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Vanguard research | Research note

June 2025

Emergency savings protect retirement savings

- Participation and contribution rates in Vanguard-administered 401(k) plans stand at all-time highs. Yet when plan participants leave their jobs, one-third withdraw their balance as a cash lump sum. Cash-outs often incur early withdrawal penalties and jeopardize workers' retirement preparedness.
- Participants with inconsistent paychecks are significantly more likely to cash out when they leave their jobs. Hourly workers often experience substantial monthly income volatility and have cash-out rates 10–15 percentage points higher than salaried workers with similar annual incomes.[1]
- Emergency savings can improve workers' financial resilience and help them weather volatility. Participants with $2,000 in emergency savings contribute more to their 401(k) accounts and take fewer withdrawals (both while working and after leaving their jobs) than participants who don't have $2,000 in emergency savings.

Retirement savings are at record highs, but not all of it lasts

Employer-sponsored 401(k) plans help millions of Americans save for retirement. Supported by plan features like automatic enrollment, automatic escalation, and employer matching contributions, workers are making progress toward their long-term retirement goals. The participation rate among Vanguard-administered plans is 82%, and the combined employee-employer contribution rate stands at a record 12% (Vanguard, 2025). Nationwide, defined contribution plans now hold more than $12 trillion in retirement wealth.[2]

Unfortunately, some of the wealth generated by this strong 401(k) saving behavior does not last until retirement. When workers leave their jobs, they can preserve their 401(k) savings (by keeping it in the plan or rolling it over to another retirement account) or withdraw their balance as a cash lump sum.[3] Many workers ultimately cash out: Among Vanguard-administered plans, 33% of participants who left their jobs in 2023 took a

1 This research note draws on results from a longer academic research paper. For additional results and methodological details, see Goodman (2025).

2 Based on Investment Company Institute Quarterly Retirement Market Data, March 20, 2025; for details, see ici.org/statistical-report/ret_24_q4.

3 All participants who leave their jobs are eligible to take a cash distribution from their 401(k) accounts. Because many plans execute automatic cash-out transactions for participants whose balances are less than $1,000 at separation, some cash-outs occur without an active participant choice (though participants are notified of impending automatic cash-outs and have a short time window to elect a different distribution option). The relationship between income volatility and cash-out rates holds even when we exclude balances that are less than $1,000 at separation.

cash distribution (Vanguard, 2025). Cash-outs incur immediate tax costs—often including a 10% early withdrawal penalty—and forgo years of compounded investment returns.[4]

What causes 401(k) leakage?

Given the challenge cash-outs pose to workers' retirement preparedness, it is important to understand why they occur and what might be done to help participants preserve more of their hard-earned 401(k) savings.

Potential explanations for 401(k) leakage fall into two main categories. Cash-outs could be a matter of *preference*, with relatively impatient participants choosing to consume 401(k) wealth as soon as job changes give them the withdrawal option. Alternatively, cash-outs could reflect *necessity* and occur when participants face short-term liquidity needs that are even more pressing than their long-term retirement goals.

Distinguishing between these two explanations is important for policy and plan design. If consumption preferences drive cash-outs, then policymakers and employers might take measures to make retirement savings less liquid. If short-term needs drive cash-outs, then participants benefit from recent rule changes expanding 401(k) liquidity options and from workplace access to short-term savings accounts.[5]

Existing data and prior research lend support to the hypothesis that short-term needs drive cash-outs. Hourly workers often experience significant income fluctuations from month to month (Ganong et al., 2024). Monthly expenses (such as medical care and home repairs) are also volatile, and roughly half of households lack a sufficient cash buffer to weather these fluctuations (Farrell and Greig, 2015).

In fact, national surveys indicate that 37% of American adults do not have sufficient cash to cover a $400 emergency expense (Board of Governors of the Federal Reserve System, 2024), and a recent survey of Vanguard 401(k) participants found that 45% have less than $2,000 in emergency savings (Costa, Martino, and de la Fuente, 2025). Participants without emergency savings buffers may face liquidity shortages when changing jobs and use cashed-out retirement balances to replenish their liquid accounts, pay off costly credit card debt, or address any number of other pressing financial needs.

Incomes fluctuate monthly, especially for hourly workers

To investigate whether short-run liquidity considerations drive cash-outs, we assembled paycheck-level income data for a large sample of 401(k) participants in Vanguard-administered plans.[6] We found that 55%–60% of participants in Vanguard-administered plans are hourly workers, a share that is in line with national statistics.[7,8]

The hourly workers in our sample experience substantial monthly income volatility: The standard deviation of monthly income *within* a given year is 15%. Since the median annual

4 Post-separation distributions from 401(k) plans are subject to a 10% early withdrawal penalty if the participant is younger than 55 at the end of the calendar year in which they leave their job.

5 The SECURE 2.0 Act allows plan sponsors to offer penalty-free emergency withdrawals of $1,000 per year and to establish pension-linked emergency savings accounts (PLESAs). For a detailed discussion of these new liquidity features, see Greig, Goodman, and Hahn (2024).

6 Paycheck amounts are not explicitly indicated in Vanguard's data, but we can infer them from participants' contribution activity. For example, a participant who had a 10% contribution rate and made a $100 contribution on January 1 likely received a $1,000 paycheck on January 1. Applying this logic across 1,200 Vanguard-administered plans, we obtained complete paycheck-level income histories for 9.3 million participant-year combinations across the 2008–2022 period. To ensure the accuracy of these inferred paychecks, we calculated them for each participant-year combination and compared the annual sums to official W-2 income figures. Our final sample restricts to participant-year combinations for which the inferred annual income amount is within 3% of the official W-2 income amount. Vanguard receives official W-2 income data from the plans for which it performs nondiscrimination testing services (about two-thirds of the plans in its recordkeeping population).

7 To classify a given participant as hourly or salaried, we compute the frequency with which their paychecks change by at least $1 relative to the preceding paycheck amount. This frequency should be low for salaried workers (whose paychecks are usually identical except for infrequent cases in which they receive annual raises or bonuses) and high for hourly workers (because working exactly the same number of hours in consecutive pay periods is uncommon). We classify a participant as hourly if at least 45% of their paychecks change by at least $1. The 45% cutoff is benchmarked against payroll-processing data used in an academic study of monthly earnings volatility (Ganong et al., 2024). We thank Peter Ganong and Pascal Noel for providing the 45% figure.

8 According to the U.S. Bureau of Labor Statistics, 55.7% of all wage and salary workers in the U.S. in 2023 were hourly (U.S. Bureau of Labor Statistics, 2023).

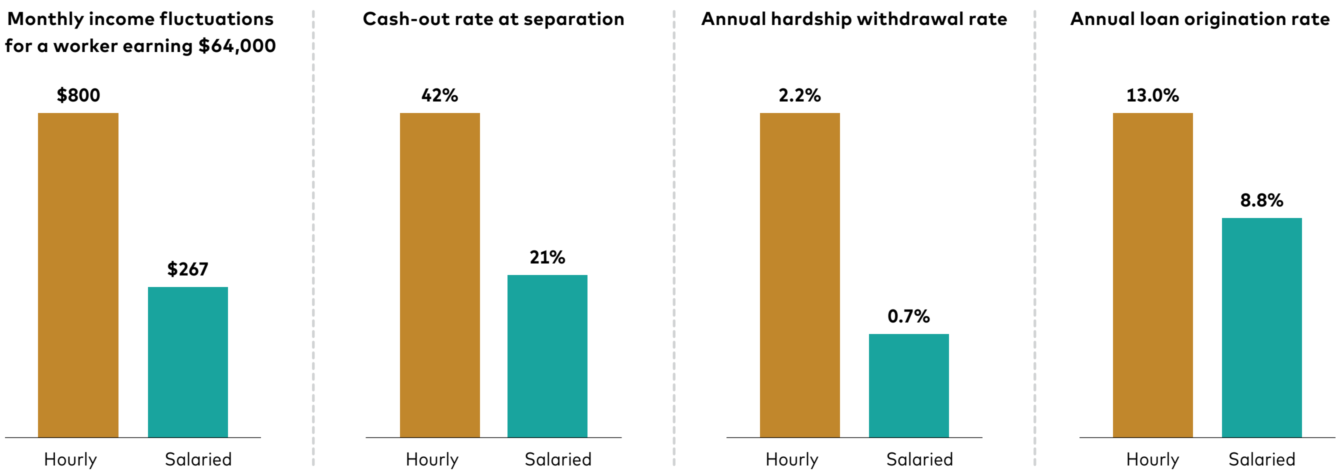
income among the hourly group is $64,000, this means the typical hourly worker in our sample sees their income fluctuate by about $800 from month to month, a 15% swing on monthly earnings of $5,333.[9]

In contrast, salaried workers in our sample earning the same annual income see their recurring base pay fluctuate by only $267 per month (see **Figure 1**). Some salaried workers experience additional volatility from annual bonus payments. But because bonuses occur infrequently and involve only positive income deviations, they do not create the same liquidity challenges as the recurring, symmetric (both upward and downward) volatility among hourly workers.

Income risk is often discussed only in terms of job loss and unemployment. The monthly volatility we document suggests that many 401(k) participants—especially hourly workers—also require short-term savings to smooth out recurring income fluctuations *during* employment.

FIGURE 1

Hourly workers have volatile incomes and higher withdrawal rates



Notes: The standard deviation of monthly income is 15% for the average hourly worker, and 5% for base pay for the average salaried worker. To translate these percentages into dollar terms, we use an annual income of $64,000 (monthly income of $5,333), which is the median among the hourly workers in our sample. Dollar amounts are gross figures (before tax withholding and other deductions) and are inflation-adjusted to 2022 terms. Participants are classified as hourly if at least 45% of their observable paychecks change by at least $1 relative to the lagged paycheck value. The remaining participants for whom fewer than 45% of paychecks change by at least $1 are classified as salaried. Annual bonus amounts among salaried workers (inferred from large positive paycheck spikes) are excluded from the analysis. We computed the cash-out rate among participants who left their jobs. The hardship withdrawal and loan origination rates are annual rates (so the denominator is the number of distinct participant-year combinations in the sample).

Source: Vanguard.

9 These dollar amounts are gross figures (before tax withholding and other payroll deductions) and are inflation-adjusted to 2022 terms.

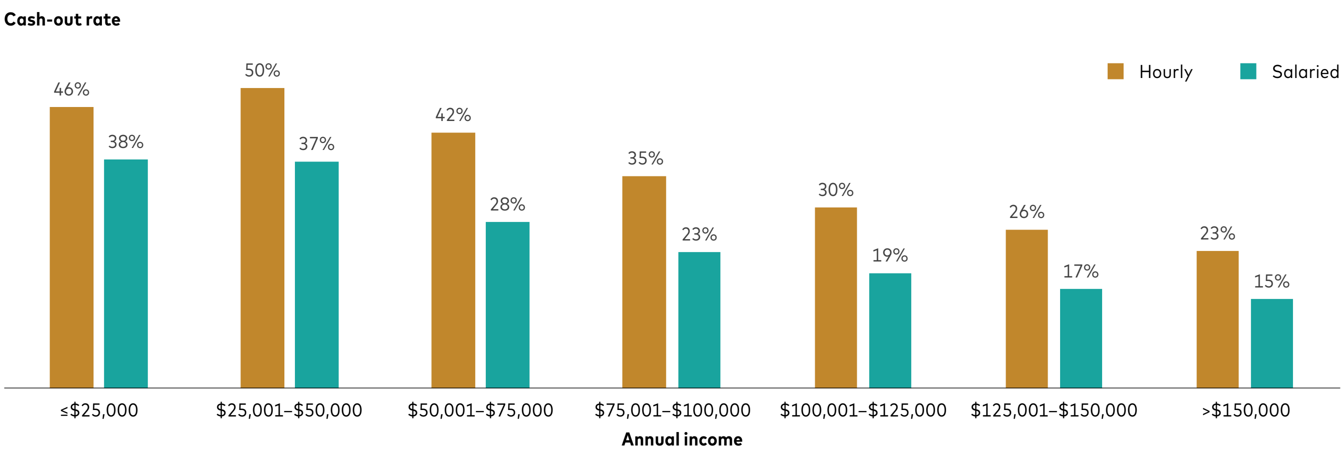
Income volatility causes 401(k) leakage

If frequent income fluctuations create short-run financial stress that results in 401(k) withdrawals, then participants with inconsistent paychecks should be more likely to take hardship withdrawals during employment and cash out when they leave their employer.[10] Figure 1 demonstrates that hardship withdrawal and cash-out rates are higher among the participants we classify as hourly. The annual hardship withdrawal rate is 2.2% for hourly workers and just 0.7% for salaried workers. Among those who leave their jobs, 42% of hourly workers take a cash distribution, while only 21% of salaried workers cash out.

Because lower-income workers tend to cash out more, we compare cash-out rates among hourly and salaried workers within annual income categories (see **Figure 2**). Across the income spectrum, hourly workers are consistently 10–15 percentage points more likely to cash out than salaried workers.

FIGURE 2

Hourly workers have higher cash-out rates than salaried workers with similar annual incomes



Notes: The figure considers only participants who have left their jobs. Participants are classified by their average annual income across the sample period. Participants are classified as hourly if at least 45% of their observable paychecks change by at least $1 relative to the lagged paycheck value. The remaining participants for whom fewer than 45% of paychecks change by at least $1 are classified as salaried. Annual income figures are in real 2022 terms.

Source: Vanguard.

10 Hardship withdrawals (which are generally subject to the 10% early withdrawal penalty) allow participants experiencing financial stress to withdraw 401(k) savings during employment. Hardship withdrawals are rarer than cash-outs in part because they are subject to tighter regulation: Participants must provide documentation of a specific financial hardship and may only withdraw an amount necessary to cover the documented hardship. The overall hardship withdrawal rate rose from 2.1% in 2021 to 3.6% in 2023 (Vanguard, 2025).

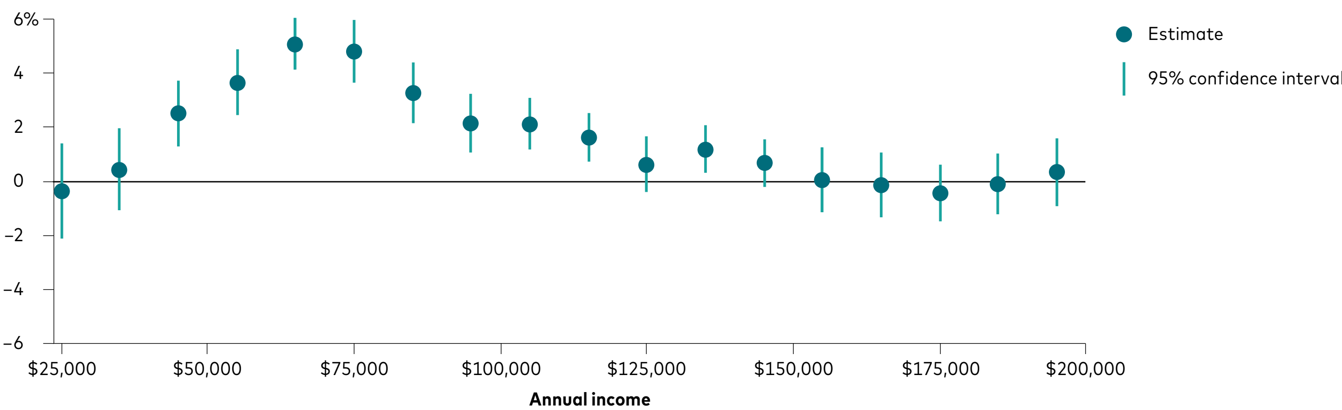
Figure 3 shows the increase in the cash-out rate that results from a 15% increase in the standard deviation of monthly income (the typical level of volatility among hourly workers in our sample), controlling for participant and plan characteristics (including annual income, age, and employment tenure). The relationship is strongest among the middle-income participants who are most likely to face liquidity challenges. The peak effect occurs for participants with annual incomes between $60,000 and $70,000, for whom a 15% increase in volatility raises the cash-out rate by 5.1 percentage points. (Given the overall cash-out rate of 33%, this is a substantial proportional increase in cash-out probability.)

When participants cash out, they usually withdraw their entire 401(k) balance. As a result, the cash-out effects we document in Figures 2 and 3 have significant implications in dollar terms: The median cash-out amount among the hourly group is $3,700, and the average amount is $12,400.

FIGURE 3

The effect of income volatility on cash-out probability is strongest for middle-income participants

Effect of a 15% increase in monthly income volatility on cash-out probability (in percentage points)



Notes: We restrict the sample to participants who leave their jobs during the sample period and for whom cash-outs are penalized (those younger than 55 at the end of the calendar year in which they leave their job). The figure shows estimates from a regression where observations are participants and cash-out probability is the dependent variable. The coefficient estimates give the effect of a 15% increase in monthly income volatility (the average level of monthly income volatility among the hourly workers in our sample). We estimate separate volatility effects for annual income buckets that are $10,000 wide (on the horizontal axis). The regression specification controls for average annual income during employment age, at separation, plan tenure at separation, plan fixed effects, and year fixed effects. Annual income figures are in real 2022 terms. Error bars give 95% confidence intervals.

Source: Vanguard.

Emergency savings reduce 401(k) leakage

The connection between income volatility and leakage suggests many participants take 401(k) withdrawals because they lack liquid emergency savings. To assess this hypothesis more directly, we asked roughly 2,300 individuals who participated in a Vanguard-administered 401(k) plan in 2024 about their emergency savings.[11]

Specifically, we asked: *How confident are you that you could find the money to pay for an emergency that costs about $2,000?*

The answer choices (and associated response shares) were:

☐ Entirely confident (52%).

☐ Somewhat confident (24%).

☐ Not at all confident (24%).

We considered participants to have $2,000 in emergency savings if they chose "entirely confident." Hourly workers with more volatile incomes were less likely to have $2,000 in emergency savings: 39% of hourly workers chose "entirely confident," compared with 71% of salaried workers.

We found that participants with emergency savings contribute more to their 401(k) accounts and take fewer withdrawals both during and after leaving the job. Even when controlling for annual income, age, and employment tenure, emergency savings strongly predict retirement wealth accumulation (**Figure 4**).

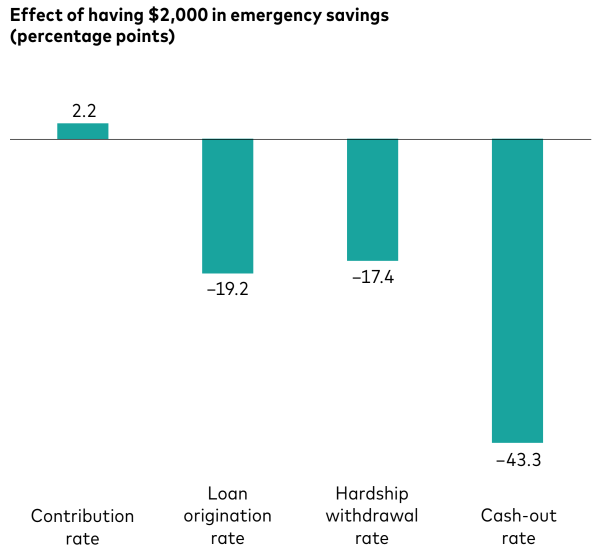
Participants with $2,000 in emergency savings:

- Contribute an additional 2.2 percentage points of income;
- Are 19 percentage points less likely to take a loan; and
- Are 17 percentage points less likely to take a hardship withdrawal.

Additionally, among the relatively small sample of participants who left their jobs after responding to the survey, those with $2,000 in emergency savings are 43 percentage points less likely to cash out.[12] Interestingly, the initial $2,000 in emergency savings is a better predictor of 401(k) withdrawal rates than a different survey question asking whether participants had at least three months' worth of expenses saved. This suggests that even a modest emergency buffer can go a long way.

FIGURE 4

Participants with emergency savings contribute more and withdraw less from their 401(k) accounts



Notes: The figure considers 2,355 workers who responded to an emergency savings survey in July 2024 and participated in a Vanguard-administered 401(k) plan for all of 2024. The survey question asked, "How confident are you that you could find the money to pay for an emergency that costs about $2,000?" We classify participants as having $2,000 in emergency savings if they answered "entirely confident" (rather than "somewhat confident" or "not at all confident"). We analyze contribution and withdrawal behaviors in Vanguard's administrative recordkeeping data (that is, we do not rely on participants to report these behaviors in the survey). The figure shows estimates from regressions that control for annual income, age, employment tenure, and plan fixed effects. Contribution, loan origination, and hardship withdrawal rates are annual rates from 2024 data. We analyze cash-out rates for a subset of 140 participants who left their jobs in 2025. All regression estimates shown in this figure are statistically significant at the 1% level.

Source: Vanguard.

11 For a complete description of the survey sample, see Costa, Martino, and de la Fuente (2025).

12 Of the roughly 2,300 survey respondents (who were all employed at Vanguard-administered plans at the end of 2024), 140 left their jobs in 2025.

Help workers save for both the short and long run

Workers have both short- and long-term saving needs. Strong 401(k) plan design has helped employees work toward their long-term retirement goals, but pre-retirement withdrawals undermine this progress.

By showing that monthly income volatility makes hardship withdrawals and cash-outs more likely, we identify short-term liquidity constraints as an explanation for pre-retirement leakage. Facilitating emergency savings may therefore be an effective way to preserve more of participants' 401(k) wealth and reduce early withdrawal penalties.

Emergency savings can deliver a wide range of benefits. In a recent survey of Vanguard investors, the single strongest predictor of financial well-being was having $2,000 in emergency savings. Individuals with sufficient emergency savings also reported spending four fewer work hours per week distracted by their finances (Costa, Martino, and de la Fuente, 2025). Echoing these survey findings, academic research has demonstrated an empirical link between employees' financial stress and their performance at work (Meuris and Leana, 2018). Our analysis focuses on cash-out decisions made during job transitions, but the potential psychological and productivity benefits of short-term savings are relevant throughout employees' job tenures.

Most workers save for emergencies outside of the workplace. Our research indicates that short-term liquid saving and long-term retirement saving can be complementary features of a holistic approach to employee financial wellness. By offering workplace access to emergency savings accounts alongside their existing 401(k) plans, employers can support workers as they save for both the short and the long run.[13]

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13 The SECURE 2.0 Act allows plan sponsors to establish emergency savings accounts (PLESAs) within their 401(k) plans. But because PLESAs are administratively complex and subject to strict dollar limits (an employee's PLESA balance may not exceed $2,500), employers may find that the best place for emergency savings is in separate accounts outside the 401(k) plan.

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