

RESEARCH REPORT — 03 OF 06

FOCUS: GLOBAL + CANADA

17 SOURCES CITED

"The First Job Is Changing": What Happens When AI Takes Over Entry-Level Work?

Recent graduates now face a higher unemployment rate than the workforce as a whole — a historic reversal. The evidence points to a real, AI-linked weakening of the bottom rung of the career ladder, tangled together with an ordinary hiring slowdown.

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THE NUMBER THAT MATTERS

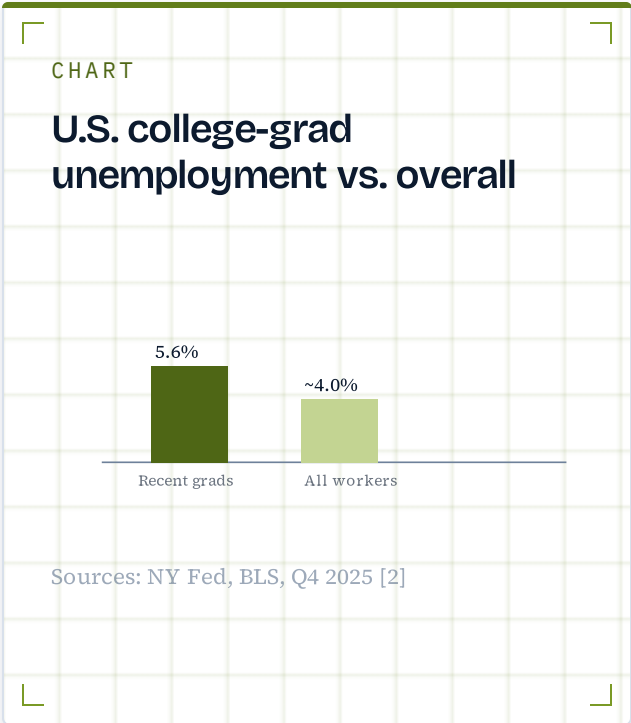
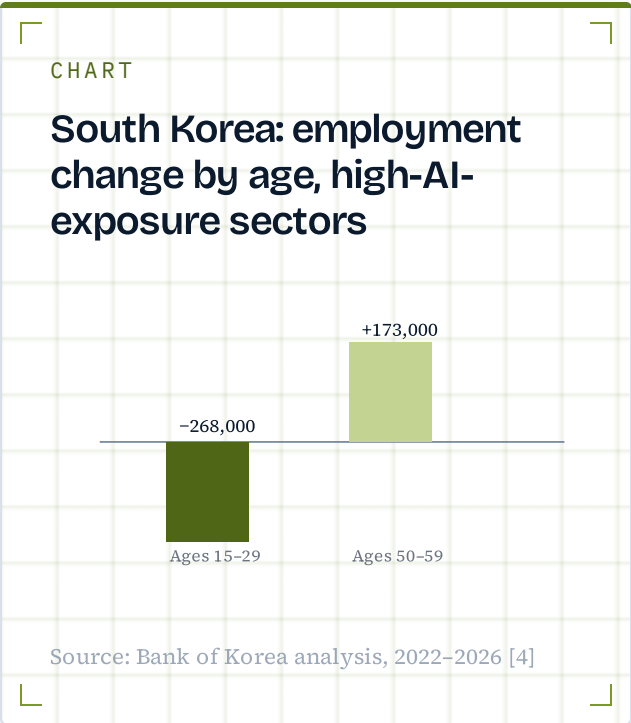
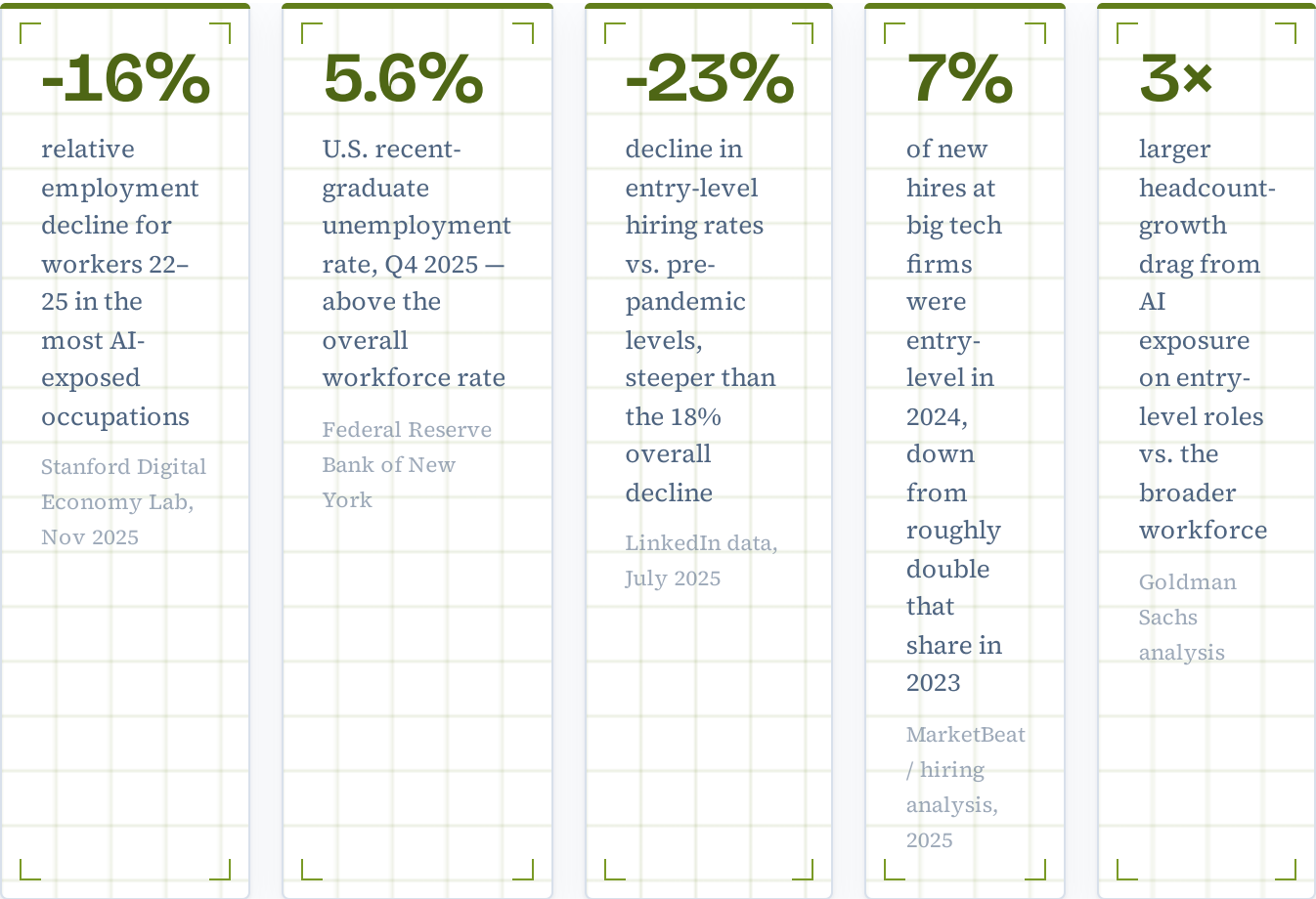
42.5%

The share of employed U.S. college graduates aged 22–27 working in jobs that don't typically require a degree, as of Q4 2025 — the highest underemployment rate since the pandemic, alongside a 5.6% unemployment rate for the same group. ^[2]

EXECUTIVE SUMMARY

- Stanford's Digital Economy Lab finds a 16% relative decline in employment for 22–25-year-olds in the most AI-exposed occupations, after controlling for other factors. ^[1]
- Recent-graduate unemployment has, for the first time in decades, exceeded the overall unemployment rate — a reversal of the historic "a degree helps" pattern. ^[2]
- The clearest natural experiment is South Korea: youth employment fell 285,000 in four years, with 94% of the losses concentrated in the most AI-exposed industries, while employment for workers in their 50s in those same industries rose. ^[4]
- Not every data point agrees — US youth (16–24) unemployment is roughly flat versus 2021, suggesting a broader hiring freeze is doing some of this work too. ^[7]
- Where junior roles survive, they are being "seniorized" — loaded with judgment and stakeholder-management expectations that used to be reserved for mid-career hires.

DATA DASHBOARD



01 — THE HISTORIC REVERSAL

For the first time, a degree is not the safety net it used to be

Aggregate employment in developed economies has not collapsed — headline job numbers remain broadly stable, and most economists find limited evidence that AI has moved the top-line figures. ^[6] But underneath that stability, early-career hiring is weakening in a way that reverses a decades-old pattern: recent college graduates in the U.S. now face a 5.6% unemployment rate, above the overall workforce rate, while 42.5% of employed graduates aged 22–27 work in jobs that don't typically require their degree — the highest underemployment level since the pandemic. ^[2] For the first time in the modern data, a degree no longer reliably buys better odds at a first job than the broader labour force gets without one. ^[8]

The most rigorous causal evidence so far comes from Stanford's Digital Economy Lab, whose November 2025 working paper tracked payroll data across a five-year balanced sample of firms and found that workers aged 22–25 in the most AI-exposed occupations experienced a 16% relative decline in employment after the spread of generative AI, even after controlling for other factors that might explain a firm's hiring decisions. ^[1] An Anthropic-published analysis released a few months later found suggestive evidence pointing the same direction. ^[1]

02 — THE CLEAREST NATURAL EXPERIMENT

South Korea shows the mechanism in unusually sharp relief

Central-bank data gives the most direct look yet at how AI exposure interacts with age in hiring. The Bank of Korea found that employment among people aged 15–29 fell by 285,000 between June 2022 and June 2026 — and that 268,000 of those losses, or 94%, occurred specifically in industries with high exposure to AI. ^[4] Within

those sectors, information services employment fell 31.4%, publishing fell 27.4%, computer programming dropped 16.6% and professional services fell 11.6%. ^[4] In the same high-exposure industries, employment for workers in their 50s rose by 173,000 of a 230,000 total gain for that age group — the central bank explicitly described the result as a shift toward a more seniority-biased labour market. ^[4]

A separate analysis of U.S. software-development payrolls found the same signature: employment for developers aged 22–25 declined nearly 20% since late 2022 in firms where employment for older developers in the same roles grew 6–12% over the same period — the routine implementation tasks that disproportionately employed junior developers are exactly the tasks generative AI has gotten good at first. ^[9] Big tech hiring data tells a compatible story at the firm level: entry-level hires fell to just 7% of new hires in 2024, a 25% drop from 2023 and more than 50% below pre-pandemic norms, while startup graduate hiring fell from 30% of new hires in 2019 to under 6% in 2024. ^[5]

03 — THE COUNTER-EVIDENCE

Not every number points the same direction — and that matters

A careful read of the U.S. data complicates a simple "AI is killing entry-level jobs" story. Youth unemployment (ages 16–24) stood at 10.5% in August 2025, compared with 10.9% in February 2021 — essentially flat over four years once the full cycle is considered, which is hard to square with a technology-driven collapse specifically hitting young workers. ^[7] A separate analysis found that entry-level tech job postings fell 67% between 2019 and 2024, but overall tech postings were also down 36% from pre-pandemic levels by the same point — suggesting a broader, general hiring freeze in tech is doing much of the work that headlines attribute to AI alone. ^[7]

The most balanced reading across sources: the vulnerability of young workers to economic slowdowns is not new or unique to AI — it is a well-documented, procyclical feature of labour markets that predates generative AI by decades. ^[3] What is new is the mechanism layered on top of that cyclical weakness: employers are not simply hiring fewer juniors because of a downturn, they are restructuring the junior role itself. Researchers now call this "seniorization" — loading entry-level postings with judgment, stakeholder-management and prior-experience expectations that used to be reserved for mid-career hires, effectively narrowing the on-ramp even where headcount holds steady. ^[10]

04 — WHERE THE ON-RAMPS STILL EXIST

Not every first job is disappearing — it is relocating

Sectors requiring physical presence, regulated certification, or in-person trust have been comparatively insulated. Healthcare, government and hospitality accounted for almost 75% of all new jobs added in late 2024 and 2025, with healthcare entry-level postings specifically rising 13 percentage points against the broader trend. ^[10] Hiring intensity has also shifted geographically, away from the highest-cost traditional tech hubs toward secondary markets. ^[10] None of this fully offsets the losses in AI-exposed knowledge work, but it does mean the story is uneven by sector and place, not a uniform contraction of "the first job" everywhere at once.

Employer hiring intentions for new graduates remain nominally positive but softening in real terms: the National Association of Colleges and Employers projects only a 1.6% increase in hiring for the Class of 2026 versus the Class of 2025 — which, adjusted for a growing pool of graduates entering an already-tight

market, amounts to a functional contraction in per-graduate opportunity even without a headline drop in the hiring number. ^[10]

AT A GLANCE

INDICATOR	VALUE	COMPARISON	SOURCE
U.S. recent-grad unemployment	5.6%	Above overall workforce rate — a reversal	NY Fed, Q4 2025
U.S. recent-grad underemployment	42.5%	Highest since the pandemic	NY Fed, Q4 2025
22–25 employment, AI-exposed roles	–16%	Relative decline, controlling for other factors	Stanford DEL, 2025
Entry-level hiring vs. pre-pandemic	–23%	Steeper than –18% overall hiring decline	LinkedIn, 2025
Big-tech entry-level share of hires	7%	Down from ~2x that share in 2023	MarketBeat, 2025
Youth unemployment, South Korea high-exposure sectors	94% of losses	Vs. 6% in low-exposure sectors	Bank of Korea

RECOMMENDATIONS

FOR POLICYMAKERS

- Track youth labour-market health by AI-exposure category, not only by headline unemployment — the damage is concentrated, not diffuse.
- Expand wage-subsidized apprenticeship and work-placement programs specifically for AI-exposed occupations, where the traditional on-ramp is narrowing fastest.
- Watch the "seniorization" trend directly — a headcount-stable labour market can still be closing off entry pathways.

FOR EDUCATORS & WORKFORCE BOARDS

- Steer advising toward sectors showing resilience — healthcare, skilled trades, regulated services — without abandoning knowledge-work pathways.
- Build portfolio- and project-based credentials that demonstrate judgment, not just tool literacy — that's what "seniorized" postings are now asking for.
- Treat internships and referrals as core placement infrastructure, not extras — they are outperforming cold applications in this market.

FOR BUSINESS & HR LEADERS

- Redesign the junior role deliberately rather than letting AI erase it by attrition — juniors who never get the routine reps never become the seniors you'll need later.
- Separate genuine AI-driven efficiency from opportunistic headcount reduction when setting entry-level hiring targets.
- Pair AI tools with structured mentorship for new hires so entry-level roles teach judgment, not just task execution.

SOURCES

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