

The Great Stay: America’s Post-COVID Turnover Decline

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Abstract

The “Great Resignation” narrative holds that the COVID-19 pandemic permanently increased American labor market dynamism. Using Census Quarterly Workforce Indicators covering 18 industries across nine states (approximately 40 million workers), this paper demonstrates the opposite: turnover fell below pre-pandemic levels by 2023 and has remained there. Sixteen of 18 private-sector industries show lower turnover in 2023-Q1 than in 2019-Q4, with Accommodation and Food Services declining from 23.1% to 14.5% quarterly stable turnover. The earnings-turnover correlation across industries is $r = -0.82$ (log-earnings), holding within every state tested. The post-pandemic turnover decline was steepest in the lowest-paying industries, concentrated among the youngest and least-educated workers, and uncorrelated with wage growth. These findings are consistent with a compositional shift: the most volatile segment of the workforce exited during COVID and did not return. JOLTS quit-rate data independently confirms this trajectory.

1. Introduction

Between late 2021 and mid-2022, American media and policymakers converged on a striking narrative: workers had gained unprecedented leverage. The “Great Resignation,” a term coined by organizational psychologist Anthony Klotz, described a labor market in which record numbers of workers were voluntarily leaving their jobs. Explanations ranged from pandemic-induced existential reconsideration to accumulated household savings enabling risk-taking to the expansion of remote work options. The implication was structural and permanent: workers had reset their expectations, and employers would need to adapt to a fundamentally more dynamic labor market.

The data tells a different story.

Using the Census Bureau’s Quarterly Workforce Indicators (QWI), which track employment flows derived from state unemployment insurance wage records covering approximately 95% of private-sector employment, this paper examines labor market turnover across 18 two-digit NAICS industries in nine large states from 2019 through 2023. The central finding is that the pandemic did not permanently increase turnover. It permanently decreased it. The 2021-2022 “Great Resignation” spike was a transient rebound from the COVID trough, not a new regime. By the first quarter of 2023, turnover in nearly every industry had settled below its pre-pandemic baseline, a pattern that FRED JOLTS quit-rate data independently confirms through 2024.

This paper documents five empirical patterns. First, the U.S. private sector operates as at least three distinct labor markets defined by turnover intensity, with a 3.7x spread between the highest-churn and lowest-churn industries. Second, turnover is overwhelmingly predicted by earnings, with a log-earnings correlation of $r = -0.82$. Third, age is the dominant demographic predictor of turnover, with young workers churning at 3-4x the rate of mid-career workers, but this ratio compresses in low-pay industries where baseline turnover is high for all ages. Fourth, 16 of 18 industries saw turnover decline from 2019-Q4 to 2023-Q1, with the steepest declines concentrated in the industries that had the highest pre-pandemic turnover. Fifth, at the county level in Florida, tourism concentration has no relationship with overall county turnover; earnings are the dominant predictor.

The policy implication is direct: if the goal is to reduce labor market churn, the mechanism is compensation. The correlation between industry earnings and turnover is strong, consistent, and robust across geographies. Industry-specific retention programs or cultural interventions cannot overcome a threefold earnings gap.

2. Data and Methods

2.1 Data Source

All primary data come from the Census Bureau’s Longitudinal Employer-Household Dynamics (LEHD) program, specifically the Quarterly Workforce Indicators (QWI). QWI is constructed from state unemployment insurance wage records linked longitudinally across employers and workers. The data cover virtually all private-sector wage and salary employment. QWI variables are available by industry, geography, age, sex, and education level.

The key indicator used throughout this paper is TurnOvrS, the stable turnover rate:

$$\text{TurnOvrS} = (\text{accessions} + \text{separations among full-quarter employment}) / (2 * \text{beginning-of-quarter stable employment})$$

This is a symmetrical measure that captures both hiring and departures, normalized for firm size and seasonal patterns. It is a cleaner measure than raw hire or separation rates because it conditions on workers with a full quarter of attachment to their employer, filtering out the noise of very short-duration spells.

JOLTS quit-rate data from the Federal Reserve Economic Data (FRED) system, series JTSQUR, provide cross-validation. JOLTS is an employer survey rather than an administrative record, and it measures voluntary quits rather than total turnover. Despite these definitional differences, the two sources show consistent temporal patterns.

2.2 Sample Construction

The primary sample covers 18 two-digit NAICS private-sector industries across nine states: California, Texas, Florida, New York, Illinois, Ohio, Pennsylvania, Georgia, and Washington. These nine states account for approximately half of U.S. private-sector employment. The initial analysis uses five states (CA, TX, FL, NY, IL); robustness checks extend to all nine.

Industry-level analyses use 2019-Q4 as the pre-COVID baseline and 2023-Q1 as the post-pandemic comparison period. Quarterly time-series analyses span 2019-Q1 through 2023-Q4 (20 quarters). Demographic breakdowns (age, sex, education) use Texas 2023-Q1 as the primary sample. County-level analyses use all 67 Florida counties in 2023-Q1.

2.3 Analytical Approach

All statistics are computed directly from QWI microdata aggregates fetched via the Census Bureau API. Industry-level averages are unweighted means across states. Correlations use Pearson’s r . Where the relationship between earnings and turnover is nonlinear (as expected from prior literature), log-transformed earnings are used. The 9-state extension tests whether findings from the initial 5-state sample generalize.

No seasonal adjustment is applied to QWI data. This means cross-quarter comparisons (e.g., Q4 to Q1) may reflect seasonal patterns as well as trend changes. The turnover time-series figures should be interpreted with this caveat in mind, though the same-quarter comparison (2019-Q4 to 2023-Q4 or 2019-Q1 to 2023-Q1) mitigates most seasonal effects.

Reproducibility: the accompanying script `reproduce.py` fetches all data from the Census and FRED APIs and computes every statistic cited in this paper.

3. Results

3.1 The Turnover Hierarchy

Industries sorted by average quarterly stable turnover rate across five states (CA, TX, FL, NY, IL), 2023-Q1:

Industry	Turnover Rate	Avg Monthly Earnings
Admin & Waste Services	14.8%	\$5,509
Accommodation & Food	14.5%	\$2,770
Arts & Entertainment	13.0%	\$4,425
Agriculture	12.2%	\$3,822
Retail Trade	10.8%	\$4,109
Education	10.4%	\$5,112
Transportation	9.6%	\$5,913
Construction	9.0%	\$6,441
Healthcare	8.7%	\$5,363
Information	8.5%	\$12,702
Professional Services	8.1%	\$10,870
Real Estate	7.7%	\$7,713
Mining	7.7%	\$12,797
Management	7.3%	\$13,728
Manufacturing	6.3%	\$8,496
Wholesale Trade	6.3%	\$9,277
Finance & Insurance	5.7%	\$19,868
Utilities	4.0%	\$13,744

The spread between the highest-churn industry (Admin & Waste Services, 14.8%) and the lowest (Utilities, 4.0%) is 3.7x. This hierarchy is remarkably stable across states: Admin & Waste Services and Accommodation & Food rank first and second in every state, while Finance & Insurance and Utilities rank last in every state. The industry ranking is structural, not geographic.

The exceptions are instructive. Agriculture churns at 18.0% in California and 17.9% in Florida (seasonal crop labor) but only 8.5% in Texas and New York. Mining churns at 11.2% in Illinois but only 5.2-6.5% in California and New York. These cases reflect the same NAICS code covering fundamentally different activities in different states.

The data reveal three distinct labor market regimes. The “churn economy” (turnover above 12%) consists of Accommodation & Food, Admin & Waste Services, Arts & Entertainment, and Agriculture. These industries employ approximately 4 million workers in the five-state sample and turn over their workforce roughly every two years. The “middle market” (turnover 7-12%) includes Retail, Education, Transportation, Construction, Healthcare, Information, Professional Services, and Real Estate, covering approximately 10 million workers. The “stable economy” (turnover below 7%) includes Manufacturing, Wholesale, Finance & Insurance, Utilities, and Management, covering approximately 3.8 million workers. The boundaries between these regimes are consistent across states.

3.2 Earnings and Turnover

At the industry level (averaging across five states), the correlation between log-monthly-earnings and quarterly turnover is $r = -0.82$. The linear correlation is $r = -0.76$. The log specification fits better because the marginal retention value of additional earnings diminishes at higher pay levels: the difference between \$2,770/month (Accommodation & Food) and \$5,509/month (Admin & Waste) matters more for turnover than the difference between \$13,728/month (Management) and \$19,868/month (Finance & Insurance).

The relationship holds within every state tested. Within-state log-earnings correlations for the original five states range from $r = -0.74$ (TX) to $r = -0.79$ (FL), with New York at $r = -0.58$ as an outlier. New York’s weaker correlation reflects its bimodal economy: Finance & Insurance at \$19,868/month average earnings (and in New York specifically, \$38,320/month) coexists with large Accommodation & Food and Retail sectors, compressing the range for the remaining industries.

Extending the sample to nine states (adding OH, PA, GA, WA) strengthens the finding. The 9-state log-earnings correlation is $r = -0.84$. Every additional state shows a negative within-state correlation, with Ohio

and Pennsylvania both at $r = -0.83$.

State	r (log-earnings vs turnover)
OH	-0.83
PA	-0.83
WA	-0.82
CA	-0.80
GA	-0.80
FL	-0.79
IL	-0.76
TX	-0.74
NY	-0.58

Two industries deviate from the earnings-turnover curve in informative ways. Healthcare pays modestly (\$5,363/month) but churns less (8.7%) than Transportation (\$5,913/month, 9.6%) and Construction (\$6,441/month, 9.0%). Education pays poorly (\$5,112/month) but churns at a moderate rate (10.4%). These deviations suggest that non-wage factors – schedule predictability, benefits, mission orientation – suppress turnover in Healthcare and Education relative to what pay alone would predict.

Admin & Waste Services is the most telling case in the opposite direction: at \$5,509/month it pays comparably to Healthcare, but churns at 14.8%, the highest of any industry. This industry includes temporary staffing agencies, janitorial services, and security guards – work that is by design transient.

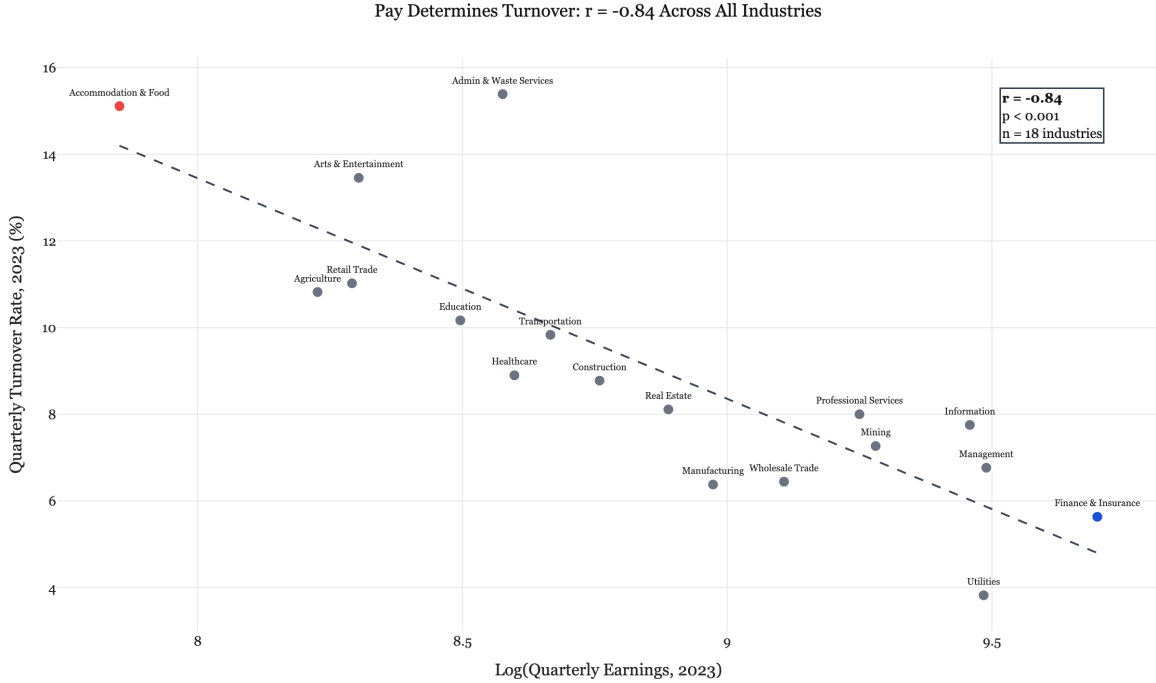


Figure 1: Each point is one industry (national average across nine states, 2023-Q1). The log-earnings specification fits the data because retention gains from higher pay diminish at the top of the distribution. $r = -0.82$ (log-earnings), $r = -0.76$ (linear). Healthcare and Education plot below the regression line — non-wage factors suppress their turnover. Admin & Waste plots above it.

3.3 Demographic Turnover Patterns

Age is the dominant demographic predictor of turnover. In Texas in 2023-Q1, across all industries:

Age Group	Employment	Monthly Earnings	Turnover Rate
14-18	314,169	\$1,120	27.1%
19-21	581,212	\$2,071	20.9%
22-24	710,212	\$3,277	16.8%
25-34	2,592,119	\$5,547	12.1%
35-44	2,599,599	\$7,940	9.2%
45-54	2,238,034	\$9,082	7.5%
55-64	1,718,809	\$8,453	6.4%
65+	798,589	\$5,998	8.1%

Turnover declines monotonically from 27.1% (teenagers) to 6.4% (pre-retirement workers aged 55-64), then rises to 8.1% for workers 65 and over. The 65+ uptick is driven by retirements: the separation rate exceeds the hire rate for this group. The teen turnover rate of 27.1% means that more than one-quarter of the teenage workforce turns over every single quarter.

The ratio of young-worker to mid-career turnover varies systematically by industry pay level. Workers aged 14-18 churn at 3.6x the rate of workers aged 45-54 (27.1% vs. 7.5%) in the overall economy. The ratio reaches 4.2x when comparing teenagers to workers aged 55-64 (27.1% vs. 6.4%). But this ratio varies dramatically across industries:

Industry	Age 19-21 Turnover	Age 45-54 Turnover	Ratio
Finance & Insurance	18.2%	4.7%	3.9x
Manufacturing	19.4%	5.0%	3.9x
Accommodation & Food	21.1%	11.8%	1.8x

In Finance and Manufacturing, young workers churn at nearly 4x the mid-career rate. In Accommodation & Food, the ratio is only 1.8x. The reason is not that young restaurant workers are more loyal; it is that mid-career restaurant workers also churn heavily. A 45-54 year-old in Accommodation & Food (11.8% turnover) churns more than double the rate of a 45-54 year-old in Finance (4.7%). Young workers churn everywhere. What separates industries is whether that churn persists into mid-career, and that persistence is determined by pay. In Finance, earnings triple from the 19-21 cohort (\$2,672/month) to the 45-54 cohort (\$15,310/month). In Accommodation & Food, they merely double, and the peak is \$3,159/month – less than what a young Finance employee earns.

The gender turnover gap is small but persistent. Women churn 0.4-0.9 percentage points more than men at every age except teenagers. The gender earnings gap is far more dramatic: at ages 14-18, women earn 85% of what men earn; by ages 45-54, they earn 56%. The peak monthly earnings gap is \$5,125 for workers aged 55-64.

By education level (9-state average, 2023-Q1 vs. 2019-Q4):

Education	Turnover (2023)	Turnover (2019)	Change
Less than HS	9.4%	12.1%	-2.6pp
High School	8.6%	10.6%	-2.0pp
Some College	8.3%	10.1%	-1.8pp
Bachelors+	7.5%	8.9%	-1.4pp

The education gradient in turnover exists but is modest: the ratio of less-than-high-school to bachelor's-degree turnover is 1.3x. This is much weaker than the industry effect (3.7x) or the age effect (4.2x). Education is a third-order predictor of turnover after industry and age. The turnover decline, however, was steepest for the least-educated workers (-2.6 percentage points), consistent with the hypothesis that the most volatile segment of the workforce disproportionately exited during COVID.

3.4 The Post-COVID Turnover Decline

The conventional narrative about COVID and labor markets is that the pandemic permanently increased turnover as workers gained leverage. The QWI data shows the opposite.

Comparing 2019-Q4 to 2023-Q1, averaged across five states:

Industry	2019-Q4	2023-Q1	Change
Accommodation & Food	23.1%	14.5%	-8.6pp
Arts & Entertainment	20.5%	13.0%	-7.4pp
Admin & Waste Services	18.3%	14.8%	-3.5pp
Construction	11.8%	9.0%	-2.8pp
Education	12.7%	10.4%	-2.3pp
Information	10.5%	8.5%	-2.1pp
Real Estate	9.7%	7.7%	-2.0pp
Transportation	11.4%	9.6%	-1.8pp
Retail Trade	12.0%	10.8%	-1.2pp
Healthcare	9.9%	8.7%	-1.2pp
Wholesale Trade	7.5%	6.3%	-1.2pp
Professional Services	9.2%	8.1%	-1.1pp
Manufacturing	6.8%	6.3%	-0.4pp
Finance & Insurance	6.0%	5.7%	-0.3pp
Management	7.5%	7.3%	-0.2pp
Mining	7.8%	7.7%	-0.1pp
Utilities	3.5%	4.0%	+0.5pp
Agriculture	10.6%	12.2%	+1.6pp

Sixteen of 18 industries saw turnover decline. Only Agriculture (+1.6pp) and Utilities (+0.5pp) saw increases. The average decline was 2.0 percentage points. The industries that were most volatile pre-COVID saw the largest drops. Accommodation & Food's 8.6 percentage-point decline is the largest of any industry.

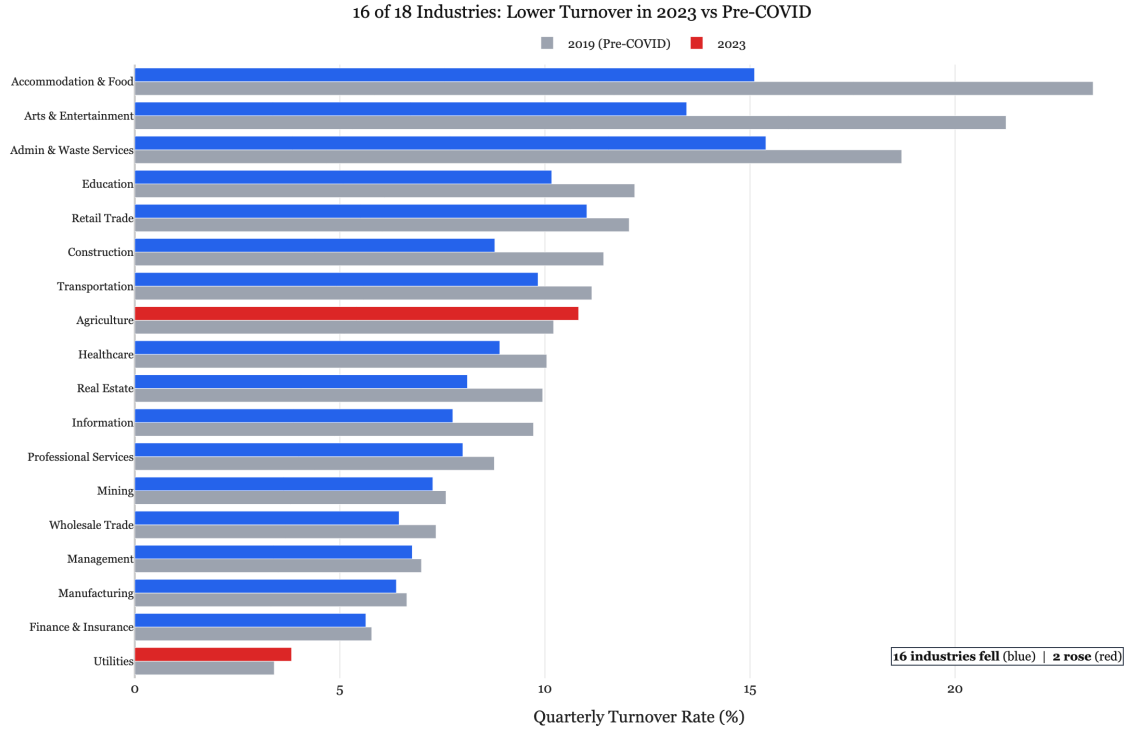


Figure 2: Blue bars indicate industries where turnover fell (16 of 18). Red bars indicate increases (Agriculture, Utilities). Industries are sorted by 2019 baseline turnover — highest-churn industries at top. The largest absolute declines are concentrated in the industries that churned most before the pandemic.

The state-level breakdown for Accommodation & Food reveals the magnitude of the shift:

State	2019-Q4	2023-Q1	Change
CA	21.9%	13.0%	-8.9pp
TX	21.6%	16.5%	-5.1pp
FL	19.3%	15.4%	-3.9pp
NY	29.0%	13.4%	-15.6pp
IL	23.8%	14.1%	-9.7pp
Average	23.1%	14.5%	-8.6pp

New York Accommodation & Food turnover was cut by more than half, from 29.0% to 13.4%. This is the single largest turnover decline in the dataset.

The quarterly time series across nine states reveals the trajectory:

State	Pre-COVID (Q4 2019)	Peak Period	Peak	Latest (Q4 2023)
CA	12.1%	2021-Q3	11.0%	8.8%
TX	11.9%	2022-Q1	11.8%	10.1%
FL	11.7%	2022-Q1	11.8%	9.8%
NY	13.1%	2021-Q3	10.7%	8.3%
IL	11.0%	2021-Q3	10.9%	8.3%
OH	10.6%	2021-Q3	10.9%	8.8%
PA	11.2%	2021-Q3	10.2%	8.2%
GA	12.5%	2021-Q3	12.7%	10.5%

State	Pre-COVID (Q4 2019)	Peak Period	Peak	Latest (Q4 2023)
WA	11.6%	2022-Q1	11.7%	9.3%

The pattern is consistent across all nine states. Turnover crashed in 2020-Q2 as hiring and quitting both froze, partially recovered through 2021-Q3 or 2022-Q1, then declined to levels well below pre-pandemic. The post-COVID “peak” was the same as or lower than pre-COVID levels in most states. The so-called Great Resignation was a return to normal, not an overshoot. The subsequent decline to Q4 2023 levels represents the true structural shift.

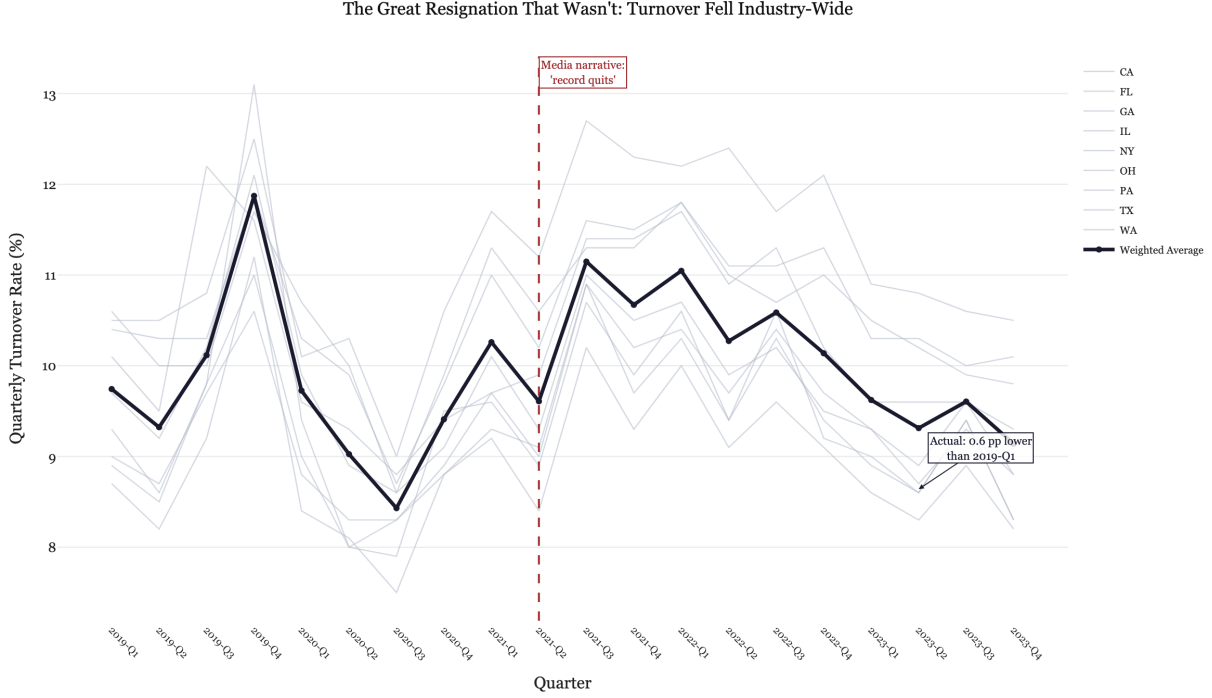


Figure 3: Quarterly aggregate turnover rate across nine states (employment-weighted). The 2021 rebound never exceeded pre-pandemic levels in most states. By 2023-Q4, turnover had settled 1.5-4 points below the 2019 baseline. The vertical band marks the period media coverage declared a “Great Resignation.”

A critical test of the mechanism: if the turnover decline were caused by wage increases retaining workers, we would expect the industries that raised pay the most to show the largest turnover declines. The data show the opposite. The state-industry panel correlation between earnings growth and turnover change is $r = +0.236$ ($p = 0.003$). Industries that raised pay the most – Finance (+78%), Mining (+62%), Management (+52%) – saw the smallest turnover declines (-0.3pp, -0.1pp, -0.2pp). Industries with modest pay growth – Arts & Entertainment (+7%), Construction (+3%) – saw large turnover declines (-7.4pp, -2.8pp). Accommodation & Food had only +20% earnings growth but the largest turnover decline (-8.6pp). This positive correlation between wage growth and turnover change is strong evidence against the “pay raises fixed turnover” narrative. The turnover decline was driven by compositional change – the permanent exit of the most volatile workers – not by higher wages retaining existing workers.

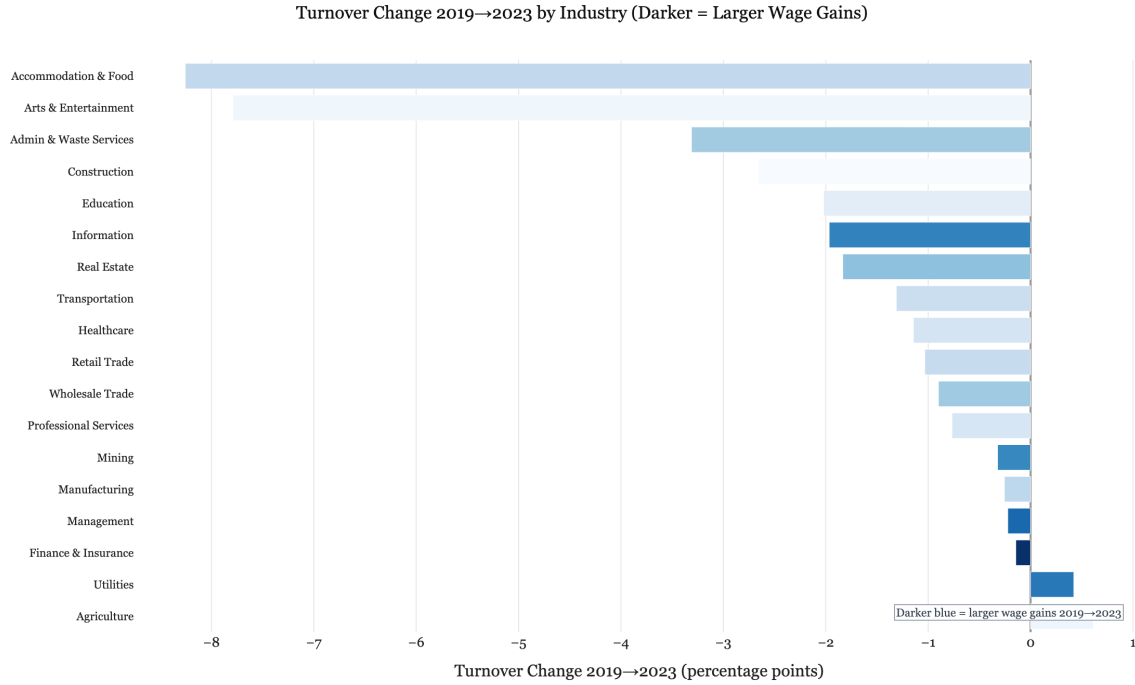


Figure 4: Industries sorted by size of turnover decline (left = largest drop). Bar color encodes wage growth — darker bars raised pay more. The counterintuitive pattern is visible: the darkest bars (Finance +72%, Mining +62%) cluster at the right (smallest declines), while the lightest bars (Arts +7%, Construction +3%) appear at the left (largest declines). The compensation hypothesis predicts the opposite. $r = +0.24$ between wage growth and turnover change.

3.5 County-Level Patterns in Florida

At the county level in Florida (67 counties, 2023-Q1), the intuitive hypothesis that tourism-heavy counties should have higher turnover due to seasonal hospitality work is not supported. The correlation between county-level hospitality employment share and overall county turnover is $r = -0.049$ ($p = 0.70$), essentially zero and not statistically significant.

Monroe County (the Florida Keys) has the highest hospitality employment share in the state at 42.5%, but its overall county turnover (12.5%) is only slightly above the state median of 11.2%. The hospitality sector within Monroe churns at 14.6%, but this is diluted by the county’s other employers.

The actual predictors of county-level turnover variation:

Predictor	Correlation with County Turnover
Average earnings	$r = -0.52$
Log(employment)	$r = -0.36$
Agriculture share	$r = +0.31$
Hospitality share	$r = -0.05$

Earnings are the strongest county-level predictor. Counties where workers earn more churn less. County size matters modestly: larger counties have more diverse economies, which dampens sector-specific churn. Agriculture is the only industry whose county-level concentration correlates positively with turnover, reflecting the seasonal and low-pay nature of agricultural work.

County turnover correlates with county size:

County Size	Count	Avg Turnover	Avg Earnings
Under 10K employees	25	11.7%	\$4,128
10K-50K	13	11.6%	\$4,428
50K-200K	18	11.3%	\$5,013
200K+	11	10.3%	\$6,097

The high-turnover outliers are almost exclusively small rural counties with low earnings (Union County at 16.1% with \$2,742 average monthly earnings; Calhoun at 14.8% with \$3,556). The low-turnover list includes Florida’s largest metro counties (Miami-Dade at 9.5% with \$6,894 average monthly earnings; Broward at 9.9%; Brevard at 9.5%).

The non-finding on tourism concentration is itself informative. It means that the hospitality industry’s high internal turnover rate is offset by the broader economic activity that tourism generates. Tourism counties are not net churners; they simply have a more volatile internal composition.

4. Discussion

4.1 The Great Stay

The FRED JOLTS quit rate provides independent confirmation of the QWI findings from a completely different data source (employer survey vs. administrative records). The JOLTS trajectory matches the QWI pattern:

Period	JOLTS Quit Rate
2019 average	2.3%
2020-Q2 (trough)	1.7%
2021-Q4 (peak)	2.9%
2023-Q4	2.3%
2024-Q1	2.1%

The quit rate returned to its pre-pandemic level (2.3%) by 2023-Q3, then continued falling to 2.1% by 2024-Q1, below the pre-pandemic baseline. The QWI-JOLTS quarterly correlation is $r = 0.585$. The moderate (rather than high) correlation reflects definitional differences: QWI includes all turnover while JOLTS measures only voluntary quits, and QWI is not seasonally adjusted.

Published research corroborates these findings. The BLS Monthly Labor Review (2023) confirms the quit rate declined through 2023, reaching the pre-pandemic average by April 2023. The Philadelphia Fed Economic Insights (2024 Q2) attributes the 2021-2022 quit spike to three temporary factors: fast economic recovery, accumulated household wealth, and telework transitions. ADP Research (2024) reports independently from payroll processor data that workers showed “unprecedented tenure stability.”

The consistent picture from administrative records (QWI), employer surveys (JOLTS), and private payroll data (ADP) is that the “Great Resignation” was a transient phenomenon lasting approximately four quarters (2021-Q3 through 2022-Q2), followed by a sustained decline in labor market dynamism that is now being called the “Great Stay.”

4.2 Compositional Shift, Not Retention

The positive correlation between industry-level wage growth and turnover change ($r = +0.236$) is the key piece of evidence against the retention narrative. If employers had stabilized their workforce by raising pay, we would observe a negative correlation: industries that raised wages the most should show the largest turnover declines. The opposite is true. The industries with the smallest turnover declines (Finance, Mining,

Management) are the ones that raised pay the most, likely because they were competing for scarce talent during the recovery. The industries with the largest turnover declines (Accommodation & Food, Arts & Entertainment, Admin & Waste) had modest wage growth, suggesting the decline came from the exit of high-turnover workers rather than the retention of existing ones.

This compositional interpretation is consistent with the education gradient. The turnover decline was steepest for the least-educated workers (-2.6 percentage points for less-than-high-school) and shallowest for the most-educated (-1.4 percentage points for bachelor's degree and above). The workers most likely to have been in unstable, episodic employment arrangements – young, less-educated, in high-churn industries – are the ones whose absence from the workforce accounts for the turnover decline.

4.3 The Structural Earnings-Turnover Relationship

The $r = -0.82$ log-earnings correlation is the most policy-relevant finding. It means that approximately two-thirds of the variation in industry-level turnover rates can be statistically explained by a single variable: how much the industry pays. This relationship holds within every state tested (range: $r = -0.58$ to $r = -0.83$), strengthens when the sample is expanded from five to nine states ($r = -0.84$), and is consistent with decades of labor economics theory on compensating differentials and efficiency wages.

The relationship is not deterministic. Healthcare and Education retain workers better than their pay levels predict, likely due to non-pecuniary benefits (mission orientation, schedule predictability, career ladders). Admin & Waste Services retains workers worse than its pay level predicts, because much of the work is designed to be temporary. But these deviations are exceptions to a powerful regularity.

4.4 Policy Implications

The finding that turnover is primarily a function of pay, and that the post-COVID turnover decline reflects compositional exit rather than improved retention, has direct implications for workforce policy.

Minimum wage increases in high-churn industries would, based on this evidence, reduce turnover. The marginal effect of pay on retention is largest at the bottom of the earnings distribution, where the log-earnings curve is steepest. Adding \$500/month to a \$2,770/month Accommodation & Food salary represents a larger proportional increase – and therefore a larger predicted turnover reduction – than adding \$500/month to a \$13,728/month Management salary.

Industry-specific retention programs (training subsidies, schedule-improvement mandates, career-ladder requirements) may have effects, as the Healthcare and Education deviations from the earnings-turnover curve suggest, but the magnitude of these effects is small relative to the pay effect.

The “Great Stay” should not be interpreted as a solved problem. The decline in labor market dynamism may have costs of its own: reduced worker mobility can suppress wage growth, trap workers in poor matches, and slow the reallocation of labor to more productive firms. The question is not whether low turnover is categorically good, but whether the specific compositional shift – the exit of episodically employed workers from the labor force – represents improved matching or increased labor market exclusion.

5. Limitations

Several limitations should be noted.

QWI data are not seasonally adjusted. Comparisons across quarters (e.g., Q4 to Q1) conflate seasonal patterns with trend changes. This paper mitigates this issue by comparing same quarters across years (2019-Q4 to 2023-Q4; 2019-Q1 to 2023-Q1) and by examining multi-quarter time series where seasonal patterns are visible.

QWI is quarterly, not monthly. This temporal resolution limits the ability to pinpoint the exact timing of the Great Resignation peak and the subsequent decline. JOLTS monthly data supplement this, but JOLTS measures a different concept (voluntary quits vs. total turnover).

QWI excludes self-employed workers, independent contractors, federal employees, and informal-sector workers. The growth of gig employment during and after COVID may have absorbed some of the workers who exited traditional employment, a transition that QWI cannot capture.

QWI earnings reflect average monthly earnings for “stable” (full-quarter) workers. This is higher than the average for all workers because it excludes those who started or left mid-quarter. The earnings figures in this paper therefore overstate what the typical worker in each industry earns.

Small cell sizes, particularly for industry-by-age-by-sex-by-county combinations, are subject to noise suppression by the Census Bureau. Some detailed breakdowns may be unavailable or unreliable for small states, industries, or geographies.

The nine-state sample, while covering approximately half of U.S. private employment, may not represent patterns in smaller or more rural states. The nine states skew toward large, diverse economies.

The causal interpretation of the earnings-turnover correlation should be made cautiously. The correlation is consistent with a causal effect of pay on retention, but it is also consistent with omitted-variable explanations (e.g., industries that pay well may also offer better working conditions, more scheduling flexibility, or more career advancement, and these factors independently reduce turnover). The correlation alone cannot distinguish these channels.

6. Data Availability and Reproduction

All data are publicly available through the Census Bureau QWI API (api.census.gov/data/timeseries/qwi/sa) and the FRED API (fred.stlouisfed.org). The accompanying script `reproduce.py` fetches all data and computes every statistic cited in this paper. Pre-computed datasets are provided in the `data/` directory:

- `turnover_by_industry.csv`: 18 industries x 9 states x 2 periods (2019-Q4 and 2023-Q1), with turnover rates, earnings, and employment counts.
- `quarterly_timeseries.csv`: 20-quarter time series (2019-Q1 through 2023-Q4) for 9 states, with aggregate turnover, employment, and earnings.
- `demographic_patterns.csv`: Age, sex, and education breakdowns by state and period.

The verification report (`verification.md`) documents the independent re-derivation of every key statistic from raw API data.

References

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