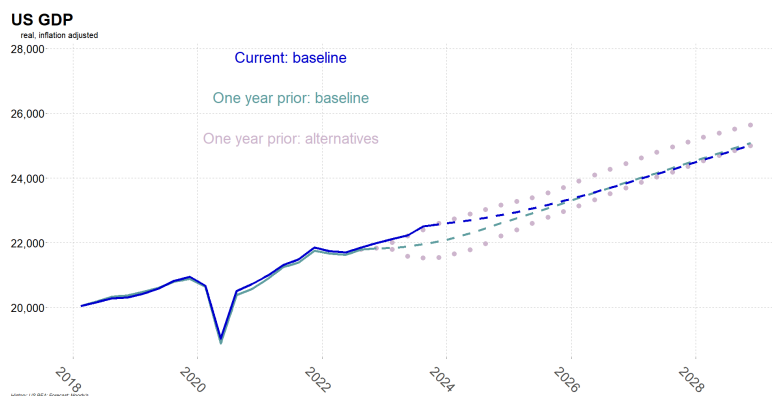
North Korea launched a spy [satellite](#) and South Korea responded quickly with its own [launch](#).

Europe is entering its second winter without Russian natural gas supplies it previously relied upon. The 2022 winter was navigated partly with the aid of a mild winter season. China continues to battle difficulties in its real-estate sector. The economic prospects of local government within China are dependent upon revenue coming from land sales, and the downturn in real-estate activity has caused difficulties for them.

US forecast comparison. In 2023 the

US BEA re-indexed inflation adjustment from the 2012 level to the 2017 level. In the accompanying graph, the first quarter of 2018 values are made to line up; this re-scales that value in the prior Moody's forecast to agree with the current, inflation adjusted GDP for the US then. Note that the forecast periods differ by one year. The baseline outlook from

Moody's 2023 December US forecast maintains much of the same target, indeed much of the same trajectory across 2026–2028, as was seen in the Moody's 2022 December US forecast. However, the near-term has been significantly raised. This reflects the higher readings which have been observed by the BEA this past calendar year.

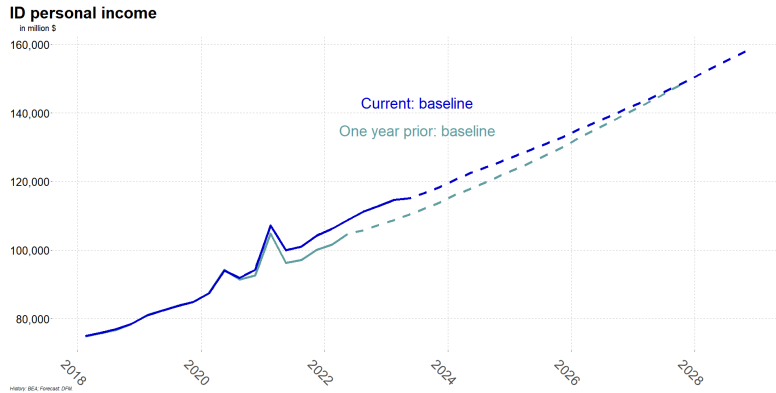
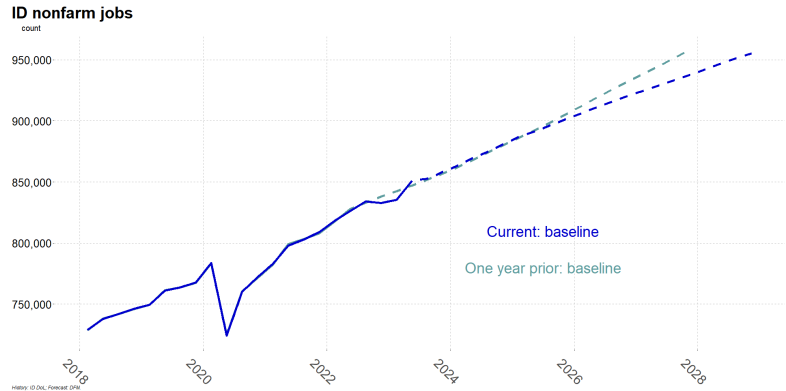


sioned by Moody's just over 12 months earlier.

Overall, this indicates that the economic prospects for the US remain largely intact.

While the real GDP outlook remained stable a few years into the future, the path for nonfarm jobs shows a step upwards when comparing with the prior December forecast. Indeed, now the baseline case for nonfarm jobs in the US is much closer to an optimistic scenario envi-

ID forecast comparison. We present two graphs indicating both stability in the forecast, as well as a significant revision upwards, the latter largely due to the BEA. Our comparisons are between this publication and the one a year ago. First, for jobs, the outlook is largely similar through 2026, but thereafter we have a revision downwards in nonfarm jobs expected. The trajectory still represents growth, but the rate of accumulation slows.



For personal income, Idaho received a substantial revision upwards by the BEA across the most recent years. The revision is concentrated in the subcategory of personal income called “dividends, interest, and rent”. This represents a source of personal income derived from wealth. That revision stepped up our forecast for personal income in the state through 2026. However,

the lower job growth after 2026 does then pull the current personal income forecast to be nearly in-line with the prior year’s forecast for personal income by 2027.

Comparing with the October forecast, the current forecast for personal income ends up being measurably less in 2028, as can be seen in the accompanying table. Job growth slows by 2026 compared to what was expected three months ago. Though the accompanying table indicates a revision upwards on population, it is likely that a future publication will show another revision downwards on that, probably more inline with the October forecast than the current forecast.

Current forecast		2023	2024	2025	2026	2027	2028
Personal income	\$ m	114,900	122,776	129,867	137,495	145,156	153,868
Wages	\$ m	51,170	55,026	58,604	61,994	65,546	69,379
Population	ct	1,988,810	2,008,714	2,038,713	2,062,648	2,081,655	2,098,946
Nonfarm	jobs	843,117	877,558	901,856	920,909	936,845	952,591
October forecast		2023	2024	2025	2026	2027	2028
Personal income	\$ m	116,117	123,436	131,626	140,982	150,957	161,954
Wages	\$ m	51,377	55,873	60,432	65,199	70,234	75,673
Population	ct	1,966,398	1,996,663	2,026,390	2,051,878	2,073,376	2,093,516
Nonfarm	jobs	851,065	878,787	904,572	930,874	957,266	984,377

Baseline is always the median forecast for Moody's. The firm also provides an upside 4 percentile and an upside 10 percentile, as well as a downside 75 percentile, downside 90 percentile, and downside 96 percentile.

Alternative forecasts. Moody's alternatives typically rely upon recessions or persistent slower growth for the downsides. Often this revolves around lower consumer confidence and spending. These often entail altered monetary policy through the federal funds rate; typically it is lowered quickly to fight the downturn. In the more upbeat scenarios, the reverse may occur. In the present setting, this means that monetary policy stays tight for longer, meaning that the Federal Reserve does not lower the federal funds rate as quickly as in the baseline case.

The monetary policy implications are far reaching within the economic model, but one ready illustration of their reach is through housing prices. Under the baseline, median existing housing prices are expected to stay between \$385 thousand and \$400 thousand during 2023–2027, with the 2023 level at \$393 thousand.

For the downside scenarios, these behave differently. For the downside case of the 75th percentile, the range is down to just below \$375 thousand in 2025 with recovery only to \$383 thousand by 2027. In the downside 90th percentile case, the 2025 level reaches below \$350 thousand and only recovers to \$360 thousand by 2027. In the downside 96th percentile case, the 2025 level is below \$320 thousand and the 2027 level is below \$330 thousand. Thus even with lower interest rates, other factors within the downside scenarios hamper house prices at the national level. Job growth is worse and, as mentioned, consumer confidence is as well.

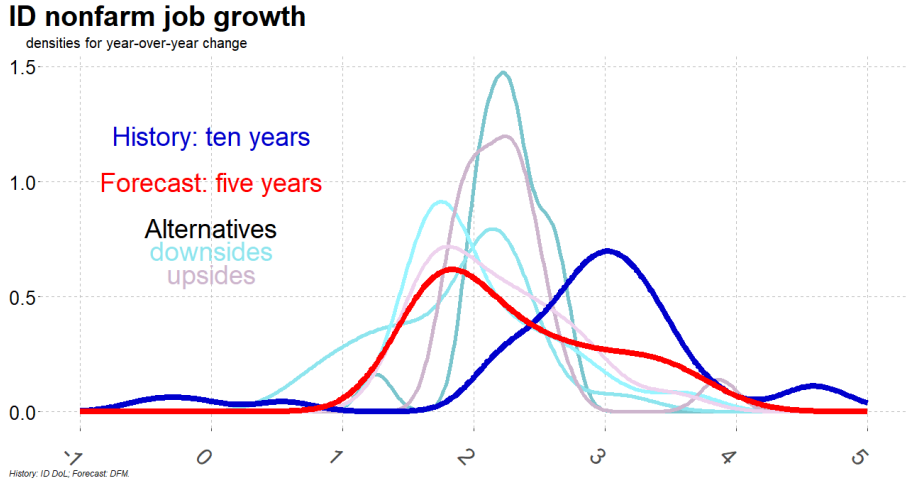
For the upsides, in the upside 10th percentile case, median existing house prices appreciate across 2023–2027, reaching above \$430 thousand in 2027. For the upside 4th percentile case, they reach above \$455 thousand.

Note, recent evidenced has indicated that higher mortgage rates are translating into few existing homes entering the market, and more new construction consequently been undertaken to meet demand. There is an expectation that lower interest rates may allow more existing homes to be put on the market,¹⁰ so there may be some aspect of a supply undercurrent to the housing price outlooks just described in addition to the demand side expected due to differing jobs outlooks.

Idaho trajectories. Historically, across the past ten years, nonfarm job growth has typically been 2.95 percent year over year; that is the median measure illustrated by the blue density curve. The main, baseline forecast for Idaho nonfarm jobs growth is represented by the red density. There the median measure is 2.13 percent year over year growth. Other alternatives are presented as well.

¹⁰ because those homeowners may be less adverse to financing another purchase with lower existing interest rates

The downside scenarios have median growth rates at 1.87 percent in the most severe case, nearly identical growth to the baseline at 2.14 percent in the downside 90 percentile case, and even faster growth in the downside 75 percentile case. Then growth is typically expected to be 2.26 percent. These perhaps un-



usual growth rates reflect that the downside scenarios see interest rates fall to combat US recessions. Note: median measures are hardly susceptible to one or two extreme measurements. Thus the quarters in which the US would fall into recession within these alternatives may not move the Idaho median job growth because those quarters are below median, and median means only that half the measures are below, half the measures are above.

The upside scenarios have growth rates of 2.21 in the 10 percentile case and 2.11 in the upside 4 percentile case. Note that these are quite tight, at least as measured by the median year-over-year growth rates, with the baseline scenario. That indicates that Idaho’s job growth is expected to be near potential within the baseline. However, the distributions do show different shapes, indicating how those medians arrive will differ — this means that the individual trajectories involve different sequences of growth rates even if their median growth rates are quite similar.

The perhaps counter-intuitive nature of the jobs in the downside scenarios as measured by medians is corroborated by the housing outlook. The following table illustrates the baseline scenario for the Idaho economy in comparison to the upside 4 percentile scenario and the downside 90 percentile. Summary statistics are presented in the table. Two years of history are given,

Idaho		2021	2022	2023	2024	2025	2026	2027	2028
Nonfarm jobs	baseline	759,969	798,135	827,756	843,117	877,558	901,856	920,909	936,845
	optimistic	759,969	798,135	827,756	849,437	874,030	896,245	914,902	930,195
	pessimistic	759,969	798,135	827,756	849,437	863,259	874,089	891,784	911,033
Wages, m \$	baseline	38,459	43,163	47,470	51,170	55,026	58,604	61,994	65,546
	optimistic	38,459	43,163	47,470	51,170	55,381	59,499	63,112	66,740
	pessimistic	38,459	43,163	47,470	51,170	53,687	55,791	58,916	62,631
Housing starts	baseline	18,440	20,997	20,466	18,829	23,448	22,121	21,629	21,234
	optimistic	18,440	20,997	20,466	18,829	23,387	21,667	20,999	20,572
	pessimistic	18,440	20,997	20,466	18,829	24,290	24,396	22,838	22,449

along with the forecast years (2023–2028). All three alternatives agree across history, but they diverge beginning in 2023. While Idaho’s economy was quite dynamic in 2020–2022, the change

across 2021–2022 visible in this table does provide some context for the changes envisioned in these two Moody’s scenarios.

We have provided the same output for both the d90 and d75 scenarios and the u10 and u4 scenario as we provide for the baseline scenario. These data are available in xlsx via the link provided in the introduction to this report. The names are similar, followed by an appropriate suffix such as _u10 or _d75.

Appendix

US Macroeconomic Model by Moody's Analytics

Moody's model is a structural model based upon the IS-LM demand model and the Phillips curve for supply. It has about 2,300 variables forecast in their macroeconomic model, with more than 9 in 10 determined within the model (i.e., endogenously, rather than exogenously, or external to the model.) The firm also characterizes the model as a Keynesian model, with short-term fluctuations largely driven by demand. The firm indicates that substantial shocks can take up to two years to unwind back to an equilibrium path.

There are some particular variables which are central in the model. Moody's says:

The federal funds rate's effect in the model is systemic. It affects the yield curve, which is critical to consumer spending and business investment. Therefore, it affects real GDP growth, the labor market, and inflation.

To illustrate why shocks may take time to dissipate in the model, Moody's also indicates:

Monetary policy operates with a lag in the model. Eventually the model's inflation and unemployment rate forecasts return to equilibrium, and the federal funds rate follows.

Monetary policy includes setting and adjusting the federal funds rate, but it also includes other tools that the Federal Reserve has. A recent example of this has been both Quantitative Easing (during the acute phase of the pandemic), and its opposite, Quantitative Tightening (during 2022–present).

Moody's organizes its model into blocks: These include

- (1) Consumption through consumer spending
- (2) Investment
- (3) International trade¹¹
- (4) Fiscal policy
- (5) Supply (labor force potential, for example)
- (6) Inflation
- (7) Monetary policy and its transmittal
- (8) Personal Income
- (9) Corporate income
- (10) Labor markets (actual employment by sector)
- (11) Housing

Moody's provides a detailed look at parts of each of these blocks in their model. Doing so takes the firm 25+ pages. To not extend the length of this publication, we will take only a couple of these for further discussion. The few we do are quite parallel to the Idaho economic model.

Moody's indicates that their model is anything but static, much as the US economy.

¹¹ Moody's emphasizes trade in their model.

Rarely does a month go by when no changes are made to the model. Equations that are no longer performing well are re-specified, and variables are occasionally added to the model as more data become available or the dynamics of the economy change.

Their wording here also applies to the Idaho economic model.

5 Supply means the long-term economic potential of the US. It is governed by innate parts of the economy, including population forecasts. As we have learned, it is difficult to find labor without having a population of workers appropriate for the labor, in location, age, skill, and desire to work. Moody's says;

Labor force supply is a key determinant of potential GDP, which largely depends on demographics. Population is estimated based on Census Bureau birth and death rates and immigration rates that are determined by the economic performance of the U.S. relative to the rest of the world.

Here we see a couple of potential exogenous variables in the Moody's model, namely the data coming from Census Bureau estimates. We also see that each block can and does interact with other blocks in the Moody's model: here international trade interacts with the population portion of the supply block though the strength of the immigration draw that the US economy represent, or will represent in the future.

Another input in the potential labor force is an estimate of what is called the Non-Accelerating Inflation Rate of Unemployment (NAIRU). This concept is a Phillips curve one: if unemployment rates are too low, inflation is expected to not only be present, but to increase in rate. Such a situation is one that the Federal Reserve works to prevent. One of its two charges by Congress is stable prices; that is, the Fed must not allow accelerating inflation to persist. Thus the NAIRU is important for understanding potential labor force; it is not as simple as computing the 16–64 year-olds in the US. NAIRU is another example of an exogenous variable. In this case:

We use the [Congressional Budget Office] CBO's long-term NAIRU forecast and make that variable exogenous in our model. We then specify an error correction model to predict the value of short-term NAIRU.

This also indicates that parts of Moody's model may have equations of varying types. We have already seen that Moody's employs demographic models to estimate population. These are different from the Ordinary Least Squares (OLS) equations, which dominate the Labor block 10 of Moody's model.

8 The Personal Income block is illustrative of the pervasiveness of Bureau of Economic Analysis data organization across almost all economic forecasts. Principal parts are wage and salaries, supplements to wages and salaries (that is the BEA name; largely this is benefits such as health insurance), dividends, interest, and rent (modeled separately), and proprietors' income.

Individual wage and salary categories are modeled as functions of industry employment, industry average hourly earnings, and a broad measure of hours worked.

The personal income block certainly interacts with the labor market block 10. Another interaction is present with the Inflation block 6. While industry average hourly earnings are used for each industry, behind the scenes is average hourly earnings in all private industries. Forecasting that broad measure is “the most important wage equation in the macroeconomic model,” though Moody’s makes this statement within their discussion of the Employment Cost Index, in order to understand CPI inflation.

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.

These have historically been estimated at the quarterly frequency as that is the frequency of data provided by IHS Markit (our prior provider of the US forecast) as well as Moody's (our current provider of the US forecast). Some of the source data is available at the monthly frequency. Examples of this include personal income for the US (source: BEA), inflation as measured by the Consumer Price Index (CPI inflation, source: BLS), and local employment (source: Idaho Department of Labor — available in quarterly batches of monthly measurement). We are now running parallel models at both the quarterly frequency level and at the monthly frequency level. Where source data is available at the monthly level, it is used; the quarterly values recorded by the US forecast provider have always been the average values for the corresponding months. Where source data is not available at the monthly level, a smooth interpolation of the quarterly data down to monthly values is used.

The primary exogenous variables are obtained from the national forecast provider (now Moody's). Endogenous variables are forecast at the state level.

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

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

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

The farm proprietor sector is estimated using a sub-model¹² 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 North American Industry Classification System employment categories (NAICS). 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.

¹² As the exogenous variables for the farm model are only available at the annual frequency, the farm model is now computed at that frequency, and quarterly or monthly values are interpolated from these. The source for the exogenous regressors in the farm model is the FAPRI institute of the University of Missouri, Columbia.

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 (previously) or Moody's US macroeconomic models.

Since the output of the IEM depends in large part upon the output of the US model, an understanding of the US model, its input assumptions, and its output is useful in evaluating the results of the IEM's forecast. The assumptions and output of the US model are discussed in the National Forecast section, and a discussion of the details of the IEM build and of the Moody's/IHS transition follows.

b. Idaho Time Series Model

The Idaho Time Series Model (ITS) is a new numeric model of Idaho’s economic activity. The model consists of sequential equations solved in modules with dependencies such that downstream modules can rely on data forecasted in earlier modules. The regression equations are estimated using time series forecasting techniques covered by the R ‘seasonal’ package. The package uses the X-13 ARIMA-SEATS method to understand the typical monthly or quarterly trend from data before creating a forecast. The method is a joint development by the US Census Bureau, Stats Canada, and the Bank of Spain. ARIMA models are time-series models, which means they look to prior measurements of a variable in order to understand subsequent measurements of that *same* variable.¹³

The guiding principal of the time series model is to let the data speak for itself and involve exogenous regressors sparingly. Several equations in the model, such as the adult share of the population, are computed exclusively as ARIMAs with no exogenous regressors. Fewer than five equations in the model use more than two exogenous regressors. Time series models tend to produce accurate forecasts, but without the linkages of multiple regression models like the IEM. For time series forecasts it can be difficult to explain why a forecast is evolving in a particular way.

The first module estimates monthly values for Idaho births, deaths, and net migration and combines these to get a measure for monthly change in population. This contrasts with the IEM which treats migration as a residual. The only exogenous regressors used in this portion of the ITS model are mortgage rates, the US unemployment rate, a dummy for COVID-19, and Idaho housing completions, which are provided by Moody’s.

The population estimate feeds into the second module, which then estimates values for the monthly adult population, labor force, and employed persons before estimating monthly levels of employment across the standard employment sectors into which the BEA divides the US economy. To do so, this second module begins by using the population number to create forecasts of the total number of adults, the size of the labor force, and then the number of employed persons.¹⁴ These forecasts rely on Local Area Unemployment Statistics (LAUS, a BLS program) numbers.

Once the labor force is understood, the second module continues by using separate regressions for each major NAICS sector, this time using data from the quarterly Current Employment and Wages (QCEW, another BLS program). An “other” category trues these values up to the total

¹³ An example may be illustrative: an ARIMA forecast of housing would look at prior housing permit activity to predict future housing permit activity; a general regression analysis might look towards population trends to predict future housing permit activity. Both can have merits, and a combination of the methods is often used, though one or the other may be the dominant driver in any particular equation analysis, say the equation analysis of housing permits. The population trends in the second approach are an example of an exogenous regressor for housing starts — they are variables which can be supplied externally from the internal computations of the housing permit equation.

¹⁴ Once the employed number and the labor force number are known, the unemployment rate is easily found: the difference between these gives the unemployed count, and dividing by the labor force number gives the unemployment rate.

number of employed (since LAUS and QCEW use different definitions). This portion of the second module, focusing on employment categories, uses mortgage rates, the US unemployment rate, the US labor force participation rate, the federal funds rate, and CPI as exogenous regressors. However, each individual regression relies at most on two of these exogenous regressors.

The third model estimates wage rates and wagebills for each of the NAICS categories. The IEM and ITS dis-aggregate labor markets in a similar manner, although the ITS has a finer breakdown. One example is the commonly grouped categories such as 22, 48, and 49 (utilities, and transportation sectors), which the ITS keeps fully separate. The principal data for employment and wages come from the Quarterly Census of Employment and Wages (QCEW). The total QCEW wagebill is the ultimate target, as it is a vital exogenous regressor used in the subsequent personal income and GDP modules.

To get to that total QCEW wagebill, separate wagebills for each NAICS category are computed. These wagebills come about as the product of wage rates and employment numbers. Wage rates are estimated via time-series regression for each NAICS category using the unemployment rate in Idaho and the corresponding national wagherates for each NAICS sector.

The first modules all run on monthly data. If exogenous data come from Moody's on a quarterly basis, the ITS first smooths these data to monthly values and then performs the forecast. The personal income and GDP modules rely on quarterly data. When data is imported from earlier modules in the ITS, these data are monthly, so both the personal income and the GDP modules average the monthly data to obtain quarterly data, and these two modules are run. Currently the GDP module is only for state-level real GDP and only uses the total wagebill as an exogenous regressor. The personal income module forecasts many components of personal income and uses the total wagebill in addition to some of the previously described exogenous regressors.

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 2017 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
ELHS	Employment in leisure and hospitality
EMD321	Employment in wood products
EMN311	Employment in food manufacturing
EMN323	Employment in printing and related support activities
ENRM21	Employment in mining
EPBS56	Employment–Administrative, Support, Waste Management, Remediation, millions
EXPUS\$	Non-agricultural production expenses
GDPR	Real gross domestic product, billions of chained 2017 dollars, annual rate
GF	Federal purchases of goods and services
GFGIIPRDR	Real federal investment in research and development, billions of chained 2017 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, 2017 = 100
IPSG311	Industrial production index, food, 2017 = 100
IPSG321	Industrial production index, wood products, 2017 = 100
IPSG322	Industrial production index, paper, 2017 = 100
IPSG323	Industrial production index, printing, 2017 = 100
IPSG3253	Industrial production index, agricultural chemicals, 2017 = 100
IPSG332	Industrial production index, fabricated metal products, 2017 = 100

IPSG3332	Industrial production index, industrial machinery, 2017=100
IPSG334	Industrial production index, computer & electronic products, 2017=100
IPSG3342	Industrial production communications equipment, 2017=100
IPSG335	Industrial production index, electrical equipment, appliances, and components, 2017=100
IPSG339	Industrial production index, miscellaneous manufacturers, 2017=100
IPSG51111	Industrial production index, newspaper publishing, 2017=100
IPSN32732T9	Industrial production index, concrete and cement products, 2017=100
JECIWSP	Employment cost index—private sector wages and salaries, December 2017=100
JEXCHBROAD	Broad U.S. trade-wtd. value of the dollar, index, 2017=100
JEXCHMTPREAL	Real US trade-weighted exchange rate with major currency trading partners, 2017=100
JEXCHOITPREAL	Real US trade-weighted exchange rate with other important trading partners, 2012=100
JPC	Implicit price deflator, personal consumption, 2017=100, chain weighted
N	Population, US
N16A	Population, US, aged 16 and older
RMFF	Effective rate on federal funds
RMMTG30CON	Commitment rate on conventional 30-year mortgage
RUC	Civilian unemployment rate, percent
TRF\$US	Government payments to US farms
TXSIDOM	Domestic social security tax receipts
WPI01	Producer price index, farm products, 1982 = 1.0
WPI02	Producer price index, processed foods and feeds, 1982 = 1.0
WPI08	Producer price index, lumber and wood products, 1982 = 1.0
WPI10	Producer price index, metals and metal products, 1982 = 1.0
YP	Personal income
YPAINT	Personal interest income
YPCOMPSUPPAI	Other labor income, US
YPCOMPWSD	Wage and salary disbursements

YPPROPADJF	Farm proprietors' income (with inventory valuation and capital consumption adjustments)
YPPROPADJNF	Nonfarm proprietors' income (with inventory valuation and capital consumption adjustments)
YPRENTADJ	Rental income of persons with capital consumption adjustment
YPTRFGF	Federal transfer payments to individuals
YPTRFGSL	State and local transfer payments to individuals
ZADIV	Dividend payments, billions of dollars, annual rate

Endogenous Variables:

EEA_ID	Employment on nonagricultural payrolls, total
EEA_ID_2100	Employment in mining
EEA_ID_2300	Employment in construction
EEA_ID_3110	Employment in food processing
EEA_ID_3230	Employment in printing
EEA_ID_3250	Employment in chemicals
EEA_ID_3320	Employment in fabricated metal products
EEA_ID_3330	Employment in machinery
EEA_ID_3340	Employment in computers and electronic products
EEA_ID_4200	Employment in wholesale trade
EEA_ID_44_45	Employment in retail trade
EEA_ID_48_49_22	Employment transportation, warehousing, and utilities
EEA_ID_5100	Employment in information
EEA_ID_52	Employment in finance and insurance
EEA_ID_53	Employment in real estate and leasing
EEA_ID_54_55	Employment in professional, scientific, technical, and management
EEA_ID_56	Employment in Administrative and Support and Waste Management
EEA_ID_61_81	Employment in private education and other services
EEA_ID_62	Employment in health care and social assistance
EEA_ID_71_72	Employment in leisure and hospitality
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
ID_HOUSE_SF	Idaho housing stock
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, 2017 dollars
ID0YP\$	Total personal income
ID0YP\$PC	Per capita personal income
ID0YPNF	Nonfarm personal income, 2017 dollars
ID0YPNF\$	Nonfarm personal income
ID0YPNFPC	Per capita nonfarm income, 2017 dollars
ID0YPPC	Real per capita personal income, 2017 dollars
ID0YPRF\$	Net farm proprietors' income
ID0YPRNF\$	Nonfarm proprietors' income
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