Idaho Economic Forecast

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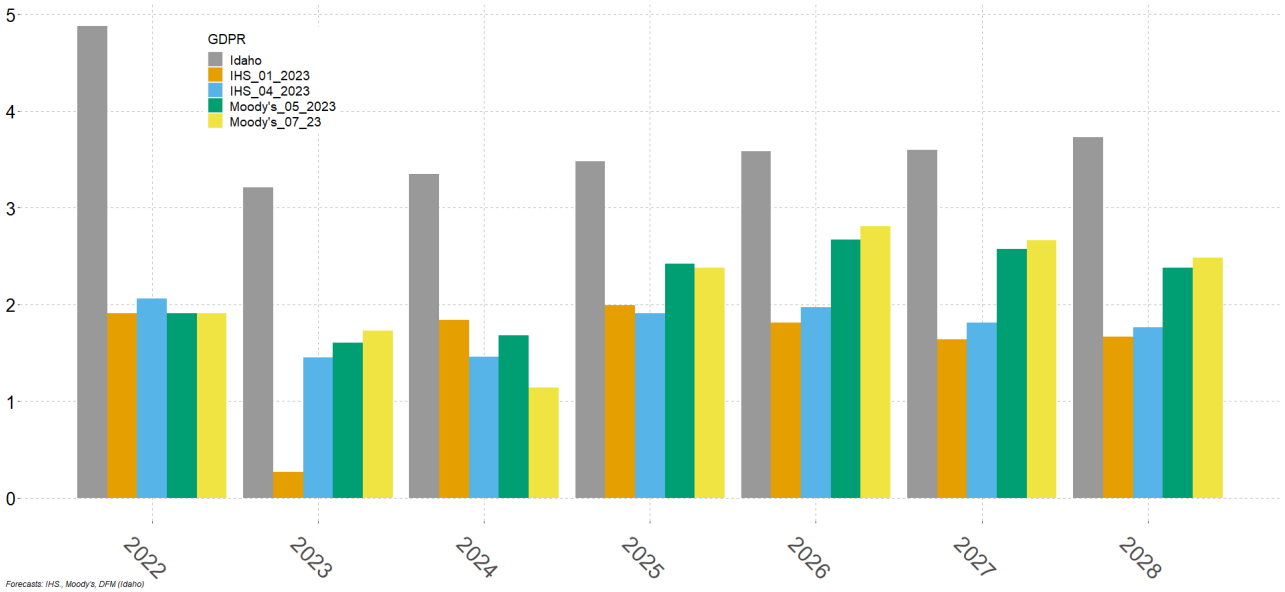
- **Forecast begins the first quarter of 2023**
- **Alternative forecasts**

Real GDP growth projections



Idaho Economic Forecast 2023–2028

State of Idaho
BRAD LITTLE
Governor

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Contents

Introduction

This document summarizes Idaho's economic forecast for 2023 through 2028. The primary national forecast in this report is the July 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 2023Q1.

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. A very interesting article (May 8) is on the lingering effects of transfer payments and the extended safety net during the acute phases of the pandemic. There are three recent articles on inflation (May 30), (June 20), and (July 10) . These are among the many resources this publication references via pdf link.

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

Cover. The cover shows US GDP growth across the forecast horizon, showing multiple forecasts. Two are due to our prior national forecast provider, IHS. Two are due to our current national forecast provider, Moody's. Additionally, there is a forecast for Idaho GDP growth.

History for all of these forecasts is provided by the Bureau of Economic Analysis. National GDP figures are released before state-level data is. National figures also receive updates, as fuller data becomes available. Moody's and IHS incorporate updated data as it becomes available.

The forecast for Idaho GDP is due to a DFM resource, a new model called the ITS (Idaho Time Series) model. The traditional economic model presented by DFM is the IEM (Idaho Economic Model). It does not currently forecast state-level GDP. One other place you can see new output from this new ITS model is in the summary section. As time goes on we will incorporate more of its data into future editions of this report. Some of that incorporation may be as context, as it is here in the summary section, and some of it may be as a blend (where we use a weighted average of forecasts) through the various scenarios presented by Moody's.

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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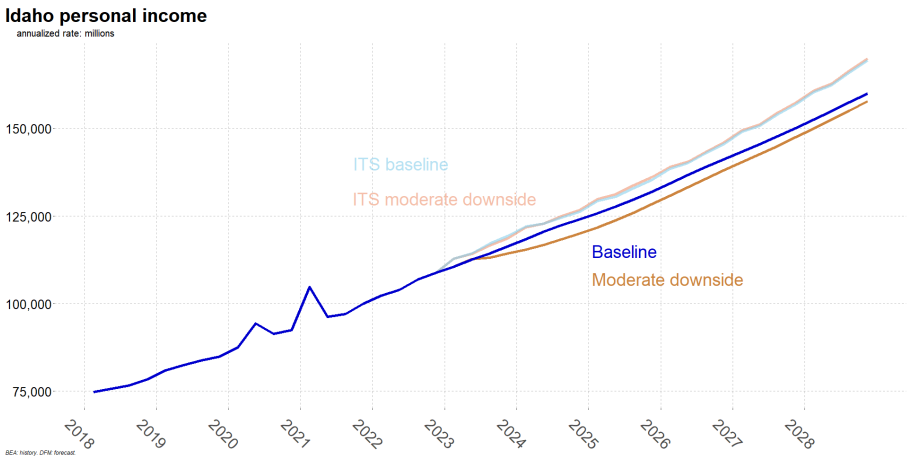
Summary

The previous quarter saw major national measures of economic health such as real gross domestic product (GDP) and inflation, as measured by the consumer price index (CPI), exceeding expectations. A national recession has yet to materialize as real GDP growth this year has been well above zero and the unemployment rate remains near historic lows. Given the pessimism since the onset of high inflation last summer many forecasters must answer a difficult question: are we living in an upside scenario or do national models need to be revised upward?

Forecasters who continue to warn about a potential recession believe the former is true. Our new national data provider does not include a recession call in their forecast, but believes growth from 2023Q3–2024Q1 will be slower than it has been this year. In their downside scenarios this is when a recession takes place. There is considerable debate amongst forecasters about growth over the next few quarters with the usually optimistic Atlanta Federal Reserve expecting strong growth in the third quarter above 3 percent. Regardless of national performance, our office continues to maintain the position we have since last summer: a near-term recession in Idaho is unlikely. Idaho continues to outperform the nation on a number of key metrics and has strong economic fundamentals.

Recent economic data for Idaho highlight the state's economic prowess. The state's unemployment rate still sits nearly a full percentage point below the nation's indicating that labor markets remain tight in Idaho. The labor market in Idaho is continuing to grow. Survey data from the Bureau of Labor Statistics show that while labor market growth was slower this fiscal year compared to previous years it is still expanding at a healthy clip.



This data is a good sign that a potential migration collapse has not taken place in Idaho. Since migration explains much of Idaho's recent growth in real GDP, wages, and employment, this is part of why we do not anticipate a recession in the state. Our office expects that migration into Idaho in fiscal year 2023 was broadly similar to what it was in fiscal year 2022. We do expect net migration to fall off in fiscal year 2024 and 2025, but only down to around 25,000, which would still make Idaho one of the fastest growing states in the country.

Current economic conditions

Economic Watch. As measured by real GDP, in the first half of 2023 the US economy has had a healthy expansion. Typically the Bureau of Economic Analysis (BEA) releases three estimates of real GDP for the country in one month intervals, with the third estimate coming out at the end of the following quarter. The second estimate for 2023Q1 real GDP was at 1.3 percent, which was above Moody's estimate of 1.06 percent. Instead the final BEA estimate surprised to the upside, with a significant revision to 2.0 percent. For 2023Q2, Moody's estimate of 1.49 percent is line with forecaster expectations, but is well below the advance estimate for 2023Q2 real GDP of 2.4 percent. While Moody's July forecast has slower growth across the rest of 2023 and 2024, there is no recession in their baseline forecast.

Real US GDP	2020	2021	2022	2023	2024	2025	2026	2027	2028
Idaho[a]	1.32	6.59	4.88	3.21	3.35	3.48	3.58	3.60	3.73
July '23 Moody's	-2.77	5.95	1.91	1.73	1.14	2.38	2.81	2.66	2.48
May '23 Moody's	-2.77	5.95	1.91	1.60	1.68	2.42	2.67	2.51	2.38
April '23 IHS	-2.77	5.95	2.06	1.45	1.46	1.91	1.97	1.81	1.76
January '23 IHS	-2.77	5.95	1.91	0.27	1.84	1.99	1.81	1.64	

[a] These estimates for Idaho GDP are a now part of the newer Idaho Time Series (ITS) economic model by DFM. They are based upon national forecasts, but these figures for Idaho reported here are not those produced by Moody's or IHS directly.

The table includes annual real GDP growth rates for the Untied States from IHS and Moody's, and a forecast of Idaho real GDP constructed using the Idaho Time Series (ITS) model. In July our office began to use Moody's as our primary national data vendor. Between January and April, IHS significantly upgraded its forecast for 2023 after its recession call at the end of 2022 failed to materialize, but that firm downgraded its growth forecast for 2024 and 2025. The Moody's forecast in May shows more growth than the April IHS forecast for all future years with significantly more growth expected after 2024. Moody's July update mirrors the April update from IHS: both increase the GDP forecast for 2023, but lower the forecast for 2024.

The July forecast includes a lowered growth rate for the remaining quarters of 2023, the lowest of which is 0.36 percent in 2023Q4. In the July forecast there are three consecutive quarters of growth below one percent; this occurs 2023Q3–2024Q1.[1] Both Moody's and IHS have lately been on the cautious side, although Moody's declined to call a recession in 2022.

Over the last several years, real GDP growth in Idaho has been consistently higher than the nation's overall rate. Idaho's real GDP expanded 3.8 percent on an annualized basis in 2023Q1 compared to the 2.0 percent national reading. While the national economy contracted in 2020, Idaho's expanded at a modest pace as migration helped fuel a rapid labor market recovery in the state. Even though Idaho recovered from the pandemic quickly, its real GDP still grew faster

[1] In Moody's downside scenarios, those are the quarters in which they have a recession taking place. As with IHS, these scenarios are developed to address the economic consequences of particular question, often asked by policy makers: what if a recession develops soon?

than the nation overall in 2021, and continued to outpace the country in 2022. We expect the pace of net migration for Idaho to slow over the coming years, but we still expect the state's economy to expand at a faster rate than the nation. Our ITS model produces a quarterly real GDP forecast which shows Idaho continuing to generally grow a full percentage point faster than the rest of the country.

Part of what makes Idaho's real GDP growth stronger than the national rate is our strong population growth rate. According to the BEA annual table, Idaho's 2010 population was 1.57 million (m) people putting it above Hawaii, New Hampshire, and Maine with 1.3 m, but below Nebraska and West Virginia with 1.8 m. Since then Idaho has been the fastest growing state in the country, pushing population up to 1.94 m in 2022. Idaho passed West Virginia which now sits at 1.77 m and is closing in on Nebraska and New Mexico at 1.97 m, and 2.11 m respectively. By the end of the decade Idaho may pass both states, but it would probably have to cross the three million mark to pass the next state, Kansas, which is currently at 2.94 m.

On a per-capita basis Idaho has had growth rates in the top third of all states since 2010 and near the middle of all states since 2020. Some of this is due to the severity of the Great Recession in Idaho. In the first quarter of 2023 real GDP per capita for Idaho grew 1.91 percent, near the median growth rate across the states. All of this growth is in spite of Idaho's lack of much oil and gas extraction, which are some of the most efficient ways to generate real GDP per worker in the US.

Personal income is a measure from the BEA that includes wages and other components of income like transfer payments, as well as dividends, interest, and rent. Since 2010, Idaho has had the third fastest growth rate for total personal income, and fastest since 2020. In 2010 Idaho's personal income per capita was $32,100 and only Mississippi had a lower personal income per capita. On a per-capita basis, the growth of personal income has been slower, but still significant. Since 2010, Idaho has had the sixth fastest growth rate, and thirteenth fastest since 2020. Idaho's personal income per capita in 2022 was $54,500 putting us just behind Louisiana and above South Carolina. In the first quarter of 2023 Idaho personal income grew 6.67 percent, right at the median growth rate. In the same quarter, Idaho personal income per capita increased 3.81 percent.[2]

International. The principle drag on the global economy remains Russia's invasion of Ukraine. The war has been devastating for the two countries who are important exporters of fuel and agricultural products. Between March 2022[3] and March 2023 Russia's economy contracted 2.6 percent, which is in line with the annualized rate of growth it experienced in 2023Q1. This suggests that the contraction in Russia's economy was not due just to economic turmoil at the beginning of the war, but rather it has seen sustained contractions, quarter after quarter.

Since our April report, Russian forces secured the city of Bakhmut, albeit with high casualties. The Ukrainian counter-offensive has yet to deliver a surprise like last September. Currently,

[2] The migration section of this report will show that migration is increasingly bringing higher income earners to Idaho which could continue to pull up the states's average income measures.

[3] Russia launched its invasion of mainland Ukraine on February 24, 2022.

Ukrainian forces are measuring retaken territory kilometer by kilometer. The most significant war developments have been off the field. Over a weekend in June 2023 there was an apparent rebellion led by the Russian mercenary Wagner group whose leader, Prigozhin, clashed with Russian military leaders.

Additionally, Turkey has informally agreed to allow Sweden's entry to the North Atlantic Treaty Organization (NATO). Russia's invasion of Ukraine has now led the alliance to expand its membership by at least two countries: Finland and Sweden. In mid-July, Russia withdrew from the Black Seas' grain corridor deal, which had been negotiated between Ukraine, Turkey, and Russia, with UN support. Both Russian and Ukraine still appear to be pursuing mutually exclusive goals, which makes a near term resolution of the invasion unlikely. As long as the war continues it will act as a growth retardant in Europe and across the globe.

A July 31st report from Eurostat[4] revised up the 2023Q1 real GDP growth rate to 0.2 percent meaning Europe avoided a technical recession from 2022Q4–2023Q1. The same report showed that growth in Europe is still positive, but only barely at 0.2 percent. The German economy contracted in 2022Q4 and 2023Q1 with no growth in 2023Q2. With the fourth largest economy in the world, Germany's economic progress often determines the trajectory of the European Union's economy. For example, Germany's economy is fifty percent larger than the next largest member, France.

Of course, there are other major forces at work in the global economy, and central bank tightening of monetary policy (raising short term interest rates) is prominent among them. A WSJ article noted that "business activity in Europe slowed sharply in June as previously strong demand for services weakened, an indication that rising borrowing costs might finally be cooling the global economy." Elsewhere, that same publication reported on a Bank of France governor indicating that the transmission of past monetary decisions, which are already well-incorporated into financial conditions, might only have their (main street or kitchen table) economic effects fully visible in two year's time.

Thus that governor is pointing out that the "long and variable lags" through which monetary policy works might be about two-year's duration, giving a glimpse of why the word "finally" was used with regard to the global economy. The first interest rate increases in the UK occurred in December 2021, followed by the US in March 2022 and the Eurozone in July 2022. The same July 31st report showed that inflation in the Eurozone was down to 5.3 percent and trending in the right direction.

The UK economy offers an example of how different the outlooks can be. UK mortgages typically last 2–5 years at a fixed rate, then must be refinanced. Rates have recently increased from 1–2 percent towards 6 percent. These higher rates are increasing monthly mortgage costs by $350–450 per month (this has been translated from British pounds into dollars). Contrast that with the situation in the US, where mortgages typically have a 30-year fixed rate: over 14 m households refinanced their mortgages to take advantage of the lower rates which prevailed

[4] Eurostat is the official statistical office of of the European Union.

prior to 2022. Those households so doing saved an average of $220 per month. That has enabled either (or probably a blend of) greater savings (rates) or greater spending.

National. Inflation, and efforts by the Federal Reserve to contain it, represent the principal national recession risk. Fortunately, news over the last three months on this front has been positive. The twelve month Consumer Price Index (CPI) inflation rate in April stalled at 4.9 percent before coming down in May to 4 percent and in June to 3 percent. The current (lower) values represent inflation not seen since April 2021. The twelve-month core inflation rate[5] has also improved. The rate fell from 5.6 percent in March to 5.5 percent in April, 5.3 percent in May, and 4.8 percent in June. The Federal Reserve's preferred inflation measure, the personal consumption expenditure (PCE) index, is falling slowly, but reached a near two year low at 4.1 percent in the most recent reading. This news was released in the final week of July.

To bring inflation back down to the 2 percent target rate, the Federal Reserve has been raising its federal funds rate, including a 25-basis point rise in late July, although it paused its rate hikes in June. Higher interest rates usually lead banks to raise their rates, which slows down economic activity, by making investment more expensive. For some time it has been clear that higher rates have slowed down construction and home sales, but the impact on labor markets has been more ambiguous.

The national July jobs report signaled that the Federal Reserves actions are having the intended effect on the economy. The jobs added in June were below expectation, and the report included downward revisions to May and April estimates of jobs added. The national unemployment rate rose to 3.6 percent, still below the long-run natural rate of unemployment economists currently peg near four percent.[6] Wage growth over the last twelve months has slowed to around 4.5 percent, below the 5 percent or more that regularly took place in 2022.

Local. While the Federal Reserves' actions are having the desired effect of slowing inflation nationally, the impact is being felt less significantly in Idaho. The Mountain Census Division[7] has higher inflation than the nation overall while also having a lower unemployment rate. Inflation in 2023Q2 for the local area fell from 6 percent in March, to 5.6 percent in April, 5.1 percent in May, and 3.7 percent in June. That low of an inflation rate has not been seen locally seen since March 2021. It is, though, still above the national rate of 3.0 percent. In June, core inflation was lower in the Mountain Division than the West or US overall; our Mountain division had core inflation at 4.65 percent. This is the first time since December 2020 that core inflation was locally lower than the corresponding measures for the West and nation.

Home prices[8] in March were 10 percent lower than they were a year ago. In fact, in March, median home prices in Idaho reached their lowest point since April 2021, at $434,100. Since March, prices have been climbing up to a median price of $459,900. Overall, prices in June were

[5] core inflation removes energy and food from the basket of goods prices in the inflation computation

[6] This rate is the more formally called the Non-Accelerating Inflation Rate of Unemployment NAIRU rate.

[7] This includes AZ, CO, ID, MT, NM, NV, UT, WY. Among regional economic statistics, the most local ones available at areas larger than an individual state are often provided at Census division levels.

[8] Data come from redfin.com, which uses data from MLS or public records.

down 6.6 percent from the prior June. Home sales are trending up. In January they bottomed out just below 1,450, which was 35 percent lower than the prior January. In June sales had moved up to nearly 2,600, which was 8 percent less than the prior June. Median days on the market have also come down. The recent peak for days on the market was in February, at 89 days. In June the median days on market was 24, six days more than the prior June. Almost 40 percent of homes sold in June had cut prices, compared to 30 percent for most of the year. During the summer of 2022, more than 50 percent of homes saw prices fall from initial asking.

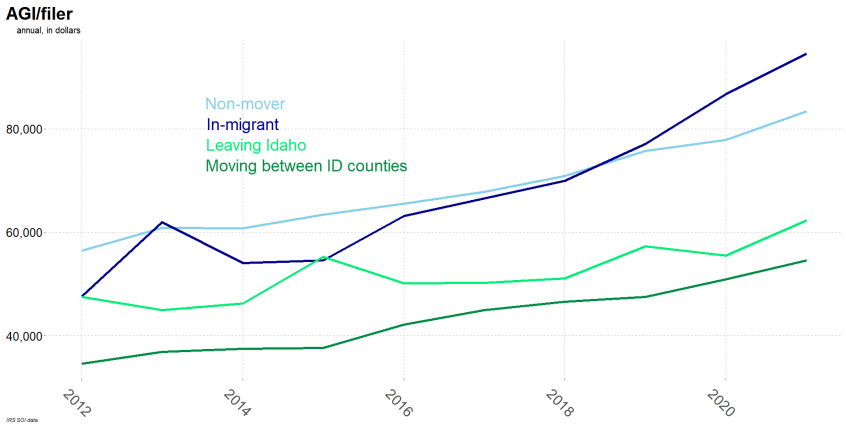
Labor markets in Idaho remain strong. The seasonally adjusted unemployment rate in Idaho has hung around 2.6 percent since the start of 2023. The Idaho rate remains around one percentage point lower than the nation, which is still holding a historically low unemployment rate. Idaho's labor market also continues to expand, providing some evidence that migration into Idaho has not slowed down. Since the start of the year Idaho has added around 17,000 jobs as measured by the Local Area Unemployment Statistics program of the Bureau of Labor Statistics.

Migration

In April the IRS released migration data for the 2021 tax year. These data include county-to-county migration flows with information on the number of filers, exemptions, and adjusted gross income (AGI[9]) along with state level data broken down by age group and income bracket. Age and income breakdowns are not available by county. We investigate trends that may have been related to the pandemic, as well as ones that are more durable and long-run.

We compare those who are coming to, moving within, leaving, or staying in Idaho. Then we examine whether migrants are raising the AGI of their destination counties. We also examine how Idahoans' decisions about where to live are impacted by different migrant flows.

AGI Differences for Different Migrant Groups. The figure shows the AGI per tax filer for four types of migrant groups for Idaho. Historically, across the entire United States, migrants who change county, but stay within their state tend to have the lowest AGI/filer. Migrants who move between states have historically had higher AGI/filer, but less than people who stay in their current county. Migrants of all kinds are younger than people who do not move, which is in accord with this general economic-means relationship. However, the gap between migrants who change state and people who do not change county is shrinking.



At the national level, in 2021 the AGI/filer of people moving across state lines was higher than the AGI/filer of people who did not change counties. Some of this could be explained by older migrants increasingly choosing to change states, but that hypothesis is not supported by the data. Instead more high economic-means people are choosing to change states, rather than stay in their current one; this may be a result of the broad housing market appreciation in the last decade.[10]

The pandemic influenced the level of migration into Idaho, but it did not alter the trajectory of the income profile of Idaho migrants. In 2012–2015 Idaho seemed to be following national trends: average AGI/filer for in- and out-migrants was about equal, and above the average AGI/filer for those who move from one county to another within the same state, while still below the average AGI/filer for those who remain in their county. After 2015, in-migrants to

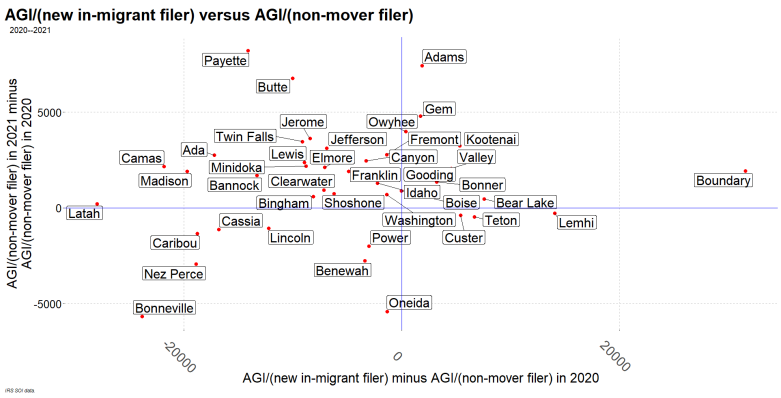
[9] AGI is the basis for tax computations at both the federal and state level. AGI is a blend of regular income and periodic wealth realizations (such as profit from selling appreciated real-estate). For this reason, we speak of economic-means rather than either just income or just wealth.

[10] When someone sells their primary residence, the gains above a certain threshold are included in adjusted gross income. Migrants who are selling homes (or real estate more generally) to fund moves may have higher AGI.

Idaho had increasingly high AGI/filer: in-migrant AGI/filer was nearly equal to non-mover AG/filer in 2017–2018, and since 2019 it has been higher. Rather than Idaho being unique in that regard, twelve states already had a higher in-migrant AGI/filer than non-migrants by 2020, another five states, including Utah, crossed that threshold by 2021, and Colorado is seeing in-migrant AGI/filer approaching non-migrant levels. Most of the Mountain Census Division states are included in this category. Some states — California, New York, Michigan, and Ohio — have out-migrants with a higher AGI/filer than non-movers in those states.

Setting up further analysis. One question arising from the higher AGI of in-migrants is whether these individuals bring temporary surges in income, such as proceeds from home sales, or if they continuously contribute to the AGI of the counties where they settle. For instance, the average AGI per filer for migrants relocating to Fremont County was $60,000 in 2020, while the AGI per filer among non-movers stood at $52,000 during the same period. This $8,000 difference may have impacted the rise in AGI per non-moving filer during the following year, which rose to $57,000 in 2021.

This type of data can be visualized. The change in AGI/filer of residents who resided and filed taxes from the same county in both from 2020 to 2021 gives the measure for the county recorded on the vertical axis. The horizontal axis records another difference in AGI/filer. Consider new in-migrants into the county who file taxes there for the first time in 2020. They have an average AGI/(new in-migrant filer) for that year 2020. Residents of the county who lived and filed taxes in that county in both 2019 and 2020 also have an average AGI/(non-mover filer) in 2020. For the horizontal axis, what is recorded is the difference between these two AGI/filers for for 2020. This is done for all Idaho counties where the IRS releases data.[11] Data of this type is available for each year 1996–2021 for our analysis.



The top half of the figure shows that the overwhelming number of Idaho counties saw an increase in their AGI/(non-mover filer) between 2020 and 2021. Looking at the horizontal axis, since this records the difference, around one-third of the counties had AGI/(new in-migrant filer) above AGI/(non-mover filer) in 2020 — this is visible because about one-third of the points have positive measure along the horizontal axis and about two-thirds have negative measure along the horizontal axis.

[11] Clark County was omitted in the figure due to a lack of data. Blaine County was omitted from figure as it was visibly an outlier. Other county names were hidden due to overwriting. The red points, though, represent all of the remaining counties.

Counties in the top right quadrant are ones where AGI/(new in-migrant filer) was greater than the AGI/(non-mover filer) in 2020 and where AGI/(non-mover filer) of increased between 2020 and 2021. We want to understand how much of that increase between 2020 and 2021 can be associated with something (such as new people moving in) that happened in 2020. We also want to consider the counties in the top-left quadrant who saw their AGI/(non-mover filer) of increase from 2020 to 2021, but had migrants come in with a lower AGI/(new in-migrant filer) than the residents already in the county in 2020. The analysis we implement needs to include both types of counties along with the counties in the bottom half of the figure to get a true average effect.

We use the difference in AGI/filer of in-migrants and non-migrants as our explanatory variable rather than use in-migrant AGI/filer because situations in which new migrants are uniquely wealthy relative to the county they are migrating to are commonly referred to, often via anecdote, in popular media and stories. Across Idaho's counties, AGI/(new in-migrant filer) is highly positively correlated with AGI/(non-mover filer). If we only focused on AGI/(new in-migrant filer) we risk our analysis being dominated by the handful of Idaho resort counties and Ada County, rather than getting a complete picture of the state.

Our first regression uses data on all Idaho counties and all years at the same time to get the average effect for Idaho from 1996–2021. We also include control variables in our regression for each county (44 variables) and year (25 variables). The county controls ensure that each Idaho county is allowed to have its own unique effect while the year controls ensure that we are capturing time-related forces like wage growth, inflation, and major economic shocks in our analysis.

Ada	In-migrant		Non-movers	
Year	filers	avg. AGI	filers	avg. AGI
2017	19,115	$68,276	155,170	$81,063
2018	15,509	$70,171	165,117	$84,419
2019	14,944	$74,138	171,807	$91,336
2020	17,111	$83,139	176,697	$94,087
2021	17,360	$85,592	181,802	$104,196

Adams	In-migrant		Non-movers	
Year	filers	avg. AGI	filers	avg. AGI
2017	199	$59,635	1,317	$48,181
2018	194	$54,989	1,405	$49,753
2019	178	$56,312	1,439	$54,719
2020	186	$84,363	1,459	$62,150
2021	193	$98,953	1,487	$56,645

These (time) control variables capture propensities of counties to have increasing AGI/filer across time as well as varying AGI/filer across geography, where influences are numerous. Some counties are economically dominated by colleges, others are dominated by agriculture. Income profiles likely differ between such counties. With the control variables capturing these propensities, the remaining variation in AGI/filer can be analyzed via regression to see if migration plays a roll in explaining its behavior. Our analysis is not population weighted — Adams county is just as important as Ada county in our analysis. The two county tables we recorded reflect how different counties can look. The control variables ensure that the fact that in Ada County has had higher AGI/(non-mover filer) than Adams County does is accounted for. We perform a number of robustness checks after our main regression to see how much the effect changes during certain time intervals and for certain counties.

Contributions to County AGI/filer From Wealthy In-Migrants. The results[12] of this analysis revealed a statistically significant trend: for every $1,000 difference in AGI per in-migrant filer, there was an approximate increase of $120 in AGI per non-migrant filer in the following year. Going back to Fremont County, the regression predicts that because AGI/(new in-migrant filer) for Fremont county in 2020 exceeded AGI/(non-mover filer) by $8,000, then AGI/(non-mover filer) in Fremont County would have increased by $\$8 \cdot 120 = \$960$. In reality, it increased by $5,000, which means that this model could only explain about 20 percent of the increase in AGI/filer in Fremont County in 2021. Other factors not explicitly included in the model, and also not captured by the year and county fixed effects, explain the rest (80 percent) of the increase.

The recent wave of migrants into Idaho may have influenced the local economy to a different degree. To gain further insights, we narrow our analysis to different time periods to assess if the effect varies in strength. Surprisingly, our observed effect is at its weakest in 2021 and 2020. In contrast, it reached its peak between 2015 and 2019. During this period, for every $1,000 difference in AGI per in-migrant filer, there was an approximate $270 increase in AGI per non-migrant filer in the subsequent year.

While the immediate impact of migration is significant, we can also estimate the persistence of the effect. To measure persistence we add additional lags of explanatory variable.[13] Returning to the Fremont County example, 80 percent of the increase in AGI/(non-mover filer) from 2020–2021 could be explained by in-migrants to Fremont County having a higher AGI/filer than non-movers in the county in 2020, but what about lingering effects from migration that took place in 2019 or earlier? If Fremont County had in-migrants with a higher AGI/filer than non-migrants in 2019, that should have increased AGI/(non-mover filer) of from 2019–2020, but could also have contributed to the 2020–2021 increase.

Lag of independent variable (in years)	None	One	Two	Three	Four
Corresponding coefficient[a]	121	16	15	-32	14

[a] Clustered standard errors at the county level are 24, 4, 5, 6, and 6 respectively.

The table shows the coefficients that result from our analysis where we include lags for one year prior all the way through five years prior in a simultaneous regression. In Canyon County the AGI/(new in-migrant filer) in 2013 was $1,000 more than for non-migrant in 2013. This table says that in 2014 the AGI/filer of non-migrants on average will be $121 higher. And because of those movers back in 2013, AGI/(non-mover filer) of in 2015 should be $16 higher, in 2016 $15 higher, in 2017 $32 lower and in 2018 $14 higher. All of those effects come from economic activity (i.e., new residents moving into the county) that happened back in 2013.

[12] This portion of the analysis and writing, all the way through page 17, is due to Claire Pashke, our summer intern.

[13] That earlier years for the measure analogous to the measure on the horizontal axis in the scatter plot on page 13.

We were interested in whether or not the observed effects were persistent at different income levels. To analyze this, we split the 44 counties into quartiles based on the average AGI per non-migrant filer as of 2021. The analysis of these quartiles revealed variations in the coefficient estimates. When looking at data from 1997–2021, the observed effects of each quartile vary from the statewide number of $120 per $1000 increase. From first to fourth, each quartile had AGI/(non-mover filer) increase by $98, $163, $40, and $135 per every additional $1,000 brought in by new in-migrants.[14]

This suggests that the extent to which the AGI of non-movers increases in the subsequent year for every $1,000 contributed by in-migrants is influenced by the pre-existing AGI levels of non-movers in that specific quartile. It also shows that this positive relationship is not unique to the wealthiest or poorest counties. It was the second quartile of counties which saw the greatest increases in non-migrant AGI/filer associated with greater differences between in-migrant AGI/filer and non-migrant AGI/filer.

Migration Sensitivity of Idahoans. The final topic we aimed to address focused on whether the nature of in-migrants had any impact on the displacement of non-movers. It is expected that if people are moving into an area, others would have to move out to accommodate the new residents.[15] To find the overall level of displacement typically associated with migration, we conducted a regression analysis, examining the relationship between the total number of out-movers compared to the total number of in-movers. This relationship revealed that for every 1,000 individuals who moved in, approximately 631 would relocate out of the county within the same year.

To delve deeper, we conducted another analysis using lagged explanatory variables. We wanted to determine the extent to which this out-migration was influenced by the in-migration that occurred in the same year compared to previous years. We found that approximately 460 individuals moved out of the county during the same year as the in-migration. However, four years later, an additional approximately 190 individuals relocated due to the in-migration that had taken place four years prior. The cause of this lagged effect is unknown, but the trend remained persistent.[16]

Lag of independent variable (in years)	None	One	Two	Three	Four	Five	Six
Corresponding coefficient[a]	461	5	15	15	193	47	4

[a] Clustered standard errors are 25, 12, 9, 11, 7, 21, and 14.

We performed a parallel analysis to discover whether this displacement was consistent depending on the origin of the in-migrants. To analyze this, we regressed the total number of

[14] Clustered standard errors are 26, 23, 19, and 51 respectively, so the coefficients 98, 163, 40, 135 are generally statistically significant.

[15] Most home sales are of existing homes; new construction has tended to be a small percentage of the existing stock of housing.

[16] It is important to note that these effects are the "best-fit" of the model to the data; the 460 here does not contradict the 631 of the previous paragraph: they are best-fits for answers to differing, though similar, questions.

out-migrants against the number of out-of-state in-migrants. From this, we found that for every 1,000 in-migrants coming from out-of-state, 575 individuals would leave in the same year with an additional 240 individuals departing four years after the in-migration occurred.

An example can be illustrative. Consider Kootenai County, which regularly gets migrants from other Idaho counties and from Washington state. The first regression here says that when any thousand migrants move to Kootenai County, we should expect 461 residents to leave the county that year. The second regression says that if those 1,000 migrants were instead all from Washington state, then we should expect 575 residents of Kootenai County would leave that year. In practice some counties get less than one thousand migrants coming in, and all counties get a mix of out-of-state migrants and in-state migrants, but these average effects indicate that Idahoans are more willing to relocate when out of state migrants come into their county.

Lag of independent variable (in years)	None	One	Two	Three	Four	Five	Six
Corresponding coefficient[a]	575	-7	-3	15	242	98	99

[a] Clustered standard errors are 32, 6, 23, 20, 25, 31, and 23.

We also wanted to see if there were differences for Idahoans who choose to move to a different Idaho county or who choose to leave the state when migrants come to their county. The findings revealed that when comparing the number of same-state out-migrants to the total number of migrants in, approximately 220 individuals departed in the first year. This means that when Idahoans choose to leave their county, but stay in the state, fewer of them leave when the same number of migrants move into the county.

Lag of independent variable (in years)	None	One	Two	Three	Four
Corresponding coefficient[a]	223	29	16	35	72

[a] Clustered standard errors are 23, 20, 14, 14, and 19.

Economic outlook

Moody's outlook summary is captured in just a few words: "the US economy is showing significant resilience." The firm believes a soft landing is the most likely outcome as the Federal Reserve continues to fight inflation. The baseline outlook from the firm is "that the Fed will accomplish its goal of slowing inflation without precipitating a recession." In further detail, that baseline outlook is for core inflation to approach the Federal Reserve's 2 percent target in mid-2024, but that monetary policy will remain restrictive through 2025, though the firm's forecast is for the first rate cut to occur in June 2024. The federal funds rate is expected to re-attain a neutral rate, neither accelerating nor decelerating the US economy, in 2026.

US growth rates	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
US nonfarm jobs	1.34	-5.79	2.9	4.34	2.27	0.58	0.39	0.4	0.38	0.41
US population	0.04	0.03	0.02	0.04	0.06	0.05	0.04	0.04	0.04	0.03
Total personal income	5.11	6.7	7.37	2.27	5.13	4.63	3.97	4.27	4.3	4.22
... inflation adjusted ...	3.56	5.54	3.22	-3.76	1.34	2.04	1.89	2.36	2.32	2.17
Wage & salary payments	4.77	1.42	8.81	8.74	5.27	5.23	4.13	3.75	3.63	3.64
... average US wage ...	3.39	7.66	5.73	4.22	2.93	4.62	3.72	3.33	3.23	3.22

ID growth rates	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
ID nonfarm jobs	2.95	-0.06	5.02	3.71	2.05	2.86	2.74	2.79	2.49	2.2
ID population	2.11	3.36	2.98	1.97	1.78	1.3	1.46	1.25	1.03	0.91
ID personal income	8.63	10.14	8.86	5.97	7.57	6.95	6.13	7.02	6.43	6.53
... inflation adjusted ...	7.03	8.95	4.7	-0.34	3.7	4.3	4.01	5.05	4.41	4.44
Wage & salary payments	5.73	7.41	11.96	11.86	7.08	8.47	7.51	7.07	6.85	6.8
... average wage ...	3.4	7.03	6.75	8.05	4.98	5.59	4.77	4.28	4.36	4.6

The BEA released its first estimate of 2023Q2 real growth for the US economy: real GDP expanded at the 2.4 percent annualized rate, up from the third reading of 2023Q1 growth of 2.0 percent. The same US agency also released its estimate for personal consumption expenditure inflation (PCE) for the US across the time-frame ending in June 2023: core (so excluding food and energy) PCE inflation came in at a year-over-year growth of 4.1 percent. That is down from readings of 4.6–4.7 percent, which persisted from February through May. Core PCE inflation is targeted by the Federal Reserve; it aims to keep core PCE inflation near 2 percent on average.

The June jobs report was close to Moody's expectation. The outlook going forward is for further slowing in jobs. The most recent quarter saw over 240 thousand jobs per month added to the economy. The current quarter is expected near 170 thousand, and the final quarter is expected to be below 100 thousand. Unemployment is expected to be 3.8 percent — within a few ticks of its current mark, which is 3.6 percent —by the end of the year. Next year the unemployment rate is expected to average 4.2 percent. Given the demographics of the US, job

gains of 100 thousand per month are sufficient to keep the unemployment rate steady unless the labor force participation rate changes. Recent readings of that have been around 62.5 percent.

Moody's puts its expectation for energy demand somewhat lower than the International Energy Agency. The firm, though, does expect the Organization of Petroleum Exporting Countries[17] to curtail production enough to support prices, but that US shale oil will somewhat counter those efforts. Moody's points out that Russian exports of crude and petroleum products remains at levels prior to the Russian-Ukrainian war. Prices for oil have recently been near $75/barrel, and Moody's points out that OPEC members generally need $80/barrel to keep their fiscal policy, but that much above that draws in greater shale oil production, so that $100/barrel is unlikely. The firm finds that $75/barrel is the long-term expected value of oil (of course, to be adjusted for inflation going forwards.)

With regard to the 0.7 revision between the second and third estimate by the BEA on 2023Q1 real GDP, Moody's pointed out that consumer spending was a key driver,[18] but put that in the context of large cost of living adjustments beginning for social security recipients in January. Those adjustments, based upon a prior year's inflation, were the largest in several decades.

With the pandemic now several years from initial outbreak, the assumption by Moody's is that any subsequent wave will be less disruptive and that adaptation will be quicker. Given that, the firm is pointing out that the fiscal legacy of the pandemic response is that debt levels are no longer near 80 percent of GDP, but are close to 100 percent of GDP. The firm estimates that the debt will be above 115 percent of GDP at the close of ten years.

Housing starts and construction. Housing activity via new construction has picked up, partly compensating for the lack of inventory of existing homes for sale. Moody's, as other economic firms, has pointed out that consumers are so-to-speak locked into their low interest rate mortgages. Those low mortgage rates may be initial loans, or they may be refinances. Either way, homeowners are reluctant to relinquish a low-rate loan for a new, higher-rate loan until there is sufficient equity to capitalize from their current home and/or low enough prices in their desired market to justify the extra financing costs in any new loan. Consequently, those in the market for buying a home are to a greater degree being forced into the new-home market. Home-builder sentiment is increasing, reflecting this pool of customers.

		2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
US	% growth	3.58	8.16	14.95	-3.39	-10.30	-1.58	12.74	5.75	-1.81	-3.81
	single units	888,900	1,003,100	1,131,800	1,004,400	879,200	924,400	1,105,000	1,208,000	1,200,900	1,160,500
	multi units	232,500	249,400	269,000	240,600	338,900	345,300	315,400	308,800	295,900	266,900
ID	% growth	4.93	8.76	14.17	-2.75	-27.99	15.98	-5.01	-2.36	-0.40	-5.10
	single units	13,000	14,600	16,400	13,800	9,700	10,800	10,700	10,600	10,700	10,700
	multi units	3,900	3,700	4,500	6,600	5,000	6,200	5,500	5,200	5,000	4,300
	% growth	2.07	2.14	2.28	2.19	1.89	1.84	1.83	1.81	1.79	1.77
	stock	754,600	770,700	788,300	805,500	820,700	835,800	851,100	866,400	882,000	897,600

[17] OPEC, sometimes with a + to indicate Russia when it participates in decisions,

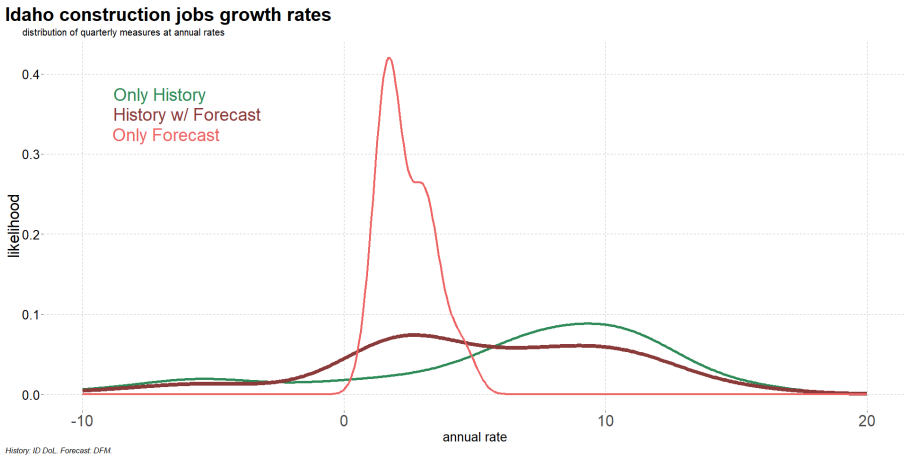
[18] It pushed upwards GDP by 2.8 percentage points, though the accumulation of other components put the final tally at 2.0 percent.

We include here a few remarks from our previous national forecast provider as well. In the third week of May, IHS noted:

> Housing prices have moderated: the median sales price fell 1.7 percent from April 2022 to April 2023. That marks three months for which the 12-month change has been negative. Median sales prices had [emphasis added] exhibited a streak of 12-month increases beginning in February 2012 and lasting [over a decade] through 2022. The peak 12-month percentage increase in median prices occurred in May 2021, with a 25+ percent increase over May 2020.

Looking only at new home prices, they declined 8.2 percent from April 2022 to April 2023, though new home sales transaction (counts) "achieved a 12-month change which was positive, the first time that had occurred in the past 14 months." Existing home prices were 8 percent lower in the West, though that was 9 percent for homes whose loans were secured through the Federal Housing and Finance Association (FHFA). Sales of existing homes took longer, with 73 percent sold in under a month, down from 88 percent selling that quickly a year earlier. New homes take longer to sell; 2.8 months is the typical time.

Finally, IHS noted that adjusting home prices for CPI inflation (the Federal Reserve does this computation) shows that they are up 71.5 percent from the low-point in 2012, and they are up 11.3 percent from the previous all-time high reached in late 2005. While those are longer term perspectives, both those and the shorter duration ones are, in IHS's estimate, best thought of in terms of mortgage costs. The firm finds that the movement in the housing market is almost entirely explained by the movement of the conventional 30-year mortgage rate. Focusing on the last few years, that rate "fell to a record low of just 2.65 percent in January 2021, then increased to 6.39 percent as of May 2023."



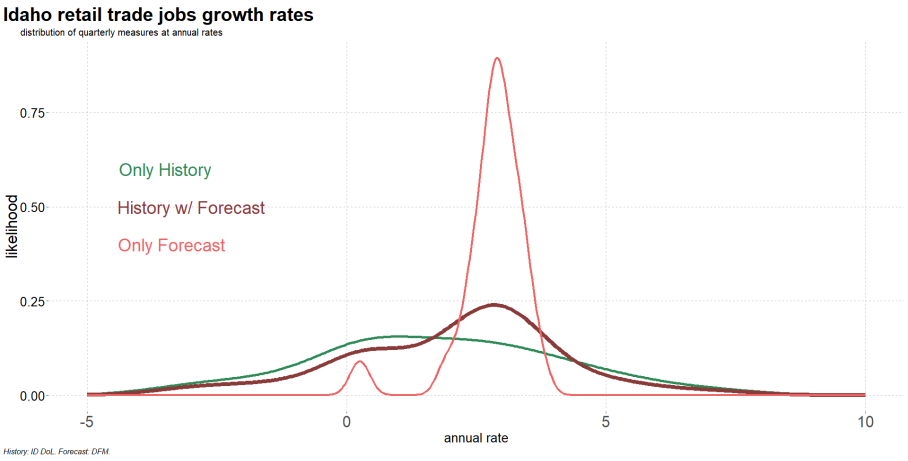
A WSJ article noted the following in June: "Existing-home sales have declined by about one-third since the start of 2022. Home prices have fallen the most in the western half of the US." Boise saw median prices down 14.3 percent from May 2022 to May 2023 according to data from Redfin. At the same time, all-cash transactions continue to be about 1 in 4 sales according to the National Association of Realtors.

Freddie Mac has observed that there has been as shift in the composition of home sales. New home sales have risen, existing home sales have shrunk. The levels now generally show new home sales at "the largest percentage of total home sales since 2008." Three in ten homes on the

market are now new homes. As have been observed by other forecasters, existing homeowners are not putting their homes up for sale. Freddie Mac points out that "very few mortgage loans are now in-the-money for a refinance, with only about $60 billion out of over $7 trillion of 30-year mortgages securitized in [GSE financing, like Freddie Mac financing] anywhere close to in-the-money for a rate-and-term refinance." Most mortgages had interest rates at or below 4 percent. Any new loan is likely to be at least two percentage points higher, keeping those owners from approaching the bank, either for a refinance, or to finance a different home purchase.

Freddie Mac also pointed out data from FHFA: in their June report, they noted that Mountain West homes have declined by 1.3 percent in pricing. The Freddie Mac forecast for home prices more generally is for them to fall by 2.9 percent through 2024Q1, then to fall an additional 1.3 percent to 2025Q1.

Retail trade. IHS noted the following in May: E-commerce has likely attained a "level-shift" (upwards) due to the pandemic. Recent data shows a resumption along a parallel track to the trend e-commerce had prior to March 2020. With regard to that level-shift, e-commerce 1.5–2 percentage points more of general commerce than it would have been by now.



A recent WSJ article on the auto-industry pointed out that its performance is indicative of the retail landscape. "The surprise strength in the auto sector reflects resilient consumer demand elsewhere in the economy—from furniture to groceries and travel—as Americans continue to spend through economists' predictions of a slowdown." Autos and furniture are both durable goods, and both are often bought on credit. Another WSJ article noted that "household debt service payments accounted for 9.6 percent of disposable personal income during the first quarter [of 2023], below the lowest levels [of 1980–March 2020].

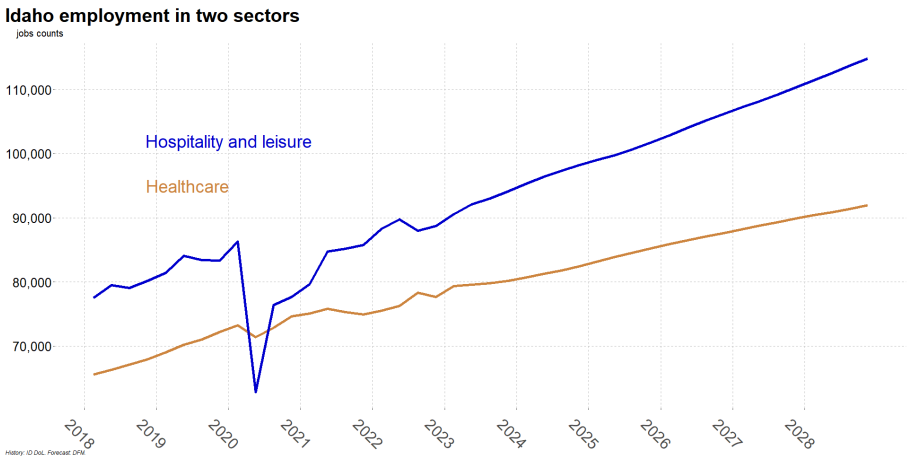
Not all analysts expect consumers to always spend more. Deloitte is predicting a 10 percent decline in back-to-school shopping this summer, the first decline in that shopping pattern since 2014. Deloitte says that almost 3-in-5 dollars spent on back-to-school is done in July, and in-person shopping is still expected to be the bulk of such shopping. One piece of context for the prediction: Deloitte pointed out that the BLS has found that school-supply prices have risen by 24 percent in the past two years, staying well ahead of the broader level of CPI inflation.

Healthcare. Franklin County in southeastern Idaho had a new hospital open. Franklin County Medical Center is a 24 thousand square foot, 20-bed facility offering both emergency and planned medical care. The new hospital building has been five years in development. A new facility will also be opened in Post Falls, though in 2024. This one is about 8 thousand square feet, where 15 people will work, and where there will be two out-patient surgery operating rooms. Along similar lines, Family Health Services had a groundbreaking in Shoshone for an 11 thousand square foot facility. Dental services will be provided among other services; there will also be an ambulance garage, as well as support for helicopter services. Bannock County and McCammond are also entering into an agreement to expand emergency services at the McCammond fire department. This expansion is using American Rescue Plan Act (ARPA) pass-through dollars. Kootenai Health, which has been a public hospital (a district hospital), is converting to non-profit status. The conversion removes some public entity authorities, but allows the hospital to use other (fundraising) avenues.

Hospitality and leisure. Kootenai Health is the largest employer in the Panhandle region, but the Coeur d'Alene tribe is also a large employer, one with a substantial presence in the hospitality and leisure sector of the region through its Coeur d'Alene Casino Resort Hotel. The tribe also operates a spa and a golf club. Estimates of its economic impact, which includes other tribal employment (including government functions) are upwards of $300 million.

Tamarack Resort in Valley County is grappling with housing difficulties for its workers. Sun Valley Resort does as well. The same is true in the Panhandle region. Efforts are being made to expand affordable housing, with 82 units being built in Valley County.

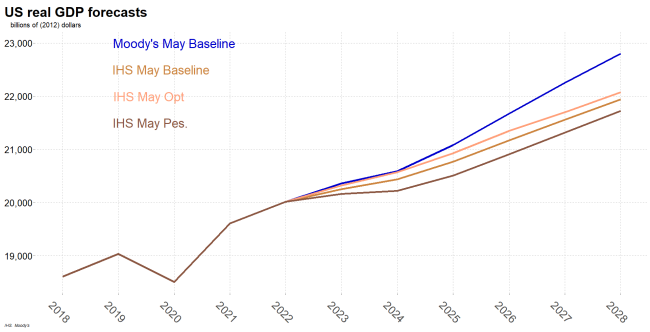
Idaho Parks and Recreation has about $95 m in capital improvements funding in FY 2024. This will go towards project including "adding 450 new campsite, 25 day-use areas, and rehabilitating 150 boat slips." While Parks and Recreation fits within government employment, this capital infusion will have benefits for the hospitality and leisure industry statewide.

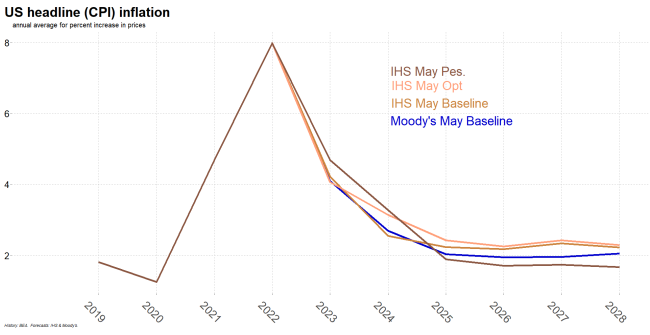


Forecast analysis

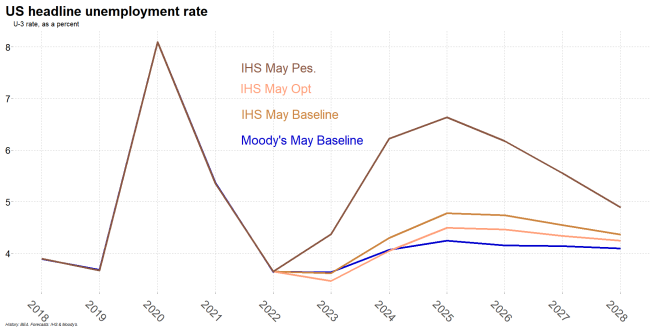
Forecast comparison. DFM changed its vendor for the national forecast this spring. This July publication represents the first forecast using Moody's forecasts for the US economy. Prior forecasts have been based upon IHS forecasts of the US economy. It is due to this change that this section will have a fuller set of subsections and analysis than it traditionally does.

US forecast comparison: the view as of May 2023. The last available forecast by IHS that DFM's contract provided was the May 2023 forecast. As such, that is where we make the comparison across the two national forecast providers. As their forecasts each contain thousands of economic series at the quarterly frequency, it is only a summary that we can provide. DFM traditionally has used 50–100 of those economic series in order to project the Idaho economy. Thus a summary provides a reasonable understanding vis-a-vis the end product, the Idaho economic forecast.





The drivers of the Idaho economic model tend to be indices and rates: prevailing wage rates, expected inflation rates, future mortgage rates, exchange rates — all of these appear in many of the equations of the Idaho economic model. Production indices in manufacturing sectors such as semi-conductors, agricultural chemicals, and wood products, as well as producer prices indices for similar industries help us to understand the likely employment trajectories and the likely wage rates (i.e., average annual salaries) and wagebills (i.e., total wage payments across the industry) going forward. Other common inputs for our equations involve assessments of household wealth as well as government spending. While informative for the economic modeling, *some* of these usually take a back seat in our description of the expected economic trajectory of the nation and the state because they are not typically discussed in the news. Often, instead, we focus on even more summarizing statistics, such as GDP, the unemployment rate, and CPI inflation. These statistics have familiarity from the news, and they do encapsulate a lot of what the US forecast portends for the Idaho economic forecast, even if they are not direct drivers of as many of the equations within the Idaho economic model.



In the accompanying figures, we see that Moody's has a generally more optimistic outlook compared with IHS. Some of these things go together. A lower unemployment rate is likely to occur with more robust GDP figures. Though real GDP takes into account inflation (through a related measure, not directly through CPI), more modest inflation is likely to improve consumer sentiment, hence consumer spending. As is often remarked, the US economy is driven by consumption.

Page 25 shows a table giving the evolution of the Idaho forecast across the past year.

This shows the evolution of the Idaho forecast across forecasting cycles. These are among the more stable portions, though the more important measures, of the Idaho economy.

old 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
January forecast		2022	2023	2024	2025	2026	2027
Personal income	$ m	104,297	111,079	118,823	126,772	136,206	145,800
Wages	$ m	47,742	50,907	54,370	58,500	62,946	67,647
Population	count	1,940,750	1,969,631	1,997,337	2,029,132	2,062,106	2,093,037
Nonfarm	jobs	826,985	849,441	871,932	897,305	924,855	951,845
April forecast		2022	2023	2024	2025	2026	2027
Personal income	$ m	105,600	113,414	122,319	131,537	142,865	154,709
Wages	$ m	48,252	52,624	57,431	62,606	68,412	74,849
Population	ct	1,946,916	1,972,797	2,001,989	2,036,939	2,072,509	2,106,271
Nonfarm	jobs	827,797	850,015	877,421	906,132	938,385	970,887
July forecast		**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Personal income	$ m	113,473	121,359	128,803	137,850	146,715	156,302
Wages	$ m	51,497	55,859	60,054	64,300	68,706	73,375
Population	ct	1,976,327	2,001,992	2,031,163	2,056,520	2,077,766	2,096,675
Nonfarm	jobs	844,779	868,955	892,755	917,654	940,495	961,149

Note, the prior forecasts are based upon IHS forecasts of the US economy. The latest July forecast is based upon Moody's forecast of the US economy.

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.

Moody's July 2023 forecast. To understand these percentiles, consider that Moody's is capable of producing 100s if not 1,000s of scenarios for the US economy. For example, differing ones could simply be the result of adding $1 per barrel of oil, with the difference being the onset of that additional cost or the duration of it. Another option would be to place Federal Reserve adjustments to the federal funds rate going forward at differing meeting, say a July rise in interest rates or a September one. While these rises are somewhat telegraphed, the exact timing is not known in advance, and so provides another avenue for creating new scenarios. Now with a passel of such scenarios for the US economy (and we will consider a passel of just 100 in our discussion), Moody's ranks these in terms of outcome for the US economy overall. Economies are multi-dimensional, so ranking them is non-trivial because it requires weighting what are deemed the most important measures, and scoring the multi-dimensional economy along just one dimension, that of the weighted measure used for the ranking. The rankings might be based upon a weighted average of (high) real GDP and real personal incomes together with (low) unemployment and (high) labor force participation. Undoubtedly, the weighting criteria evolve over time, just as the regression equations Moody's uses to build its forecast.

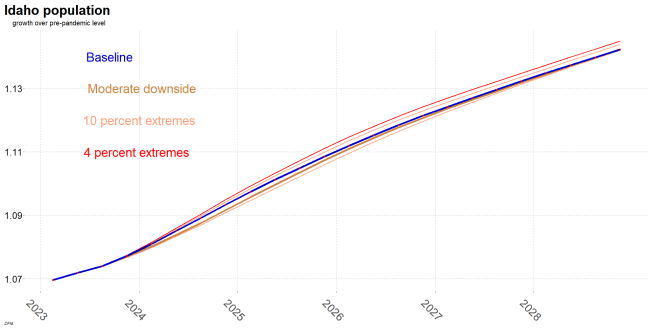
Once those rankings are in hand, the 4-th percentile is the the scenario which ranks fourth from the top (out of our passel of 100). The 75-th percentile ranks 25 from the bottom. The median is the one in the middle (or an average of the two in the middle). While the 4-th and 96-th percentile are in rare realms of possibility, they do occur. Multiple upsides and multiple downsides helps us to be informed as to the broad scope of possibilities. The value of being aware of these possibilities and their impacts was made salient in the events of March and April 2020.

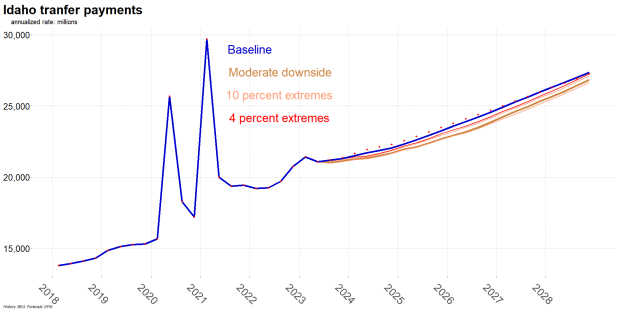
We are presenting the downside 75-th percentile in table and discussion, along with the 10-th percentile for the upside. These are analogous to the optimistic and pessimistic scenarios previously discussed when we used the IHS US outlook. Moody's traditionally provides a suite of standard alternative scenarios for the US economy: these are labeled S0–S4 in their nomenclature, and they often provide others topical scenarios. In their July release, they included a further set S5–S8. While we consider these as well, to keep the presentation consistent and to keep it fairly narrow, we focus in tables on one upside scenario, one downside scenario, but in (some) graphs present the S0–S4 trajectories along with the baseline.

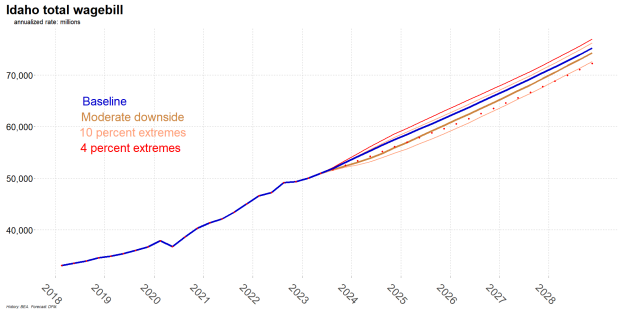
Idaho trajectories. Population is expected to continue to grow under the Moody's scenarios. Partly this is because Idaho continues to have natural increase in its population: births outnumber deaths. The recessions in the downside scenarios of Moody's are not severe enough to reverse the net migration flow that Idaho has recently had. By looking at the percentage

growth, though, we see that population is a slow-moving, though, as we has seen, important contributor to Idaho's economic vitality.

Transfer payments to Idahoans are expected to be lower in the milder downside scenarios. Partly this reflects slower population growth in those cases, so there are fewer people to be recipients of transfer payments. Partly this reflects that the downturns in most of the downside scenarios from Moody's are not expected to result in significant bumps to transfer payments — they do not anticipate stimulus checks from the federal government. This can be seen in the smooth trajectories of all of the curves. However, the most extreme downside case (dotted) does result in greater transfer payments (though still smooth, without big stimulus jumps like in 2020 and 2021) than in the baseline.







Total wages paid to all Idahoans are expected to swoon under the more severe downside scenarios from Moody's. By the close of 2028, the second-harshest downside scenario would see about $2.5 billion less in total wage payments that year than what is expected under the baseline. The more modest downturn sees some convergence in total wagebills to the baseline by then. These trajectories take into account job growth as well as wagerate growth across time, and part of that wagerate growth is tied to inflation. As we have seen, though, inflation is expected to be more moderate than recent experience across all of these alternative scenarios from Moody's. In fact, recall that cpi inflation is lower in the downside scenarios initially because these downside cases involve near-term recessions. Note that the most extreme downside case here (dotted) does eventually result in the lowest wagebills, but that is a cumulative effect. For the first year or two, the more modest downside risks result in even lower wagebills. This, along with the other quirks presented in the graphs in this section, illustrate how ranking multi-dimensional phenomena, such as an economy, can result in perhaps counter-intuitive expectations.

Idaho		2021	2022	2023	2024	2025	2026	2027	2028
Nonfarm jobs	baseline	798,143	827,772	844,779	868,955	892,755	917,654	940,495	961,149
	optimistic (u10)	798,143	827,772	844,333	866,348	889,866	913,731	934,692	956,455
	pessimistic (d75)	798,143	827,772	842,408	852,820	874,473	900,183	923,753	946,883
Wages, m $	baseline	42,992	48,092	51,497	55,859	60,054	64,300	68,706	73,375
	optimistic (u10)	42,992	48,092	51,545	56,136	60,564	64,899	69,342	74,267
	pessimistic (d75)	42,992	48,092	51,267	54,437	58,612	63,007	67,527	72,412
Housing starts	baseline	20,982	20,405	14,693	17,042	16,189	15,807	15,743	14,940
	optimistic (u10)	20,982	20,405	14,750	16,939	15,871	15,514	15,417	14,676
	pessimistic (d75)	20,982	20,405	14,842	18,126	16,662	16,026	16,147	15,137

Alternative forecasts. Summary statistics are presented in the table. Two years of history are given, 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 that history does provide some context for the changes envisioned in these two Moody's scenarios.

Baseline nonfarm job growth in 2022 of 3.71 percent is not expected to happen again with growth ranging from 2 to 2.8 percent each year over the next five years. Likewise the 11.86 percent growth in 2022 for the state wagebill is above what we expect going forward, although we still expect our state wagebill to grow more than 6.80 percent in any of the next five years. Housing starts are expected to fall substantially in 2023 before a modest recovery in 2024. Beyond 2024 we expect a slow, but steady, drop-off in housing starts.

The two alternatives presented here are the upside-10 percentile and the downside-75 percentile. In the upside-10 scenario, a strong labor market pushes wage rates up and forces the Federal Reserve to keep interest rates higher for longer. This keeps housing starts and employment below the baseline. In the downside scenario a weaker economy triggers an earlier and more rapid decrease in the federal funds rate. This aids the housing sector, but does not offset the wage and employment losses.

All three scenarios reflect strong growth in Idaho for nonfarm jobs and wages. The decline in housing starts reflects a return to normalcy for the state after a substantial wave of in-migration in 2020 and 2021. Across our scenarios Idaho continues to outperform the nation. At some point in the future this may change, but for now Idaho's near-term growth trajectory is strong.

Appendix

National Economic Models

a. US Economic Model by 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. It aims 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. Expenditures are influenced by 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[19] and state and local governments. 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 personal income.

[19] with fiscal scores largely reliant on the Congressional Budget Office (CBO) or the Joint Committee on Taxation (JCT) or other official forecasts

(2) **Production and Income.** The industrial production sector follows the North American Industrial Classification Standards (NAICS). 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.

(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. IHS adjusts the effective average personal tax rate for variations in inflation (brackets are indexed) and income per household (the distribution of income across the population), 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.

(5) **Financial.** Several short- and long-term interest rates are covered in this model, and they are the key output of this sector. 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 lately 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.

b. 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 trade[20]
(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.

> 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

[20] Moody's emphasises trade in their model.

> 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 goverened 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.

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.

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:

> **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[21] 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.

[21] 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.[22]

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.[23] 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

[22] 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.

[23] 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 wagerates 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.

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
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 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
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, 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	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 Suppor and Waste Management
EEA_ID_61	Employment in private education
EEA_ID_61	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, 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