

Macroeconomic Setting

In recent years, economists were worried about the high probability of recession. Historically, inflationary economic booms have not ended well. The Federal Reserve was willing to risk a recession in order to get inflation under control. Encouragingly, the past year has gone better than economists could have hoped for. Inflation is at or near the Fed's target. The labor market has rebalanced and is no longer overheated. Importantly, underlying economic growth, as measured by real GDP and consumer spending, remains strong.

The challenge for the Fed is threading the needle for monetary policy to continue to keep inflation near target, and ensure the expansion continues. Today the Fed is indicating they will make three quarter point rate cuts this year. Given inflation is already near target, financial markets priced in more like six rate cuts, double what the Fed indicated.

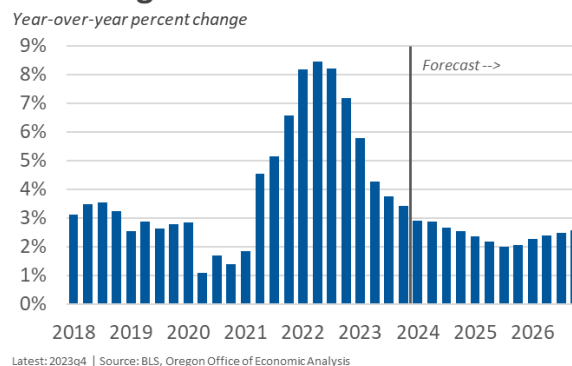
As recent national economic data continues to show good to great gains, financial markets are repricing interest rates higher, realizing the Fed may not cut rates as quickly, or as deeply as market participants thought just a few weeks ago.

An important dynamic is that inflation has slowed further than headline economic growth, meaning real growth, or inflation-adjusted growth is picking up. In particular, personal income is once again outpacing inflation, raising the living standards of Americans and Oregonians. It may be somewhat tautological, but real income growth supports real consumer spending growth, which in turn results in real economic growth as firms produce more goods and services to sell to customers. And the need to produce and sell more products increases labor demand.

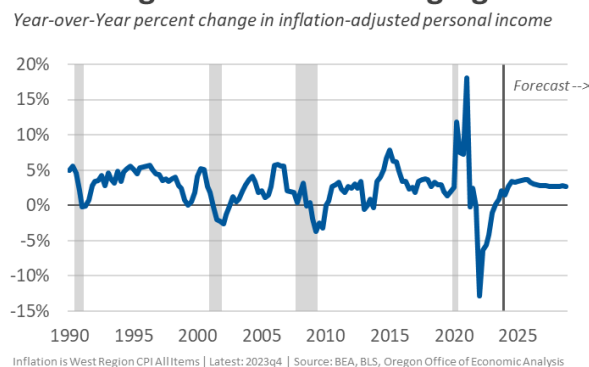
The pandemic and reopening bullwhip effects are still reverberating to some degree. However as consumer spending remains strong, and inventories dwindle, increased manufacturing and logistics activity is needed to restock. These cyclical industries have been down in the past year or so, which caused some of the recession concerns. However the outlook is brighter and goods-producing industries are expected to stabilize in terms of employment, and increase production this year.

Ultimately, the risk for the Fed is cutting rates too quickly, or deeply which may spur stronger economic growth and a rebound in inflation, versus not cutting rates quickly or deeply enough thus leaving

West Region Consumer Price Index



Real Oregon Income Growing Again



interest rates too high and ultimately chocking off growth. Practically speaking, the difference between three and six rate cuts and whether they start next month or in a handful of months likely does not amount to much for the macroeconomy. The key is that the Fed is generally moving policy in the right direction given the state of the economy. The risks lie with larger policy errors, and policy not being nimble enough to offset whatever unexpected shocks or trends there are just beyond the horizon. But should there be a growth scare for whatever reason, expectations are the Fed will cut rates a bit sooner, and/or deeper than they currently are indicating.

Oregon's Economic Outlook

Locally, economic growth is combination of the number of workers and how productive each is. So far this cycle, Oregon's productivity gains have outpaced the nation, while local job growth is in the middle of the pack across states. Looking forward the outlook for labor and capital are on differing, structural trends. Labor is both cyclically strong today, and structurally tight due to demographics. The good news is that between the start-up boom, increased federal investment, and potential of generative AI, productivity is set to increase faster in the decade ahead. These gains will boost the overall economy and makeup for slower labor growth. Even so, one of the key dynamics for stronger business investment is a tight labor market. When workers are scarce, and expensive, firms are more willing, if not forced to invest in labor-saving technology and processes.

2023 Population Estimates and Forecast Changes

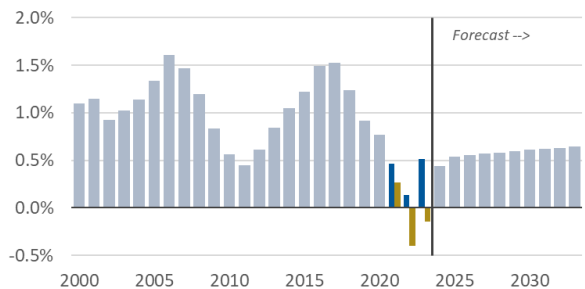
Late last year both Portland State University's Population Research Center, and the Census Bureau release their 2023 mid-year estimates. Once again the estimates differed with PSU showing a small increase and Census showing a small decline. While the cumulative gap between the two estimates over the 2020-2023 period is larger – approximately 56,000 – the bottom line is Oregon's population growth continues to be much slower than in decades past.

A slight gain or loss does matter from a big picture narrative, but the practical matter is the latest estimates are another indication that some of the pandemic migration patterns may be more permanent than previously believed. Our office's baseline has been, and continues to be for a modest rebound in growth in the years ahead. Oregon continues to have plentiful job opportunities and provide scenic and recreational amenities. However, the combination of bad housing affordability, and increased remote work opportunities likely means migration flows will be less than they have been historically.

Oregon Population Growth

Annual change in total state population

OEA History and Forecast, [Portland State Estimates](#), [Census Estimates](#)



Latest: 2023 | Source: Census, Portland State Population Research Center, Oregon Office of Economic Analysis

Our office has lowered the population outlook over the forecast horizon. In the decade ahead, the forecast now calls for 0.6 percent annual growth, down from the 0.7 percent annual growth in the previous forecast. This lower population outlook does feed directly into a slight reduction in the

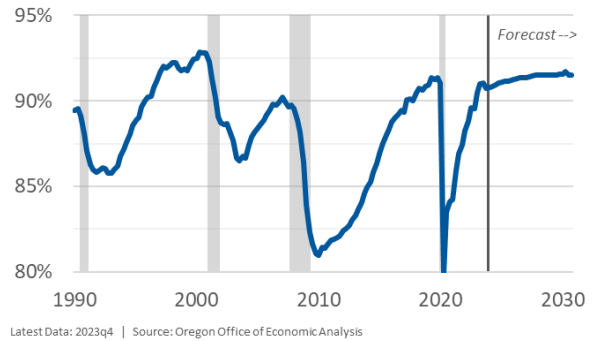
economic outlook of the state as well. Keep in mind that the state’s population, labor force, income, housing demand and the like are expected to increase, just now at a slightly slower rate.

Labor is Cyclically Strong, and Structurally Tight

Employment in Oregon has fully recovered from the pandemic. On an age-adjusted basis, the share of Oregonians with a job is nearly as high as it has ever been in our recorded history. Economists tend to call this full employment. The nature of our economic forecast is that the labor market remains cyclically strong at these high employment rates until whenever the next recession comes. This is the main reason that firms are struggling to find workers, the simple fact that nearly everyone who wants a job, already has one, and those that do not cannot more readily find one given the number of job openings in the economy.

Oregon at or near full employment

Payroll employment as a share of potential labor force

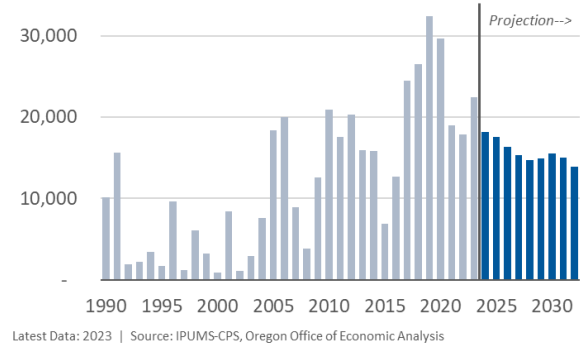


However, beyond the cyclical strength in the economy today, the labor market is structurally tight for demographic reasons. With a growing older adult population, the number of retirements picked up last decade.

With the large Baby Boomer generation continuing to reach their traditional retirement years in the decade ahead, retirements will be larger as well. It is economically difficult for firms to replace workers with a lifetime of experience and expertise, especially when it comes to within firm experience and institutional knowledge. As such there may be a short-term loss of productivity as firms train new workers, or employees move into new roles within the company. Such an impact is typically temporary, and difficult to see at the macro level even if at the micro level the impact is real.

Oregon Retirements

Annual change in Oregonians 60+ years old not in the labor force



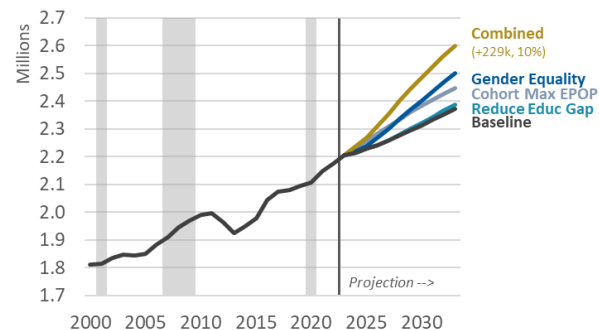
Now, Oregon’s labor force is expected to grow in the years ahead. However, given the state’s low birthrate in recent decades, and the slower migration outlook, the net labor gains are expected to be smaller than in decades past. Firms looking to hire will need to dig deeper into the resume stack and choose candidates they may have passed over in a weaker economy. This includes workers with an incomplete skillset, and on the job training becomes even more important than ever.

Additionally, firms are likely to begin to hire to a greater degree from the state’s Latent Labor Force. The economy may be at the typical labor force constraint today, but that does not mean there are no more potential workers entirely. The Latent Labor Force is based on historical disparities when it comes to

jobs and wages for Oregonians of different races and ethnicities, different levels of educational attainment, and different genders, or sex.

Today the Latent Labor Force finds that there remains a sizable pool of potential workers already living in Oregon when it comes to addressing, and reducing these historical disparities. Now, a bit of good news is that the Latent Labor Force today is a bit smaller than when our office previously did the analysis. Partially this is due to a slower population outlook, but also this is because these disparities are smaller today than a few years ago. Some progress on closing these economic gaps is being made already in the strong economy, even as gaps remain.

Oregon's Latent Labor Force



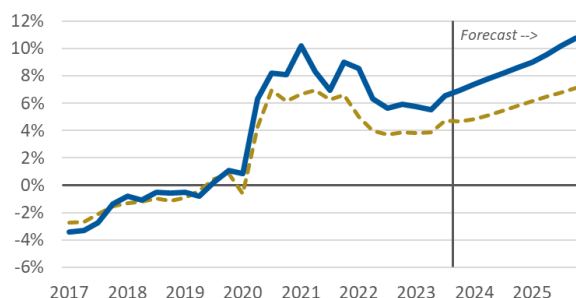
Source: Census, IPUMS-USA, Oregon Office of Economic Analysis

Productivity Boosts Economic Growth

Given the labor outlook, firms looking to expand will need to rely even more on capital investment in the years ahead. Faster productivity growth raises the speed limit of the overall economy. It also helps keep inflation in check, and can result in strong wage gains for existing workers. A key dynamic to increased investment is a tight labor market. When labor is scarce, and expensive, it provides a need and an incentive for firms to invest in labor-saving technologies and processes. Additionally the combination of the start-up boom, increased federal investment alongside private activity, and the potential for generative AI, productivity should be better in the years ahead.

Real GDP per Worker

Percent change since 2019 in U.S. and Oregon



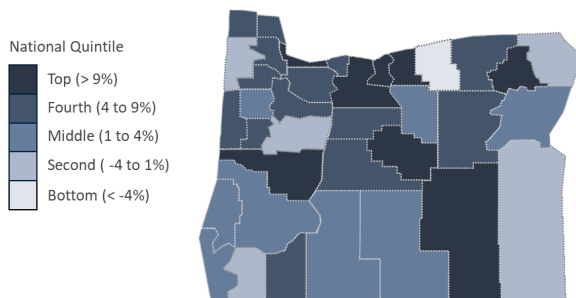
Latest Actual: 2023q3 | Source: BEA, BLS, S&P, Oregon Office of Economic Analysis

So far this cycle, Oregon has seen stronger productivity gains than the nation and the typical state. However recent revisions to state GDP have brought Oregon's gains closer to the pack, but still above average. While real GDP per worker is a crude measure of productivity, the better measure of state productivity produced by the Bureau of Labor Statistics is only available once per year. 2023 state estimates are due out in May, and we will have a better idea at that time of how exactly Oregon compares across states.

But for now, these gains are seen across the state. 28 of Oregon's 36 counties have seen faster productivity growth than the typical U.S. county nationwide. 10 Oregon counties, lead by Crook, are among the top

County Productivity

Percent change in real GDP per worker 2019-2022



Source: BEA, Oregon Office of Economic Analysis

quintile nationwide, meaning among the Top 20% for gains through 2022. Note that 2022 county level data is the most recently available information and was released in December.

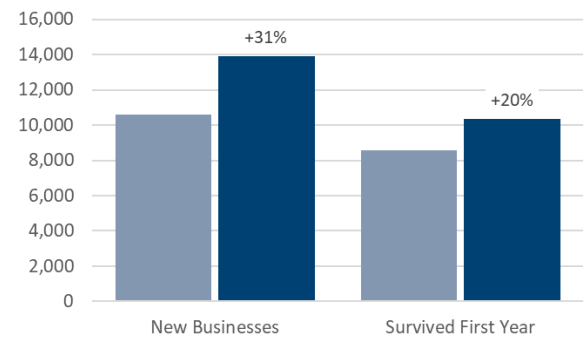
In addition to business investment in what economists call physical capital (generally plants, equipment, software etc) there are other types of capital. These include natural capital, financial capital, human capital, and social capital. Investment and growth among any of these types of capital should lead to stronger economic gains.

Another source of optimism on the outlook comes from the start-up boom during the pandemic. New businesses are key drivers of innovation as they are generally better able to bring new products, services, and efficiencies to the marketplace.

Since 2019, the number of new businesses has increased nationwide and here in Oregon and really has not slowed down. In terms of the outcome, even if the probability that any given new firm ultimately succeeds remains the same, having more ping pong balls in the hopper means the cumulative probability there are successes is higher today than before the pandemic start-up boom. The absolute number of business closures is rising as well, given the increase in start-ups, but the closure or failure rate, and the number of business bankruptcies remains tame. The net impact of the start-up boom is a macroeconomic tailwind and should continue in the years to come as the Millennials age into their peak-entrepreneurial years which are one's late 30s and early 40s.

Oregon New Business Survival

2017-2019 Average | 2022



Source: BLS, Oregon Office of Economic Analysis

Finally, as discussed in more detail in the September 2023 forecast¹, the combination of increased federal investment, and the more speculative impact of generative AI on white-collar jobs is likely to boost productivity in the years ahead. In particular for Oregon, the CHIPS and Science Act is expected to result in tens of billions of dollars of semiconductor investment in the state, supporting thousands of near-term construction jobs, and creating thousands of permanent jobs once the projects are complete. The challenge for the outlook today is that the semiconductor industry is in a cyclical downswing. Local industry job losses are mounting, even if the medium- and long-run outlook are positive. For now, our office is keeping those investments and growth in the forecast, but tracking actual employment numbers lower as the industry adjusts to current market and economic conditions.

Zero Migration, a Demographic Alternative Scenario

Our office has developed a demographic alternative scenario of what the state's economy, and public tax revenues may look like should migration not rebound as expected. What follows is a short summary of

¹ <https://digital.osl.state.or.us/islandora/object/osl%3A1015130/datastream/OBJ/view>

that scenario. You may find the full report in the December 2023 forecast, and a standalone copy on our website².

Historically migration has been the primary reason Oregon's economy has outpaced the typical state over time. However the bottom line impacts of the Zero Migration scenario are smaller than our office first anticipated. There are at least three main reasons why this appears to be the case.

The first reason is simply that the baseline population forecast is already weak from an historical perspective. Removing the modest population gains of less than one percent per year has less of an impact than if the baseline had population growth of two or three percent, like Oregon experienced in decades past.

The second reason is due to inflation and rising incomes and asset values for existing residents. While the state's overall population may decline slowly given there is no migration to offset the fact deaths outnumber births, total incomes and taxes paid will increase. However, those aggregate increases will be slightly slower given the lack of any underlying population gains, even as incomes per worker or per household will increase in the years ahead.

The third reason is one of timing, and focusing on the first decade of no net migration. Given the age demographics of migration to Oregon, and the fact that middle-aged Oregonians, and in particular late middle-aged Oregonians have the largest incomes, of which many are taxed at the highest rate, the economic and revenue impacts are likely to be greater in the second or third decade than in the first.

As such, seemingly small differences in any given year have little long-run implications for the trajectory of Oregon's economy or state revenues. However, like a snowball just starting to roll down a mountain, as these small annual changes accumulate, so too do the long-run differences between the baseline outlook and the world in which migration does not return to the state.

Alternative Scenarios

The baseline outlook is our forecast for the most likely path for the Oregon economy. As with any forecast, however, many other scenarios are possible. The alternative scenarios below are not the upper or lower bounds to all outcomes, but rather are two plausible scenarios modeled on realistic assumptions. For the revenue implications, see page 20.

Boom/Bust Scenario: Moderate Recession

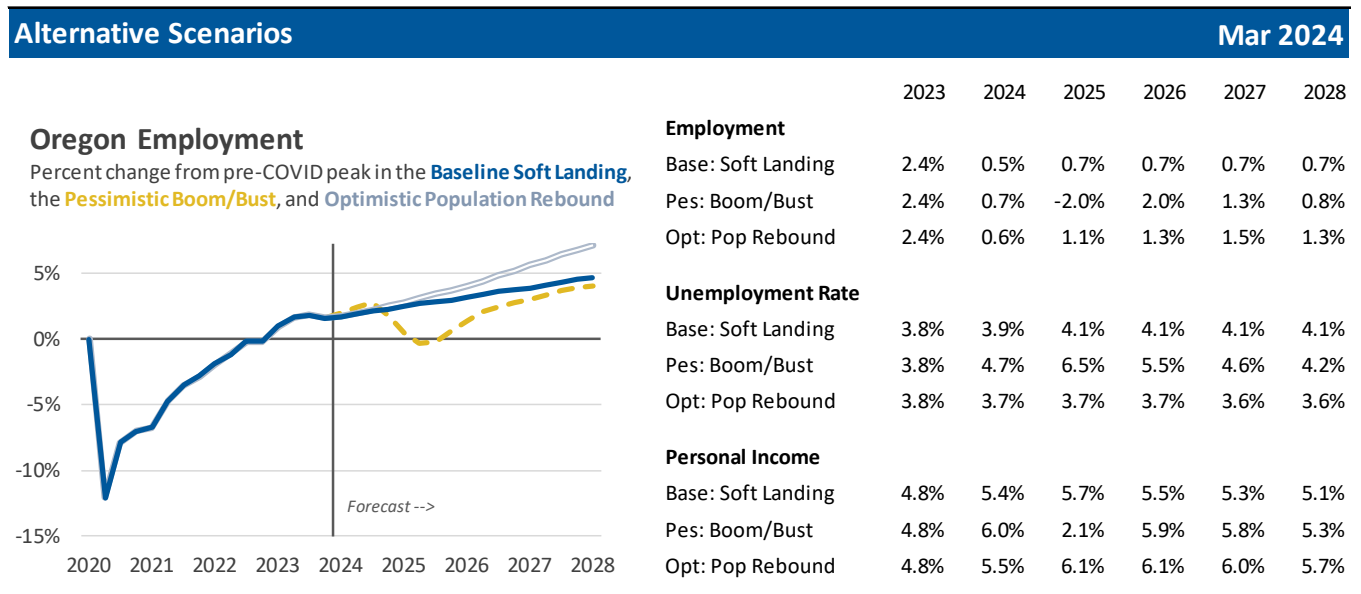
Inflation could rebound and remain above the Federal Reserve's target. As such, it is possible will need to raise interest rates further or hold them higher for longer, to cool the economy. The combination of high inflation, high interest rates, and slowing economic growth is problematic. Ultimately, the boom could turn into a bust later this year.

² <https://oregoneconomicanalysis.com/2024/01/10/report-zero-migration-a-demographic-alternative-scenario/>

For now, the most likely recession scenario is for a moderate sized downturn. There are no clear imbalances in the economy, household finances remains in good shape, and firms will be reluctant to let go of workers given the structurally tight labor market.

The moderate recession scenario is for a three quarter decline in employment totaling 2.9 percent, followed by a six quarter recovery period, more in line with the so-called jobless recoveries following the 1990 and 2001 cycles, compared to the faster recoveries in the 1950s, 1960s, and 1970s.

The three percent decline in employment is a loss of nearly 60,000 jobs. No industry is spared, but goods-producing ones see relatively larger losses at 4.5 percent, while services see slightly fewer losses at 2.8 percent, and the somewhat more stable public sectors experiences job losses of 2.3 percent. The unemployment rate increases to nearly 7 percent by early 2025. Nominal income does not fall outright but growth slows considerably. Next biennium, in 2025-27, total personal income in Oregon is 2.6 percent below the baseline.



Optimistic Scenario: Population Rebound

Pandemic migration patterns differ from recent history substantially. There is good reason to think some of those changes will remain in the decade ahead, particularly when it comes to the combination of housing affordability and working from home resulting in lower migration to Oregon than in decades past. However, such a slow growth baseline does leave upside risks. What would happen if Oregon were to see a typical cyclical rebound in migration in the years ahead?

In the population rebound, Oregon’s economy grows faster than in the baseline. A larger population increases local consumer demand, and boosts the labor force from which Oregon businesses can hire and expand at a faster rate. By 2033, Oregon’s employment is 71,000 higher than in the baseline, and total personal income is 3.3 percent higher than in the baseline.

Oregon's Agricultural Economy

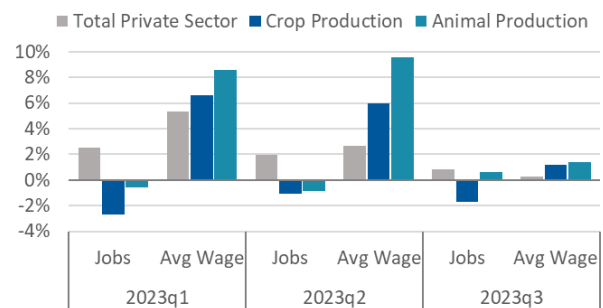
The Oregon Legislature passed HB 4002 (2022) which establishes maximum hour and overtime compensation requirements for agricultural workers. The law went into effect starting at the beginning of 2023. Moving forward, our office will analyze and monitor the economic and labor market data to assess any impacts from the law. Our office will work to incorporate these changes, if any, in the broader context of the state's agricultural economy. It will take some time before data is available to assess any impacts.

Even so, our office has been highlighting the importance of agriculture to the state's economy since the law's passage. We have dug into farm employment, income, and sales at the state and county level, in addition to international exports. Additionally we discussed how ag fits in with the broader food economy in the state and nation, and also the outlook for consumer spending on food and price forecasts related to revenues and costs. Note that the 2022 Census of Agriculture data will be released on February 13, 2024. This is the most detailed source of data at the state and county level and is done every five years. Our office will provide a summary of the 2022 Ag Census in the next forecast.

In recent quarters we have highlighted QCEW data, the nearly real-time data coming from businesses submitting records for unemployment insurance purposes. Agricultural data is very seasonal given harvests, so getting a clear handle on trends is a bit more challenging. However, our office will report the latest information as it become available. As of this forecast, there are now three quarters of 2023 Oregon data and two quarters of US (all states) data. The Bureau of Labor Statistics is set to release third quarter data for all states on February 21, 2024.

Oregon Labor Market Changes

Year-over-year percent change



Data: QCEW | Source: Oregon Employment Department, Oregon Office of Economic Analysis

For now, our office will focus on high level changes in terms of employment and wages on a year-over-year basis. Here in Oregon, employment trends within agriculture are weaker than the broader economy in 2023. Both crop production and animal production employment has declined, while the private sector overall is growing. In terms of wage gains, Oregon wages are rising in a tight labor market, but average wages in both crop and animal production are far outstripping the statewide increases. At first blush, this pattern of weaker employment and strong wage gains likely fits the expected patterns of what the impact of the new law would be.

Keep in mind that this is still preliminary data. It is far from enough information to make any real assessments of how the law is impacting the state economy. It is also at a high level, using a simple year-over-year comparison. Further analysis looking at the number of hours worked per employee is needed to better gauge the impacts. That data will not become available for some time.

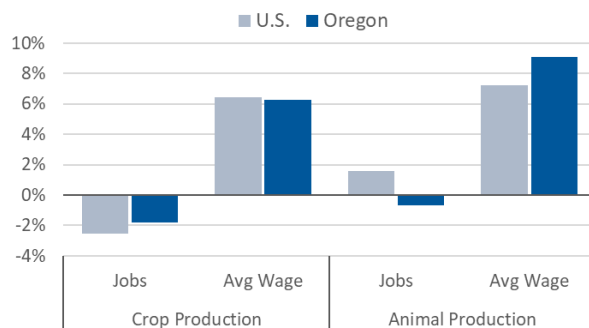
Additionally, these same general patterns are seen nationally as they are locally, at least for the first half of the year (January through June). Across all states, agricultural employment is lagging the broader economy while wages are rising faster. As such, without further, detailed analysis, it is hard to say whether Oregon’s experiences are due to the new law, or more a reflection of broader industry trends given commodity prices and the like.

Moving forward, our office will work with other state agencies to gather and analyze the available data.

Future quarterly forecasts will include updates to the underlying ag economy, when available, and any such analysis of the impacts of the new law.

Agricultural Labor Market

Percent change 2022H1 to 2023H1



Data: QCEW | Source: BLS, OR Emp Dept, OR Office of Econ Analysis

Longer-Term Forecast Risks

The economic and revenue forecast is never certain. Our office will continue to monitor and recognize the potential impacts of risk factors on the Oregon economy. Although far from comprehensive, we have identified several major risks now facing the Oregon economy in the list below:

- **U.S. Economy.** While Oregon is usually more volatile than the nation overall, the state has never missed a U.S. recession or a U.S. expansion. In fact, Oregon’s business cycle is perfectly aligned with the nation’s when measuring peak and trough dates for total nonfarm employment.
- **Housing Affordability.** New housing supply has not kept pace with demand in either the ownership or rental markets. Oregon has underbuilt housing by 140,000 units in recent decades³. Our office will update the state’s projected housing need this year. However, to the extent home prices and rents rise significantly faster than incomes, it is a clear risk to the outlook. Worse housing affordability hurts Oregonians as they need to devote a larger share of their household budget to the basic necessities. Furthermore, worse affordability may dampen future growth as fewer people can afford to live here, lowering net in-migration, and the size of the labor force in the years ahead.
- **Global Spillovers.** The international list of risks seems to change by the day. Right now there are ongoing wars in Europe and the Middle East, and the risk of war in Southeast Asia has been uncomfortably high in recent years. Longer-term concerns regarding commodity price spikes in Emerging Markets, or the strength of the Chinese economy – the top destination for Oregon exports – are top of mind.
- **Federal Fiscal Policy.** Changes in national spending impact regional economies. In terms of federal revenues, spending, and employment Oregon is generally in the middle of the pack across states. Oregon does see larger impacts related to land management and forest policies, including direct federal employment. Oregon ranks below average in terms of military-dependent industries and lacks a substantial military presence within the state.

³ <https://www.oregon.gov/ohcs/about-us/Documents/RHNA/RHNA-Technical-Report.pdf>

- Climate and Natural Disasters. While the severity, duration, and timing of catastrophic events like earthquakes, wildfires, and droughts are difficult to predict, we know they impact regional economies. Fires damage forests with long-term impacts, and short-term disrupt tourism. Droughts impact our agricultural sector and rural economies to a greater degree. Whenever Cascadia, the big earthquake, hits, we know our economy and infrastructure will be crippled. Some economic modeling suggests that Cascadia's impact on Oregon will be similar to Hurricane Katrina's on New Orleans. Longer-term issues like the potential impact of climate change on migration patterns are hard to predict and generally thought to be outside our office's forecast horizon. Even so, it is a reasonable expectation that migration flows remain strong as the rest of the country becomes less habitable over time. The fact that private insurance markets in places like Florida (hurricanes and flooding) and California (wildfires) are now pricing in climate risks, means that climate migration could occur sooner than previously expected.
- Initiatives, Referendums, and Referrals. Generally, the ballot box and legislative changes bring a number of unknowns that could have sweeping impacts on the Oregon economic and revenue picture.

Extended Outlook

Oregon typically outperforms most states over the entire economic cycle. This time is no different, however the expectations are that the relative growth advantage may be a bit smaller than it has been historically. The primary reason being slower population, and labor force growth than in decades past. Our office is a bit more bullish on Oregon's economic and population growth than S&P Global is. Right now S&P has Oregon's growth from 2023 to 2028 right in the middle of the pack nationally. Their forecasts rank Oregon's real GDP growth to rank 24th fastest among all states, population gains are the 25th fastest, and employment growth ranks 26th fastest.

Over the extended forecast horizon our office has identified four main avenues of growth that are important to continue to monitor: the state's dynamic labor supply, the state's industrial structure, productivity, and the current number of start-ups, or new businesses formed.

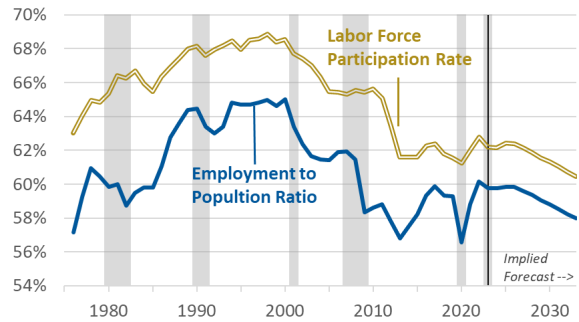
Labor Supply. Oregon has typically benefited from an influx of households from other states, including an ample supply of skilled workers. Households at least used to continue to move to Oregon even when local jobs are scarce, as long as the economy is equally bad elsewhere, particularly in California. Relative housing prices also contribute to migration flows in and out of the state. For Oregon's recent history – data available from 1976 – the labor force in the state has both grown faster than the nation overall and the labor force participation rate has typically been higher.

The good news today is that Oregon's labor force has never been larger, and the labor force participation rate has been higher than it was before the pandemic began, at least until the last handful of months of data. Even in this sometimes noisy, and unrevised data, the strength of Oregon's labor market is clear.

Moving forward, overall labor force participation rates will decline, simply due to the aging of the population. As more Baby Boomers enter into their retirement years, the share of all adults working or looking for work will fall as a result. As such, comparing Oregon's participation rates against a demographically-adjusted measure is important. Here, too, the current strength of the Oregon's labor market is evident, and encouraging.

Oregon's Labor Market

Share of the population 16 years and older **with a job** or **looking for work**



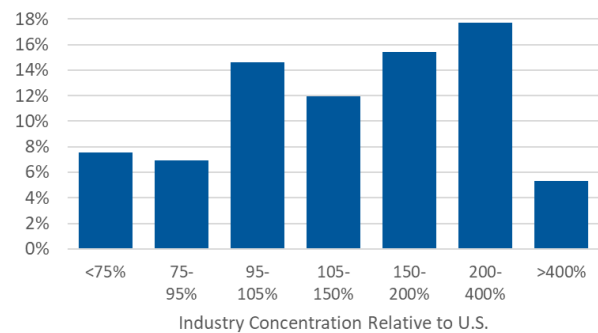
Latest Data: 2023 | Source: BLS, Oregon Office of Economic Analysis

The challenge moving forward is twofold. First, is overall population growth and whether that rebounds as expected in the years ahead. Second, whenever the next recession (or two) does come, maintaining a high participation rate and not seeing larger numbers of discouraged workers drop out of the labor force like they did following both the dotcom and housing busts. It was only once the economy became strong again in the late 2010s and early 2020s have some of those losses begun to be regained.

Industrial Structure. Oregon's industrial structure is very similar to the U.S. overall. However, Oregon's manufacturing industry is relatively larger, and weighted more toward semiconductors and wood products, compared to the nation which is more concentrated in transportation equipment (aerospace, and automobiles).

Oregon's Industrial Structure Outlook

Employment growth by industry concentration, 2022-2032



Source: BLS, Oregon Employment Department, Oregon Office of Economic Analysis

However, industries like timber and high-tech, which have been Oregon's strength in both the recent past and historically, are now expected to grow the slowest moving forward. Productivity and output from the state's technology producers is expected to continue growing quickly, however while employment will increase with expansions and the CHIPS Act, it will not increase as much as investment and sector productivity. Similarly, the timber industry remains under pressure from both market based conditions and federal regulations. Barring major changes to either, the slow growth to downward trajectory of the industry in Oregon is likely to continue.

With that being said, certainly not all hope is lost. Those top industries in which Oregon has a local concentration at least twice the national average comprise approximately 4 percent of all statewide employment. Slower growth moving forward is not a weight, but rather more of a lack of a boost.

Many industries in which Oregon has a larger concentration than typical state are expected to perform quite well over the coming decade. These industries include management of companies, food and beverage manufacturing, published software along with some health care related firms.

The state's real challenges and opportunities will come in industries in which Oregon does not have a relatively large concentration. These industries, like consulting, computer system design, financial investment, and scientific R&D, are expected to grow quickly in the decade ahead. To the extent that

Oregon is behind the curve, then the state may not fully realize these gains if they rely more on clusters and concentrations of similar firms that may already exist elsewhere around the country.

Capital and Productivity. Ultimately, the economy's industrial structure combined with capital will result in increasing productivity. Higher productivity allows firms to produce and sell more products, and pay higher wages to its workers. Capital can come in many different forms including financial, natural, physical, human, and social. All can help raise firm productivity, benefiting the economy more broadly.

Today, the economy desperately needs better productivity, which has been sluggish this century. Early in the pandemic, productivity perked up as firms had to make due with reduced workforces at the same time consumer demand remained strong. However, as employment has rebounded, these productivity increases not entirely hold and eroded somewhat. The current outlook for productivity is more or less back to the pre-pandemic trend growth, although slightly above it. Increasing the stock and use of Oregon's capital would boost the economy overall. Increases in start-up activity, upcoming federal investment, and the potential of generative AI all point toward better productivity gains later this decade.

New Business Formation. New businesses are generally considered the primary source of innovation. New ideas, products, and services help propel future economic growth. Unfortunately in the decades leading up to the pandemic, start-up activity, while steady in level terms, was declining as a share of a growing economy. New businesses as a share of all businesses were at or near record lows in 2019. Employment at start-ups follow a similar pattern.

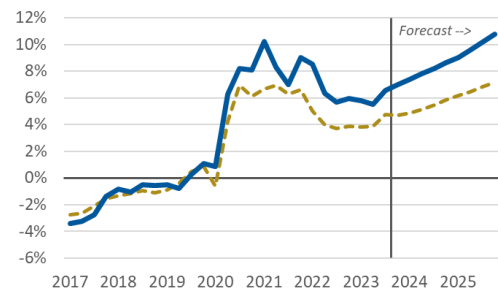
To the extent the lower levels of entrepreneurship were to continue in a post-pandemic world, and R&D more broadly is not being undertaken, slower productivity gains and overall economic growth is to be expected. However, to the extent that larger firms that have won out in today's marketplace are investing in R&D and making those investments themselves, then the worries about the number of start-ups today is overstated. It can be hard to say which is the correct view. That said, actual, realized productivity in the economy has been sluggish in recent decades.

Encouragingly, new business formation during the pandemic actually accelerated, stopping the long-run decline. New establishments continue to run at a higher level than in the year leading up to the pandemic. However, given the increased overall number of establishments, deaths or closures are now increasing as well simply due to the raw numbers, even if the death rate remains tame.

Looking forward, these gains provide some hope for future economic growth should some of these new firms bring new ideas, products, and efficiencies to market. Even if the per firm probability of success remains the same, having more ping pong balls in the lottery increases the overall probability that a few will survive and succeed tremendously.

Real GDP per Worker

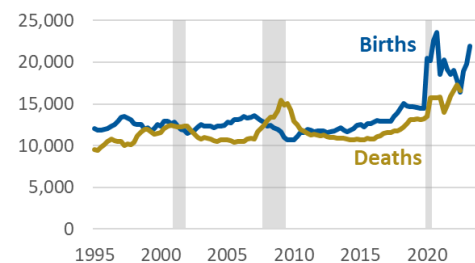
Percent change since 2019 in U.S. and Oregon



Latest Actual: 2023q3 | Source: BEA, BLS, S&P, Oregon Office of Economic Analysis

Oregon Economic Dynamism

Number of establishments



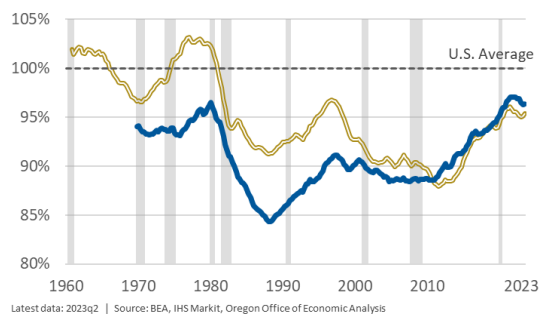
Data: 4 qtr sum | Latest: Births 2023q2, Deaths 2022q3
Source: BLS, Oregon Office of Economic Analysis

Oregon Income Relative to U.S. One long-standing concern for some policymakers and analysts had been Oregon's relatively low income and wage compared to the rest of the nation. Encouragingly, the strong economic growth last decade did translate into meaningful increases in Oregon's per capita income and average wage. Today Oregon's per capita income relative to the U.S. is at its highest point since the dotcom bust two decades ago, and the state's average wage is at its highest relative point since the timber industry restructured and the mills started closing in the early 1980s.

Oregon's median household income in recent years has reach historic highs, even after adjusting for inflation. More importantly, it now stands 1.2 percent higher than the U.S. overall as of 2022. In recent years, this marks the first time in more than 50 years that Oregonian incomes for the typical household or family are higher than the nation. The fact that the strong regional growth translated into more money in the pockets of Oregonians, and regained the ground lost decades ago is one of the most important economic trends in recent generations.

Oregon Income, Share of U.S. Average

Per Capita Personal Income | Average Wage



Median Household Income

Inflation-Adjusted 2022\$ for the United States and Oregon

