2023

ANNUAL U.S.
JOBS REPORT

Aspen Tech Labs | Job Market Pulse

Intro: A data-fueled look at today's job market

Welcome to our inaugural 2023 US Jobs Report, marking our first full-year analysis. In this report, we present a comprehensive overview of the U.S. job market, drawing insights from our expansive JobsIndex dataset, which aggregates daily vacancy information from more than 90,000 company career sites.

The report highlights a stabilization in the U.S. job market, following record-high job openings in 2022. Despite this, the labor market remains robust, with the number of open positions still above pre pandemic levels and median salaries, as indicated in job postings, increasing.

One clear signal was in **salary transparency**: around the country, more employers are disclosing pay in job listings – a big win for employees and for workplace equity.

Enough preamble; let's get into the data.

Topline Trends: Slight Dip in Postings in 2023

In 2023, a total of 131,000 US employers listed a collective 41.4 million unique jobs (Figure 1). While we don't have full year-over-year data for 2022 to offer a comparison, numbers from Indeed.com reported by WSJ offer a proxy: by those numbers, 2023 saw fewer total job listings than 2022 – but the year still outperformed many analysts' expectations.

You'll notice we're also giving another data point top billing: in 2023, about a **third of job postings included salary info**, a number we expect to tick up as more states' salary transparency laws come online in the coming years (see p. 13).

41.4M
Unique Active Jobs

- All job listings live anytime in 2023

131K
Unique Employers

- All employers that had at least one job listing in 2023

32.9%
Percent of Jobs w/ Salary

- Of the total jobs in 2023, these had salary info in the job listing

Figure 1: Total unique active jobs, unique employers, % jobs with salary (2023)

6.4M
Vacancies as of Jan. 9 2023

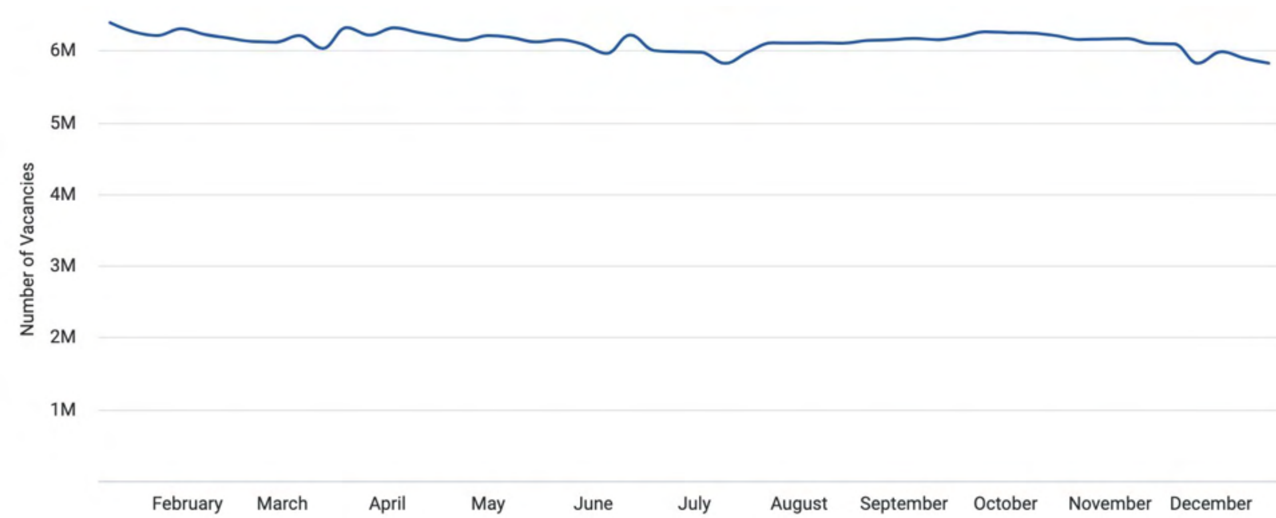
-8.8% (-564K)

5.8M
Vacancies as of Dec. 18 2023

Figure 2: Job postings in the US declined 8.8%, January – December 2023

From January to December, total vacancies decreased by 8.8 percent – less than what many economists expected, given [15-year high interest rates]() and other macroeconomic winds (Figure 2). Indeed, a two-year look at the WSJ numbers suggests that vacancies more or less leveled off starting in March (Figure 3).

Figure 3: U.S. Vacancy Trend
Weekly vacancy totals



Despite pressures in the larger economy, US employers added vacancies at a rate of about 694,000 per week, meaning about 11.3 percent of any week's jobs were brand-new (Figure 4).

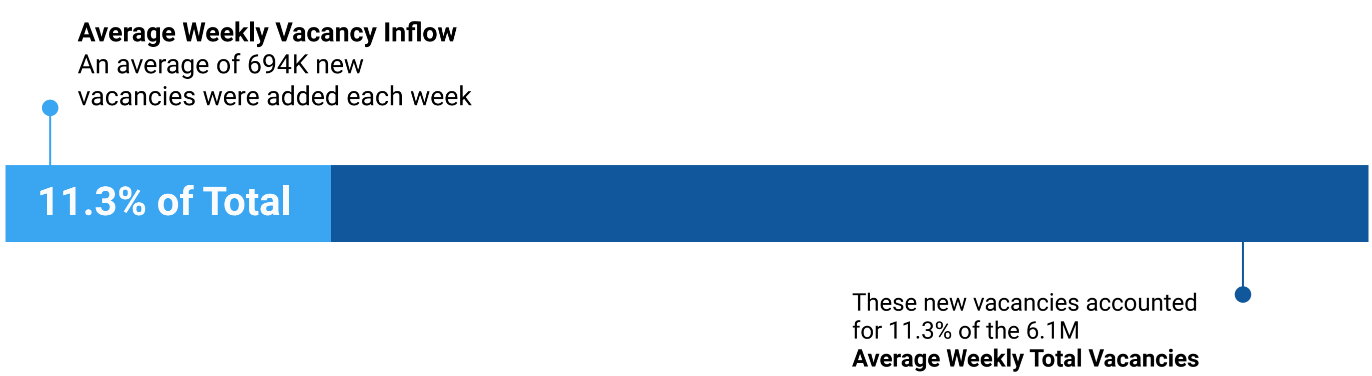


Figure 4: US employers listed an average of 694k new jobs each week

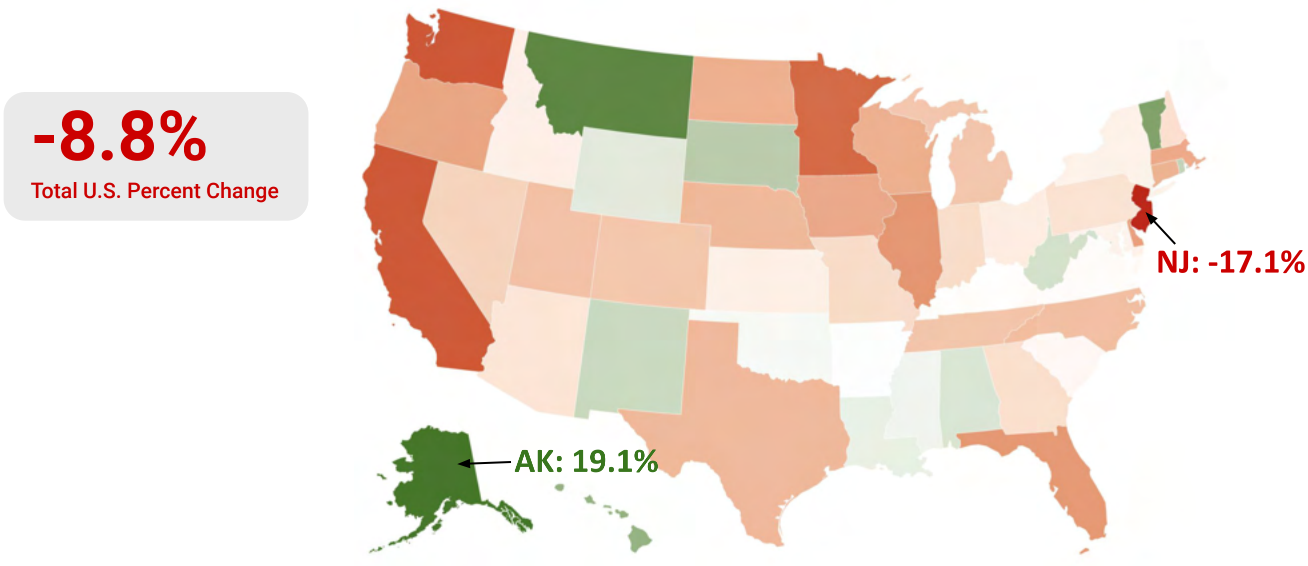
These headline numbers support the refrain we've heard about the labor market all year: that it's "surprisingly" strong, given other economic indicators. The most interesting takeaways from 2023's end-of-year report, though, happened below the surface. Let's dive in to see more.

Sneak preview: Our data uncovered a few key opportunities for employers – look for the ✨ below to see what they are.

Biggest Changes in Vacancies by Geography

While job postings overall were down slightly from January to December, there were significant variations among geographies and industries. First, the geographic breakdown.

Figure 5: Vacancy Percent Change by State



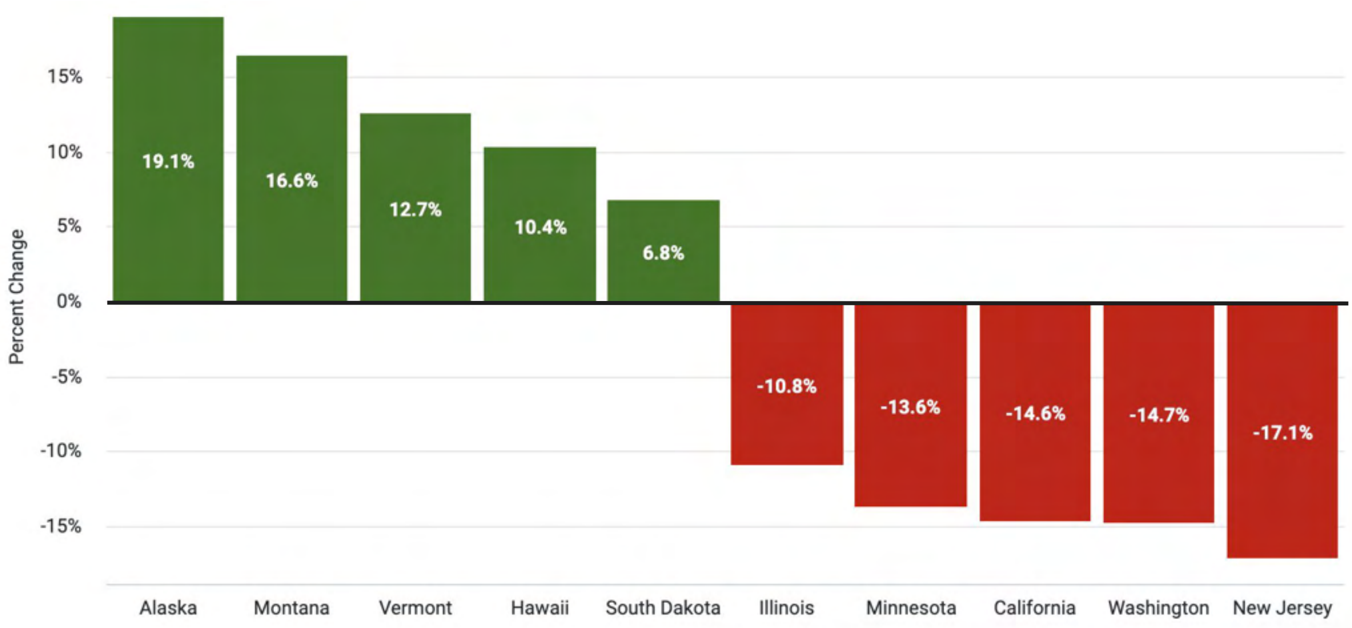
Of the 13 states that saw increases in job listings during 2023, Alaska had the largest percent increase, at 19.1 percent. Montana (16.6 percent), Vermont (12.7 percent), Hawaii (10.4 percent), and South Dakota (6.8 percent) round out the top five. Notably, these are all small states by total population (Figure 5).

New Jersey saw the largest decrease in listings last year, with a 17.1 percent decline; the Garden State ended the year with [unemployment at 4.7 percent]() – a full percentage point higher than the nation as a whole.

Also in the top five for job posting decreases: Washington (-14.7 percent), California (-14.6 percent), Minnesota (-13.6 percent), and Illinois (-10.8 percent) (Figure 6).

Arkansas, Kentucky, Maine, Virginia, and Oklahoma were the states with the smallest percent change in vacancies (all under one percent change; shown as white in Figure 5).

Figure. 6: Top and Bottom Five States by Vacancy Percent Change



Worth noting: both California and Washington had salary transparency laws take effect last year. When Colorado's mandate took effect in 2021, many remote jobs were open to employees "in any state except Colorado," presumably so employers could skirt the state's requirement to publish salary ranges.

However, our research doesn't suggest that something similar contributed to the posting decreases in California and Washington this year, in part because of the [decline of remote work](#) since 2021.

For insight into top increases and decreases at the local level, see Figure 7.

452
MSA's saw an increase in vacancies

461
MSA's saw a decrease in vacancies

Figure 7: Percent Change by Metro
Only showing MSAs with greater than 250,000 people

MSA - Largest Percent Growth	Percent Change
Anchorage, AK	28.1%
Tuscaloosa, AL	25.3%
Charleston, WV	25.1%
Syracuse, NY	23.7%
Gainesville, FL	20.7%
Tallahassee, FL	19.4%
Albany-Schenectady-Troy, NY	17.8%
Lynchburg, VA	16.4%
Waco, TX	14.4%
Baton Rouge, LA	14.3%

MSA - Largest Percent Decline	Percent Change
Stockton-Lodi, CA	-24.1%
Trenton-Princeton, NJ	-23.8%
Vallejo, CA	-23.7%
Scranton--Wilkes-Barre, PA	-22.3%
Fargo, ND-MN	-21.5%
Modesto, CA	-19.0%
San Jose-Sunnyvale-Santa Clara, CA	-18.7%
Tampa-St. Petersburg-Clearwater, FL	-18.4%
San Francisco-Oakland-Fremont, CA	-17.8%
Los Angeles-Long Beach-Anaheim, CA	-17.6%

Biggest Changes in Vacancies by Industry (ONET Category)

Industry-specific changes in job listings in 2023 won't be perplexing to those who followed the news last year (with one exception).

Among the professions that saw the largest decreases in job openings were computer and mathematical roles, down 17.8 percent (refresh your memory about 2023's tech layoffs if it's been a while) and production occupations, down 13.7 percent (Figure 8). Of less obvious provenance (to us, anyway): the decline in building and grounds cleaning listings, which dropped 16.5 percent in 2023. If you have any insight on what might be going on here, we'd love to hear it.

Figure 8: Annual Percent Change by ONET Major Groups

Excluding groups with less than 30,000 end

Major Group Decreases

- ➔ Production Occupations: **-13.7%**
- ➔ Building and Grounds Cleaning: **-16.5%**
- ➔ Computer and Mathematical: **-17.8%**

Major Group Increases

- ➔ Legal Occupations: **+12.1%**
- ➔ Transportation and Material Moving: **+1.1%**

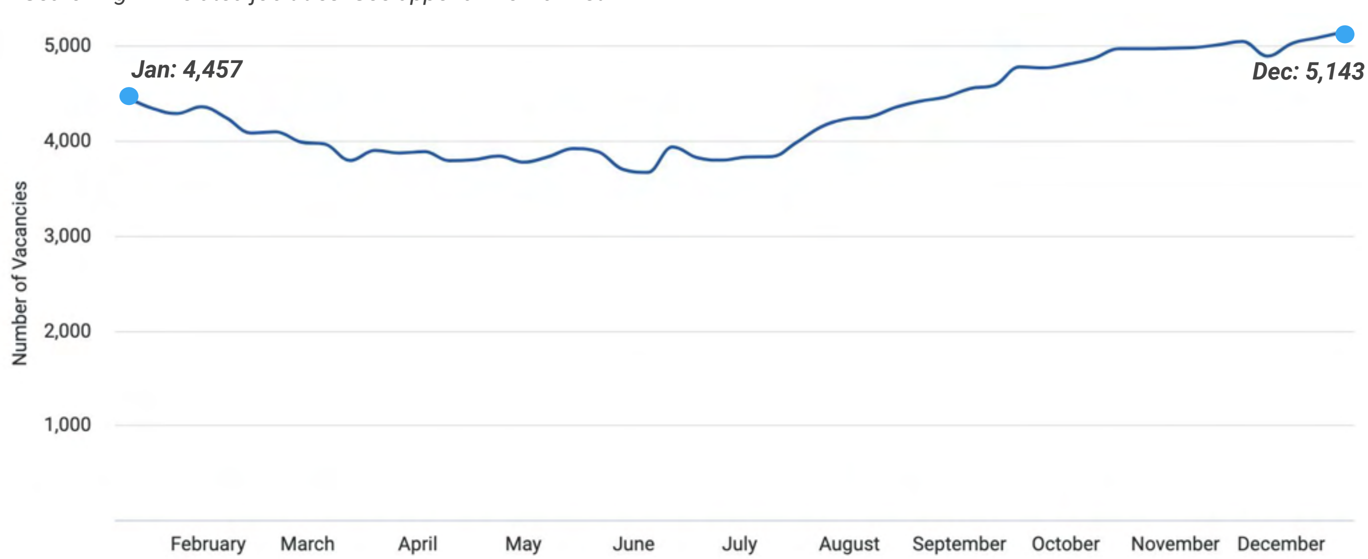
Only two ONET groups saw increases from January to December: legal occupations, up 12.1 percent, and transportation and material moving, up 1.1 percent.

The former figure validates research from Robert Half conducted in the first half of 2023: [97 percent of law firms] reported difficulties finding skilled professionals. Also of note: many [attorneys raised rates in 2023], likely both a response to increased demand for services which was likely a driver of increased demand for workers.

As for individual roles, three data points stood out to us. First, demand for jobs with “AI” in the title rose throughout the year (Figure 9), despite the tech slowdown. There were 4,457 open listings at the start of the year and 5,143 at the end, a 15% increase. Some companies are offering as much as $900,000 to hire top talent and the average salary for AI positions is at $180,000 - 3.3 higher than the national figure. We expect this trend to continue into 2024.

Figure 9: A.I. Vacancy Trend

Searching A.I. related job titles. See appendix for full list.



The second data point of note is that the job title that saw the greatest percentage growth last year was **merchandiser**, with a 40.1 percent increase in listings (Figure 10). What might that mean? One possible explanation: the rise of the merchandiser represents retailers' evolving efforts to cope with ongoing supply chain challenges.

Early in the pandemic, many retailers were willing to pay anything to keep stores stocked; now, consumer spending has shifted toward experiences, so sky-high investments in stocking shelves may not pay off. Instead, retailers may be investing in strategy – exactly the kind of work a merchandiser can do.

The final data point is the most compelling: the most in-demand job by total vacancies in 2023 was registered nurse, with a whopping 3 million listings during 2023. This is notable in part because the US only employed a total of 3.1 million nurses in 2022; however, 44 percent of those were agency roles. This speaks to the ongoing nursing shortage (many employers lean on agencies because they struggle to find full-time staff).

Still, there were 1.7 million open nursing roles at direct employers last year (Figure 11). Also of note: fully half of nurses have a part-time job or side hustle in addition to their nursing work, some in the same industry.

2023

#1 Job

By largest growth

Merchandiser

Growth: +40.1%

Total Jobs: 341K

Top Employer: Driveline

Figure 10: Job openings for merchandisers jumped by 40.1%

2023

#1 Job

By total vacancies

Registered Nurse

Total Jobs: 1.7M

Growth: -13.4%

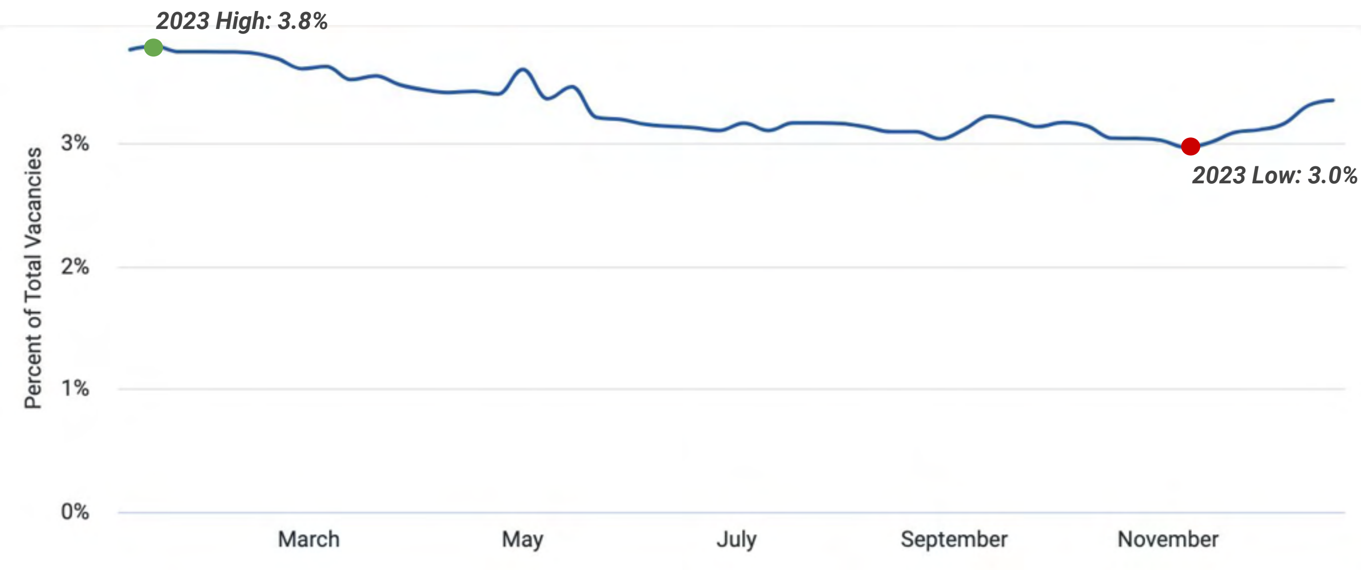
Top Employer: HCA Healthcare

Figure 11: There were 1.7 million direct employer jobs listed for registered nurses in 2023

Remote Work Ticks Down (But Presents a ✨Major Opportunity✨ for Employers)

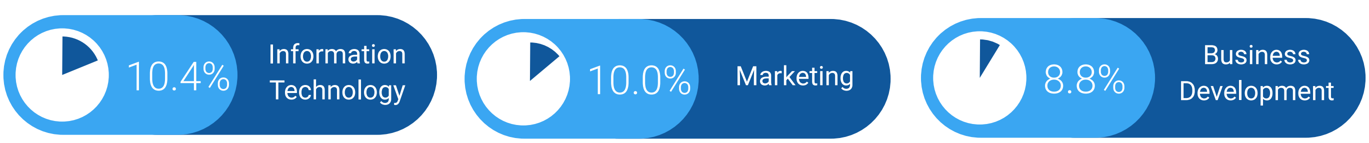
Remote vacancies peaked at 3.8 percent of all listings in January 2023 and bottomed out at 3.0 percent in November. There was a slight uptick by year's end; all told, remote job openings dipped about 11 percent during the year (Figure 12).

Figure 12: Remote Vacancies as Percentage of Total Vacancies Trend



Among the most common types of remote roles are those in IT (10.4 percent of all remote postings), marketing (10.0 percent), and business development (8.8 percent) (Figure 13). While remote work is here to stay, there has been a slight shift back to the office.

Figure 13: Categories with Most Remote Vacancies
Shown as percentage of total vacancies that are remote



The reality is more complicated.

For example, recently published research from the University of Pittsburgh found that Fortune 500 companies that mandated return to office (RTO) did not see any improvement in stock performance or company value following the RTO. At the crux of the research: while employees may have been marginally more productive in office, the costs of bringing them back (rent, parking, catering, etc.) canceled out any gains from that increased productivity.

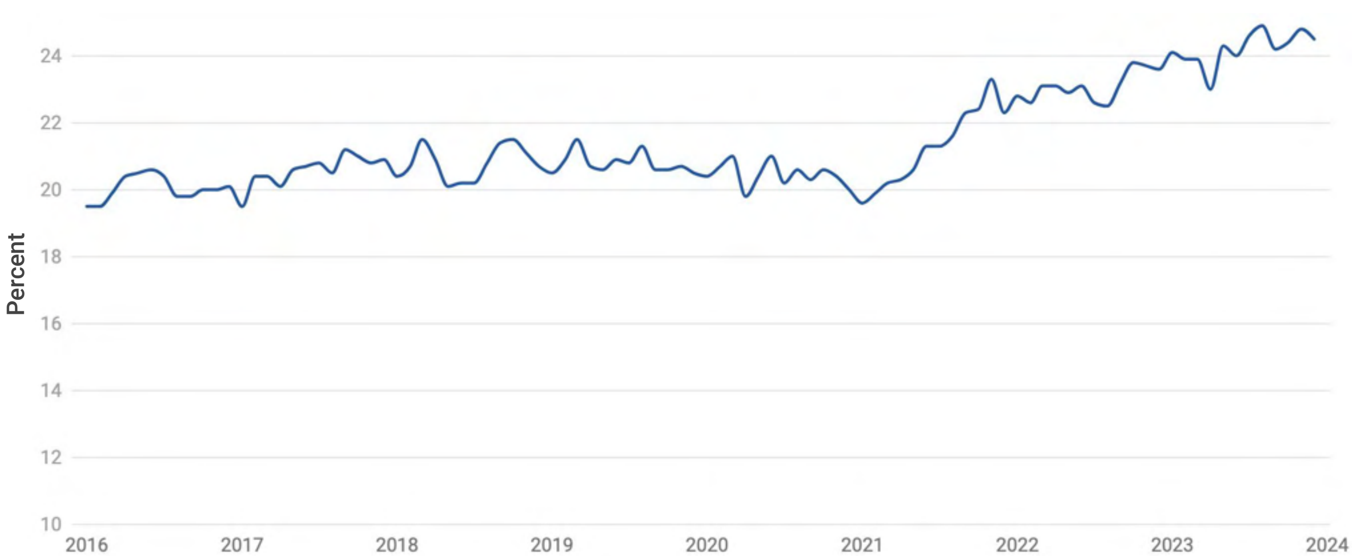
And there's even more to the story. Not acknowledged in the University of Pittsburgh study is the ongoing COVID-19 pandemic (i.e., the reason remote work became so popular in the first place). The WHO recently reminded us that COVID-19 is still considered a pandemic; as of mid-January, the US is experiencing its second-highest surge of cases ever.

Why does all of this matter for RTO? Mitigations (like masking, testing, and vaccination requirements) are gone in most of the country, and few organizations ever undertook bigger-picture mitigations like upgrading air filtration to remove viral particles. Meantime, 10 percent of those who get COVID go on to have long covid – a chronic disease that can be debilitating that has no current known treatments. Risk of long covid increases with every reinfection.

RTO policies that don't mitigate the spread of COVID set us up for a much more disabled – and less productive – workforce. In fact, that reality is already here: data from the St. Louis Fed shows that the portion of the US workforce with a disability has jumped sharply since the pandemic began in 2020 (Figure 14).

Figure 14: Labor Force Participation Rate

With a disability, 16 years and over



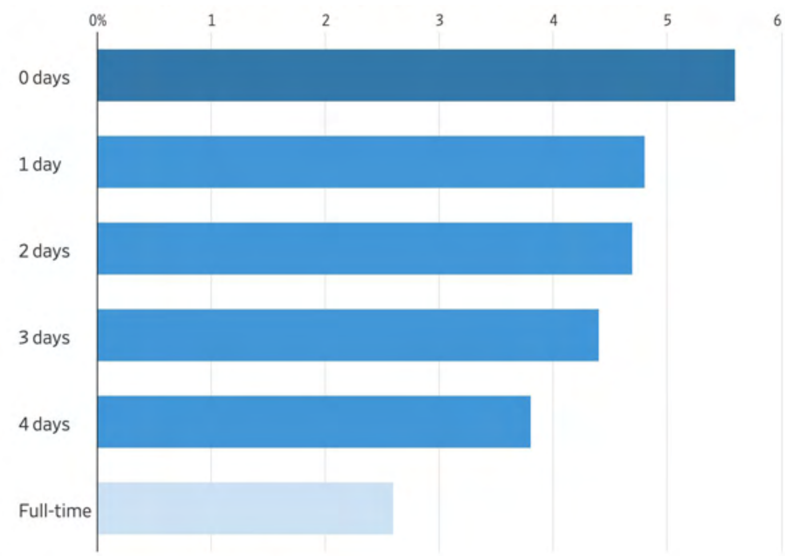
Source: U.S. Bureau of Labor Statistics

It's not all doom and gloom, however. Remote work can offer immediate, short-term benefits to employers in addition to helping them preserve the health of their workers for the short and long term.

- Among workers who currently have hybrid roles, 32 percent would take a pay cut to be fully remote. The average pay cut they'd accept is **18 percent**.
- Workers currently in an office full time view hybrid accommodations as equal to an eight percent pay increase.
- Employers that have mandated RTO are growing more slowly than their fully remote counterparts: 2.6 percent staffing increases compared with 5.6 percent increases for fully remote organizations (Figure 15).

Figure 15: Staffing growth by days required in office

Change in May from a year earlier



Source: Scoop Technologies, People Data Labs

✨**The takeaway (and opportunity)** ✨: Health concerns aside, remote work may enable employers to secure top talent for less money, without sacrificing productivity. It may also be key to growing in an RTO world where remote work is still wildly popular.

Considerable Variation in Vacancy Duration

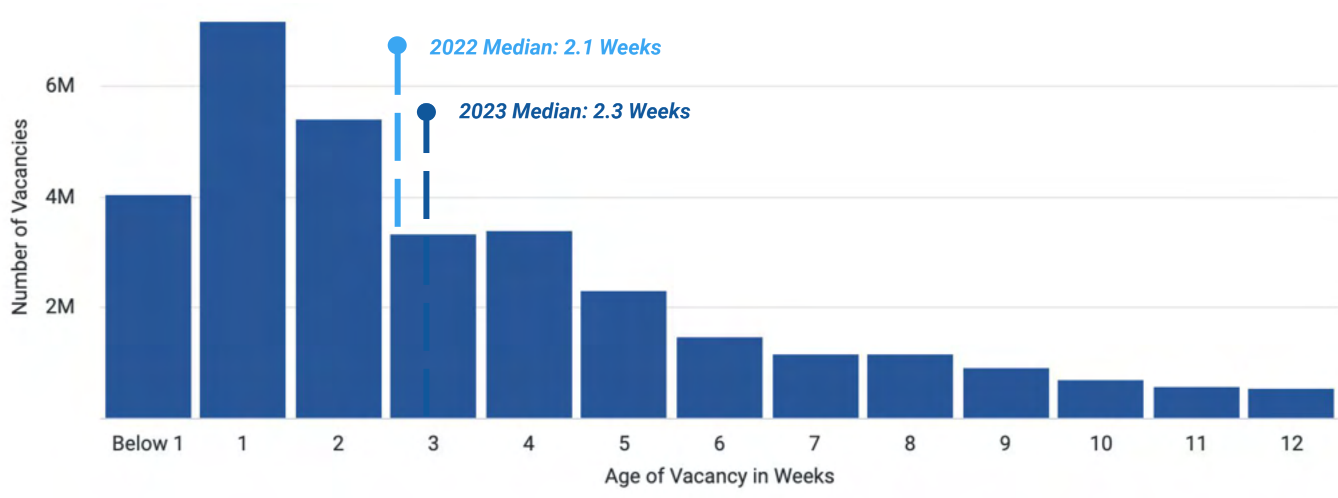
The median time to fill a job in 2023 was 2.3 weeks (Figure 16). In Q4 of 2022, it was slightly lower, at 2.1 weeks (note: our historical data does not go further back than Q4 2022). Maybe most interesting about our vacancy duration data, though, is how much variation there is.

For example:

- 11.3% of jobs were filled in less than one week
- 20.1% were filled in one week
- 9.4% were open for 13 weeks or more

Figure 16: Distribution of Vacancy Duration in Weeks

Data from all of 2023. Only Q4 2022 in 2022 median calculation



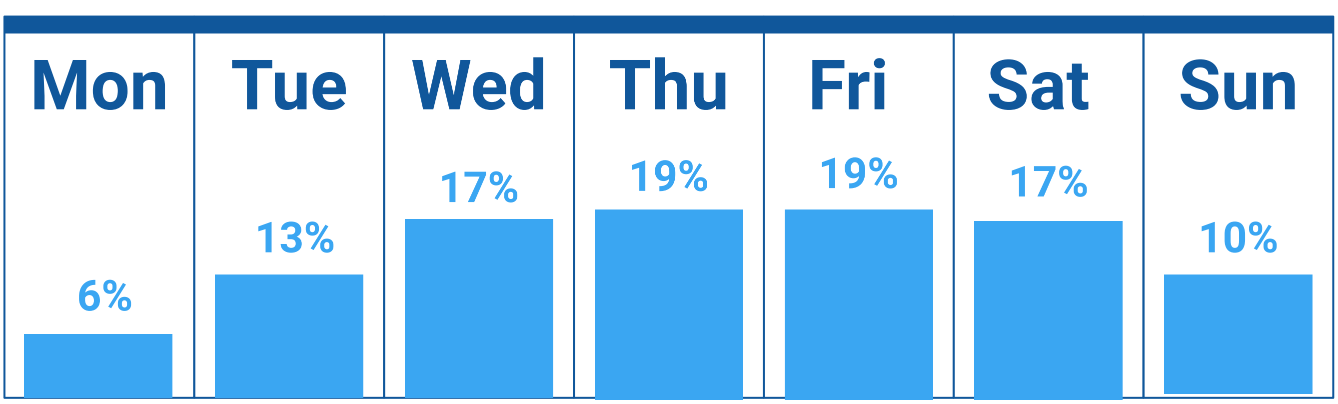
The extreme ends of this data (with nearly a third of jobs filled within a week and another 10 percent languishing for months) hint at the uneven nature of the current labor market. While persistent shortages plague some industries ([healthcare](), [manufacturing]()), layoffs in other sectors (notably tech) mean a likely flood of candidates for open positions.

Regardless of your industry, though, here's a useful tidbit if you're looking to attract more qualified applicants to your job postings: ✨try posting open jobs on a Monday. ✨

Only six percent of jobs are posted on Mondays, meaning new posts that day may have less competition for eyeballs (Figure 17).

Figure 17: Breakdown of Job Created Date by Day of Week

Data from all of 2023. All created dates in Eastern Time



Salary Transparency Rose 38.3% in 2023

Just 24.0 percent of job postings included salary data at the start of 2023, but 33.2 percent did by the end – an increase of 38.3 percent (for reference: as recently as April 2022, a mere 7.8 percent of job postings had salary info!). The rise was driven largely by salary transparency requirements taking effect in California, Washington, and New York (Figures 18 and 19). Unsurprisingly, transparency rates are higher among states with disclosure laws (Figure 20).

24.0%
Percent of Vacancies w/ Salary as of Jan. 9

38.3% (9.2 pts.)

33.2%
Percent of Vacancies w/ Salary as of Dec. 18

Figure 18: Salary transparency in US job postings rose 38.2% in 2023

Figure 19: Salary Transparency Legislation Effective Year

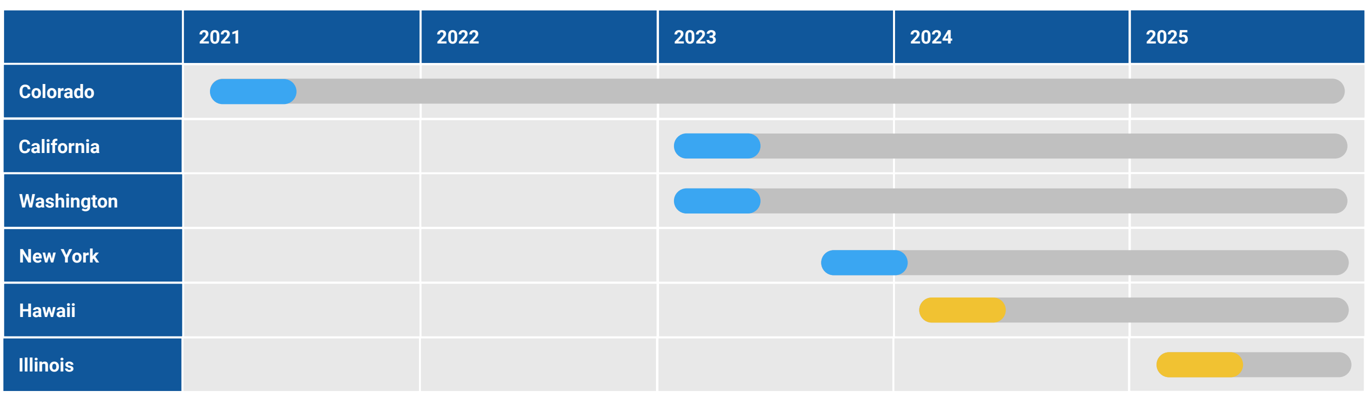


Figure 20: Salary Transparency Trend by State

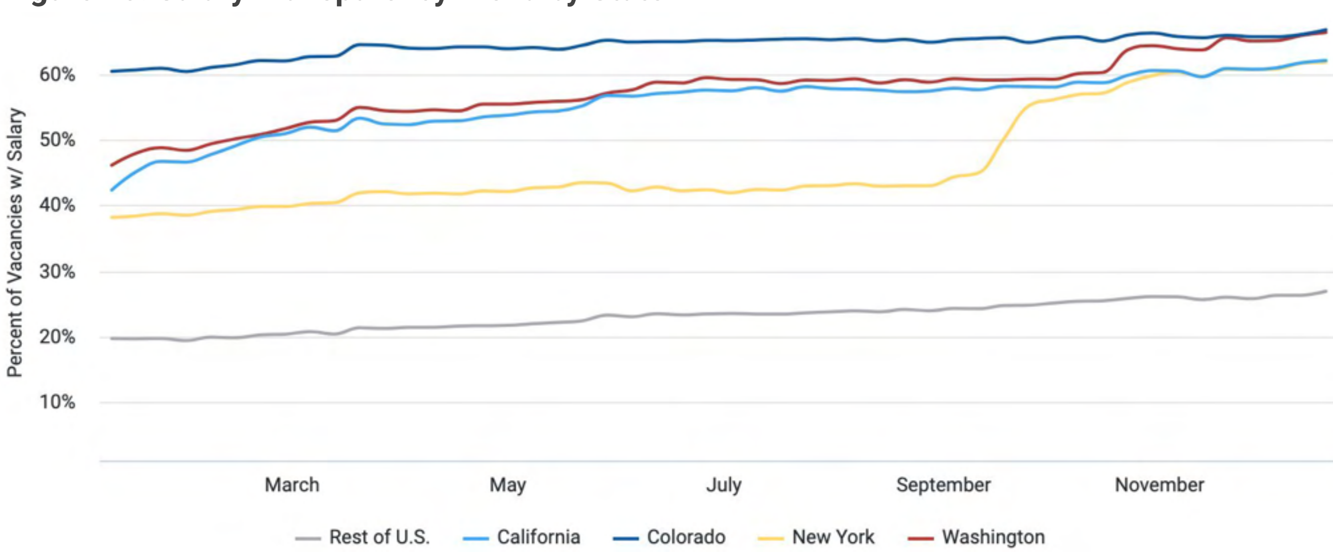


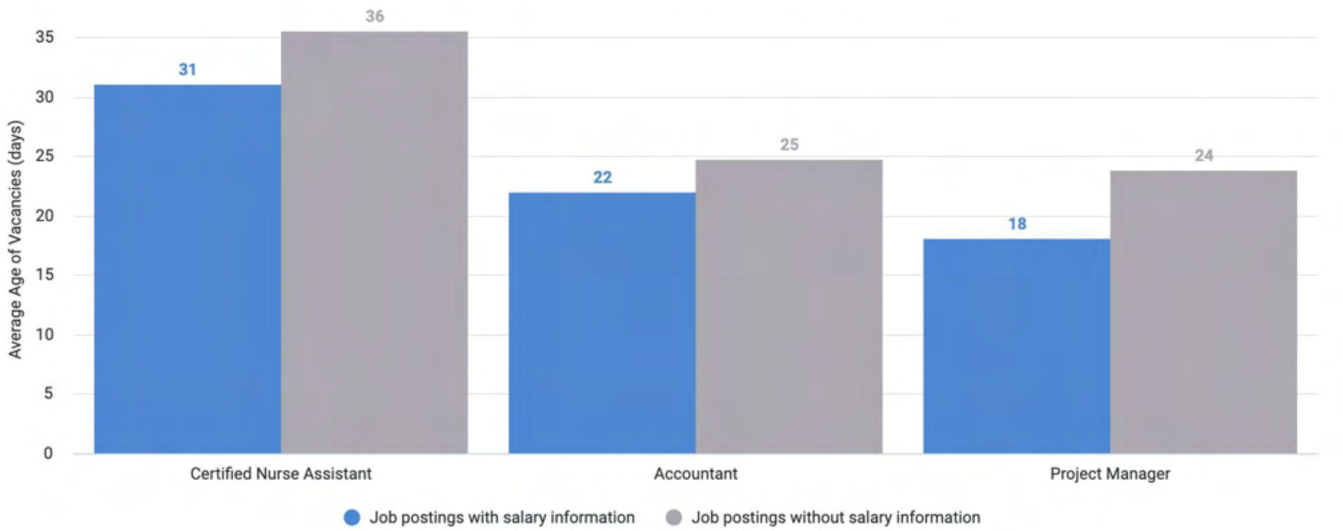
Figure 21a: Percent of Jobs with Salary Information in the Job Posting by State

Bolded names indicate states with salary disclosure laws. All percentage point changes from Jan. 9.

	State	Salary %	% Point Change
1	**Colorado**	66.9%	6.3%
2	**Washington**	66.5%	20.3%
3	**California**	62.1%	19.8%
4	**New York**	61.9%	23.7%
5	Oregon	42.4%	11.9%
6	Alaska	39.8%	15.1%
7	South Dakota	38.8%	4.2%
8	**Hawaii**	37.9%	19.2%
9	Montana	36.3%	11.3%
10	North Dakota	34.3%	4.2%
11	Wyoming	33.7%	9.4%
12	Vermont	32.9%	11.2%
13	Utah	32.7%	1.3%
14	Nevada	31.7%	6.0%
15	New Mexico	31.6%	14.7%
16	Connecticut	31.4%	7.8%
17	Minnesota	30.5%	2.5%
18	Kansas	30.3%	6.5%
19	Wisconsin	30.3%	7.6%
20	Rhode Island	30.1%	8.4%
21	Nebraska	30.0%	9.5%
22	Idaho	29.5%	8.1%
23	Iowa	28.7%	6.7%
24	Missouri	28.7%	5.3%
25	Massachusetts	27.9%	8.9%
26	Pennsylvania	27.5%	6.2%

	State	Salary %	% Point Change
27	Ohio	27.5%	4.6%
28	Virginia	27.2%	8.6%
29	New Hampshire	27.0%	8.9%
30	Maryland	27.0%	9.0%
31	**Illinois**	26.8%	7.3%
32	South Carolina	26.8%	9.3%
33	Maine	26.0%	8.8%
34	Delaware	25.9%	8.6%
35	District of Columbia	25.7%	8.7%
36	New Jersey	25.6%	8.7%
37	Oklahoma	25.5%	6.8%
38	Michigan	25.3%	6.2%
39	Indiana	25.3%	6.7%
40	Florida	24.9%	6.9%
41	Arizona	24.8%	7.3%
42	Georgia	24.5%	7.0%
43	North Carolina	24.0%	7.3%
44	Texas	24.0%	6.9%
45	Alabama	24.0%	7.2%
46	Kentucky	23.4%	5.7%
47	Tennessee	23.3%	5.9%
48	Louisiana	22.3%	8.6%
49	Arkansas	21.6%	7.4%
50	West Virginia	20.7%	6.7%
51	Mississippi	19.7%	5.2%

Figure 22: Average Duration of Vacancies in 2023 by Job Title



One other trend we are seeing when salary information is included in job postings: certain job titles, such as those depicted in Figure 22, have a notably shorter listing duration. This indicates that those jobs with salary information are filled faster than those without this data. Despite this advantage, many employers are still reluctant to publish their numbers out of fear that it will increase wages. We haven't necessarily found this to be true. In 2023, the four states with salary disclosure laws saw a combined increase of 3.2% in median wages - less than the change in U.S. median wages over the same period (see page 16).

Salary

With an increase in salary transparency across the nation, the amount of salary data ATL has been able to aggregate has increased as well – as we use a sophisticated 'salary parser' to collect this data from job listings. Using this large sample of salary data, we found median full-time wages increased 7.6 percent during 2023 (Figure 23). Despite a slight decrease in vacancies as noted earlier, strong wage growth reinforces the strength of the current employment situation. Employers are still vying for scarce workers by offering competitive compensation.

$51,095
Median Full-time Salary
as of Jan. 9

+7.6% (+$3,890/yr.)

$54,985
Median Full-time Salary
as of Dec. 18

Figure 23: Median Full-time Salary Trend

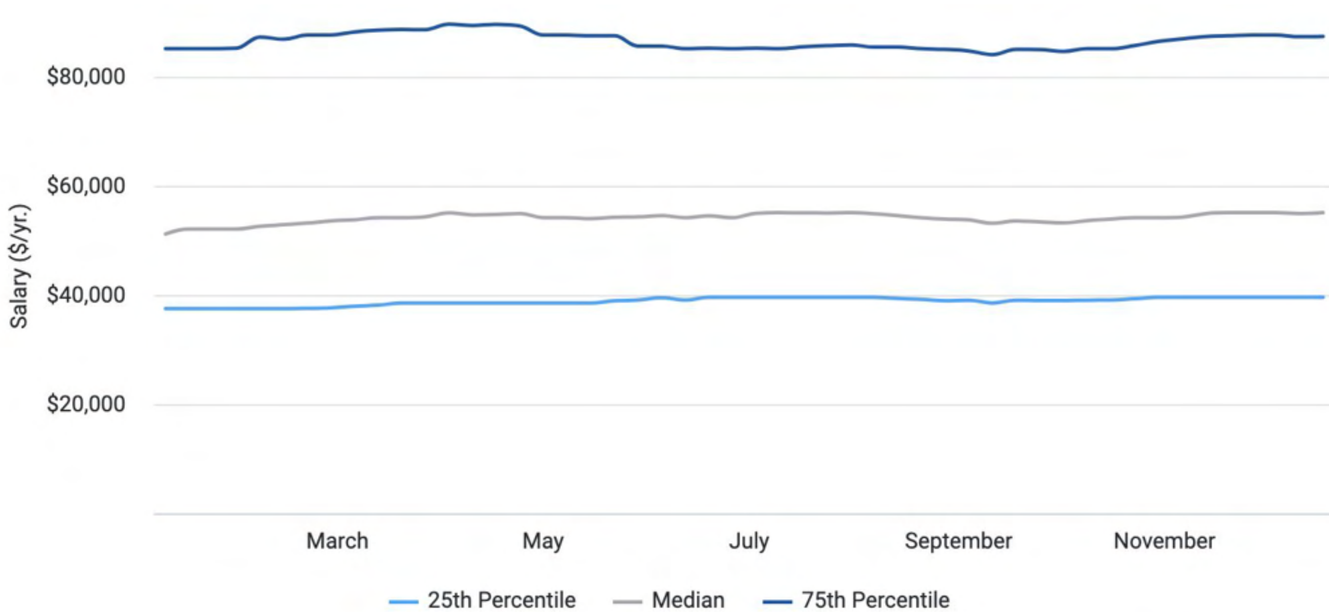


Figure 23: Median full-time US salary rose 7.6% January to December 2023

Median part-time pay also increased in 2023, from $16.32 per hour to $17.50 per hour – a 7.2 percent increase (Figure 24). These numbers are great news for workers, as inflation rose just [2.6 percent from January to November](), meaning wages outpaced inflation.

$16.32
Median Part-time Salary
as of Jan. 9

+7.2% (+$1.18/hr.)

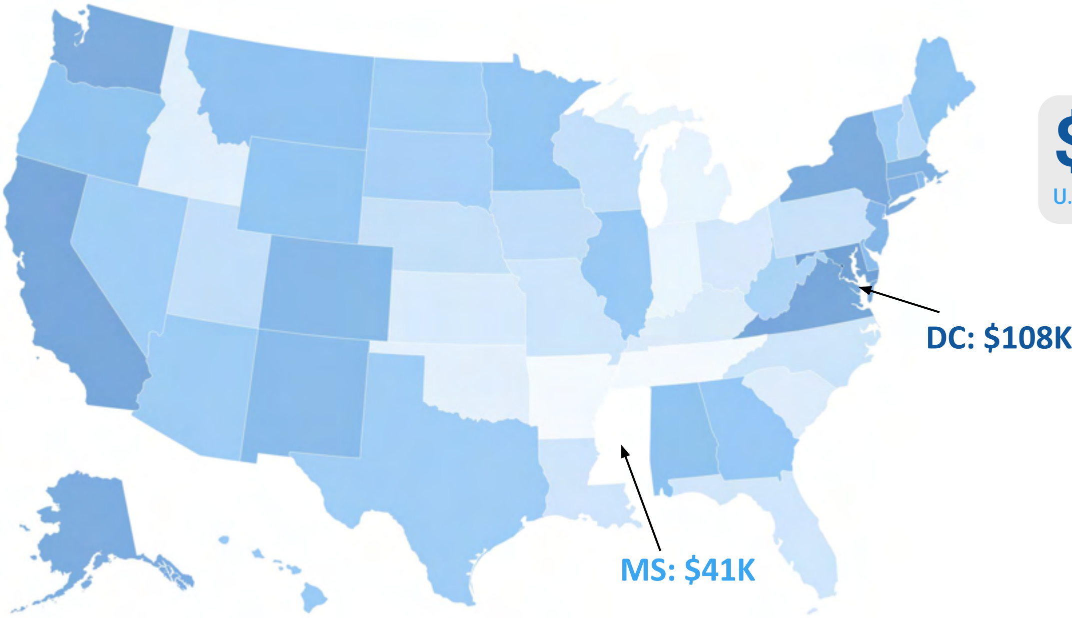
$17.50
Median Part-time Salary
as of Dec. 18

Figure 24: Median full-time US salary rose 7.6% January to December 2023

Of course, median salary varies widely by geographic region. See Figures 25 and 26 for insight into where median salaries are highest and lowest.

Figure 25 & 26: Median Full-time Salary by State

Calculations made from all 2023 salary data



$54,985

U.S. Median Full-time Salary

	State	Median Full-time Salary	Median Part-time Salary
1.	DC	$108,035	$19.50
2.	MD	$67,486	$17.65
3.	VA	$65,000	$16.75
4.	CA	$65,000	$18.75
5.	WA	$62,587	$19.90
6.	NY	$62,494	$18.00
7.	AK	$62,296	$19.00
8.	CT	$59,280	$18.00
9.	MA	$58,760	$19.00
10.	NJ	$57,491	$18.00
11.	CO	$56,160	$18.00
12.	RI	$55,120	$18.00
13.	NM	$54,777	$15.25
14.	DE	$54,080	$16.50
15.	MT	$51,719	$17.50
16.	OR	$51,355	$18.75
17.	AL	$51,345	$15.00

	State	Median Full-time Salary	Median Part-time Salary
18.	ME	$50,960	$18.50
19.	MN	$50,492	$18.00
20.	WY	$50,242	$14.16
21.	GA	$49,608	$15.00
22.	IL	$49,494	$16.75
23.	HI	$49,338	$18.00
24.	AZ	$48,984	$16.15
25.	ND	$48,880	$17.50
26.	NV	$48,880	$16.00
27.	VT	$48,880	$18.02
28.	TX	$48,838	$15.00
29.	SD	$48,194	$18.75
30.	WV	$47,840	$14.58
31.	NH	$46,800	$18.00
32.	UT	$46,176	$15.75
33.	IA	$46,176	$15.50
34.	WI	$46,010	$17.00

	State	Median Full-time Salary	Median Part-time Salary
35.	NE	$45,760	$15.84
36.	PA	$45,490	$16.01
37.	NC	$44,990	$15.14
38.	MO	$44,990	$16.00
39.	LA	$44,720	$14.00
40.	FL	$44,658	$16.00
41.	OH	$44,210	$15.00
42.	KS	$43,992	$15.13
43.	KY	$43,784	$15.00
44.	SC	$43,680	$14.00
45.	ID	$43,347	$16.00
46.	OK	$43,160	$13.25
47.	MI	$42,640	$15.50
48.	IN	$42,640	$15.03
49.	AR	$41,600	$13.93
50.	TN	$41,590	$15.00
51.	MS	$40,560	$13.00

Biggest Salary Changes by Profession

While salaries rose overall in 2023, some professions saw declines, including management (-9.9 percent), business and financial operations (-2.9 percent), and sales and related occupations (-2.6%); a handful of others saw no change (military, educational instruction and library, and office and administrative support) (Figure 27).

Further, several groups saw salary gains greater than the rise of median wages, including protective services (no surprise, given ongoing robust police funding) and legal professions (which aligns with higher rates and increased demand noted earlier).

19

ONET categories saw an increase in salary

7

ONET categories saw a decrease or no change in salary

Figure 27: Percent Change by ONET Major Groups

ONET - Largest Percent Growth	Dec. 18 Median	Percent Change
Protective Service	$41,600	11.1%
Legal	$86,580	6.8%
Personal Care and Service	$39,520	5.6%
Healthcare Support	$39,520	5.6%
Transportation and Material Moving	$41,600	5.3%
Production	$41,600	4.0%
Installation, Maintenance, and Repair	$51,813	3.6%
Building and Grounds Cleaning and Maintenance	$34,320	3.1%
Healthcare Practitioners and Technical	$85,987	3.0%
Life, Physical, and Social Science	$74,974	3.0%

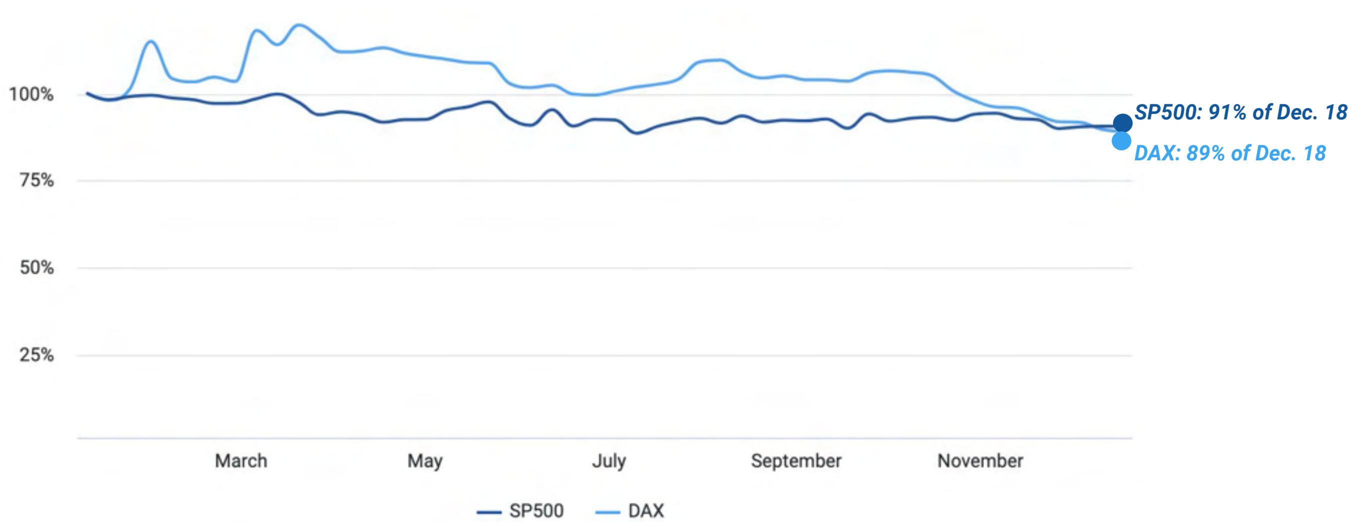
ONET - Largest Percent Decline	Dec. 18 Median	Percent Change
Management	$59,998	-9.90%
Business and Financial Operations	$70,398	-2.90%
Sales and Related	$36,483	-2.60%
Architecture and Engineering	$70,522	-1.80%
Military Specific	$107,494	0%
Educational Instruction and Library	$43,992	0%
Office and Administrative Support	$39,520	0%

Employers, take note: if you're looking for data to guide you in setting salary for an open role, let us know. We'd be happy to get you insights via our Wage Benchmarking Tool.

Market Spotlight: S&P 500 Jobs

S&P 500 vacancies were consistently lower in 2023 than they were at the start of January (Figure 28), ending the year at 91 percent of early January's total. Contrast that with Germany's DAX, where listings were steadily higher than January's levels until about October.

Figure 28: S&P 500 vs. DAX Vacancy Trend - Indexed to Jan. 2

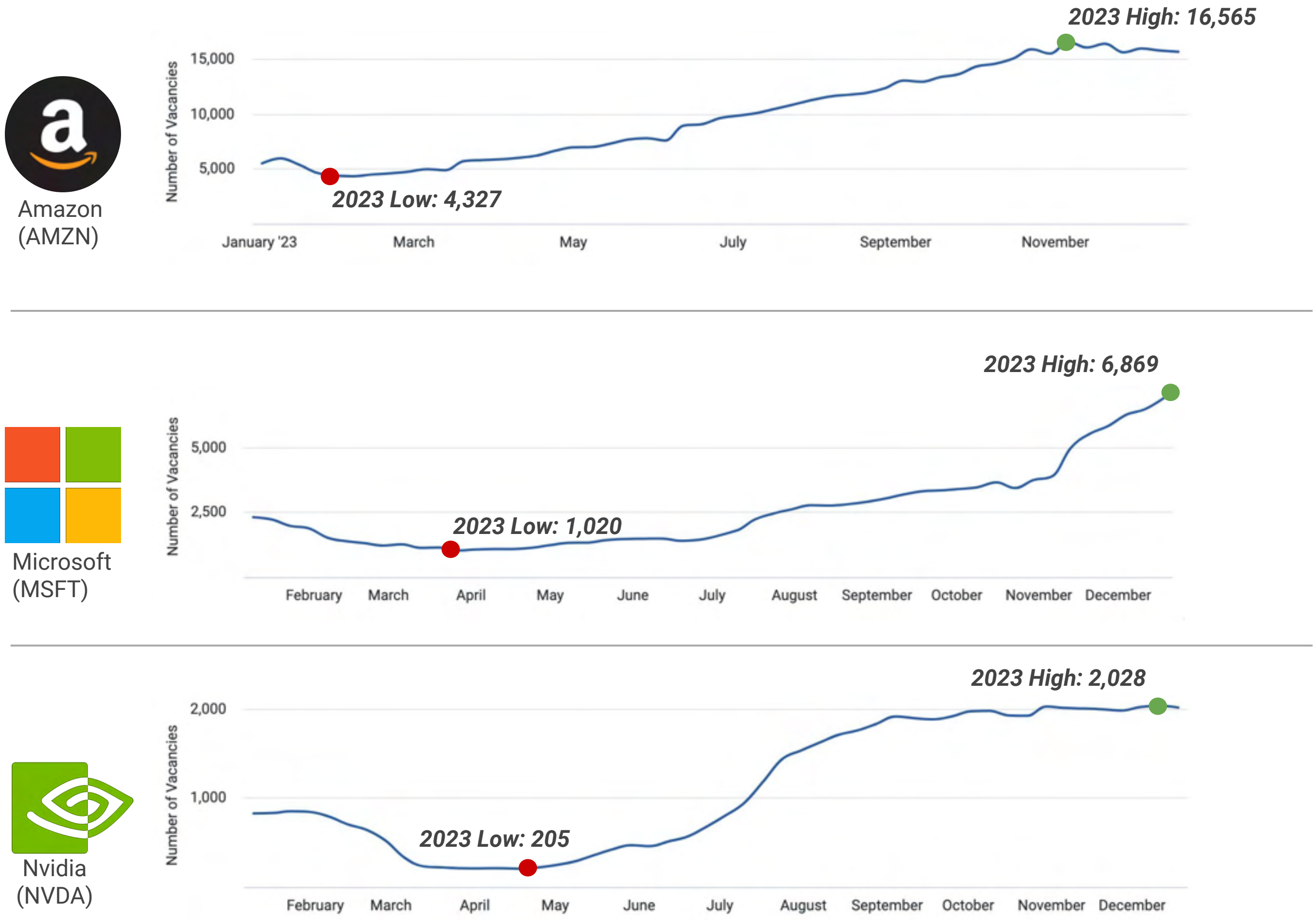


This isn't surprising, given Germany's current labor shortage (especially for skilled labor positions). One positive signal: a law took effect on November 18 making it easier for German companies to hire workers from outside the EU.

As for the US, we grabbed snapshots of three prominent companies: Amazon, Microsoft, and Nvidia (Figure 29). All three saw vacancies pick up after a low point early in the year. Both Amazon and Microsoft participated in the rash of tech layoffs early in the year (Nvidia did not); end-of-year vacancy growth suggests stabilization.

Figure 29: Vacancy Trend

Amazon, Microsoft, and Nvidia



Vacancy growth isn't surprising at any of these heavy hitters, given headlines from 2023. While Amazon was hit with a major antitrust lawsuit, it also enjoyed the new-ish leadership of Andy Jassy (formerly the head of Amazon's lucrative AWS product), who reportedly focused on managing costs.

Microsoft famously invested $10 billion in OpenAI, a company that saw no shortage of attention last year. And Nvidia is almost single-handedly supplying chips for the AI revolution currently sweeping the globe. CEO Jensen Huang was named CEO of the year by multiple outlets.

Biggest Opportunities in 2024

2023's data reveals several opportunities for employers, investors, job board operators, and others interested in labor market data:

1. Salary data is more visible than ever.
2. Offering remote work often means employers can offer a lower salary and still be competitive.
3. Jobs posted on Monday have the least competition for views.
4. Jobs that include salary data may get filled faster than those without.

If you're interested in learning more about our methods in this report or general questions about the labor market, get in touch. We'd love to connect you with the insights you need.

About Aspen Tech Labs

Aspen Tech Labs (ATL) is a global leader in web data management services and recruitment technology founded in 2008. The company is headquartered in Aspen, Colorado with teams throughout the U.S. and Europe. ATL provides web scraping, business intelligence, and data/analytics services for a wide variety of industries. The ATL team is constantly working to increase the number of companies and jobs in the database and to improve the quality and extraction of additional data.

Interested? Have Feedback? Get in Touch

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