Vanguard | VIEWPOINTS

How America Saves 2025

Data that leads

Contents

Lauren Valente
Managing Director
Vanguard Workplace Solutions

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As we mark our 50th year, I'm proud to present the 24th edition of *How America Saves*. This highly anticipated industry report—which reflects our commitment to provide new data, fresh insights, and expert analysis—spotlights the saving behaviors of nearly 5 million Vanguard participants. It is the most comprehensive look at the progress made, the challenges that remain, and the opportunities that lie ahead. With this detailed study of the state of retirement savings in America, we offer a blueprint to help create a more secure financial future for all.

The report shows that, despite economic pressures and uncertainties, plan sponsors and participants continued to move forward in 2024. Sponsors and consultants leveraged the power of automatic solutions to drive participation rates to all-time highs. Additionally, widespread adoption of professionally managed allocations helped optimize participants' age-based equity exposure—and resulted in more disciplined investing.

There were signs of increased financial stress, however, highlighting the need for continued improvement. With multiple generations in the workforce, modern retirement plans must cater to a diverse range of participants by using emerging technologies and innovative experiences to guide them toward better financial decisions.

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With data and insights from *How America Saves* and our newest body of research coming out later this year, *How America Retires*, I'm confident plan sponsors can continue to create inclusive and effective retirement savings experiences that meet the needs of all employees and set them up for success at every stage of their lives.

Let's work together to make it a reality.

Lauren

Figure 1. Highlights at a glance

Vanguard recordkeeping statistics	2020	2021	2022	2023	2024
Number of participant accounts (millions)	4.7	4.7	4.9	4.9	4.8
Number of plans (thousands)	1.7	1.7	1.7	1.5	1.4
Median participant age	44	44	43	43	43
Median participant tenure (years)	7	7	7	7	6
Percentage male	56%	57%	56%	57%	57%
Median eligible employee income (thousands)	$64	$71	$74	$74	$81
Median participant income (thousands)	$73	$78	$82	$82	$89
Median nonparticipant income (thousands)	$34	$39	$42	$39	$42

1. Accumulating

	How America Saves 2025 reference	2020	2021	2022	2023	2024
Plan design—page 17						
Plans offering immediate eligibility for employee contributions	**Figure 4**	71%	72%	72%	76%	76%*
Plans offering immediate eligibility for matching contributions	**Figure 4**	57%	61%	63%	65%	65%*
Plans providing an employer contribution	**Figure 6**	96%	95%	96%	96%	96%*
Plans with automatic enrollment	**Figure 17**	54%	56%	58%	59%	61%
Plans with automatic enrollment with automatic annual increases	**Figure 18**	69%	69%	69%	69%	69%
Plans offering Roth contributions	**Figure 45**	74%	77%	80%	82%	86%
Plans offering after-tax contributions	**Figure 45**	19%	21%	22%	22%	24%
Participation rates—page 30						
Plan-weighted participation rate	**Figure 24**	85%	84%	85%	85%	85%*
Participant-weighted participation rate	**Figure 24**	81%	82%	82%	82%	82%*
Voluntary enrollment participant-weighted participation rate	**Figure 31**	65%	64%	64%	66%	64%*
Automatic enrollment participant-weighted participation rate	**Figure 31**	92%	93%	94%	94%	94%*
Participants using catch-up contributions (if offered)	**Figure 42**	16%	15%	16%	16%	16%*
Participants using Roth (if offered)	**Figure 43**	15%	15%	16%	17%	18%*
Participants using after-tax (if offered)	**Figure 44**	10%	11%	10%	10%	10%*
Employee deferrals—page 36						
Average participant deferral rate	**Figure 33**	7.3%	7.4%	7.3%	7.7%	7.7%*
Median participant deferral rate	**Figure 33**	6.1%	6.4%	6.2%	6.8%	6.8%*
Percentage of participants deferring more than 10%	**Figure 35**	23%	23%	22%	25%	25%*
Percentage of participants increasing their deferral rate	**Figure 34**	41%	42%	39%	43%	45%
Participants reaching 402(g) limit ($23,000 in 2024)	**Figure 41**	14%	14%	14%	13%	14%*
Average total contribution rate (participant and employer)	**Figure 46**	11.3%	11.6%	11.7%	12.0%	12.0%*
Median total contribution rate (participant and employer)	**Figure 46**	10.5%	10.8%	11.0%	11.5%	11.5%*
Account balances—page 48						
Average balance	**Figure 51**	$129,157	$141,542	$112,572	$134,128	$148,153
Median balance	**Figure 51**	$33,472	$35,345	$27,376	$35,286	$38,176

* These figures are estimated for 2024, as the data required to compute them will not be available until December 2025.

(Continued)

2. Managing

	How America Saves 2025 reference	2020	2021	2022	2023	2024
Asset and contribution allocations—page 55						
Average plan asset allocation to equities	**Figure 58**	72%	74%	72%	74%	75%
Average plan contribution allocation to equities	**Figure 59**	77%	77%	78%	79%	79%
Average plan asset allocation to target-date funds	**Figure 58**	37%	38%	40%	41%	42%
Average plan contribution allocation to target-date funds	**Figure 59**	60%	61%	63%	64%	64%
Participants with balanced strategies	**Figure 88**	76%	78%	79%	77%	78%
Extreme participant asset allocations (100% fixed income or equity)	**Figure 85**	8%	8%	7%	8%	7%
Plan investment options—page 59						
Average number of funds offered	**Figure 62**	17.5	17.5	17.4	17.5	17.5
Average number of funds used	**Figure 62**	2.5	2.4	2.4	2.3	2.3
Percentage of plans designating a QDIA	**Figure 69**	87%	88%	88%	88%	89%
Among plans designating a QDIA, percentage target-date fund	**Figure 69**	97%	97%	98%	98%	98%
Plans offering target-date funds	**Figure 73**	95%	95%	96%	96%	96%
Participants using target-date funds (when offered)	**Figure 73**	80%	82%	83%	83%	84%
Plans offering managed account program	**Figure 73**	39%	41%	41%	43%	45%
Participants offered managed account program	**Figure 73**	71%	74%	77%	77%	79%
Participants with professionally managed allocations	**Figure 76**	62%	64%	66%	66%	67%
Participants using a single target-date fund	**Figure 76**	54%	56%	59%	58%	59%
Participants using a single risk-based balanced fund	**Figure 76**	1%	1%	<1%	1%	1%
Participants using a managed account program	**Figure 76**	7%	7%	7%	7%	7%
Plans offering company stock	**Figure 73**	8%	8%	8%	8%	8%
Participants using company stock	**Figure 73**	9%	8%	8%	7%	7%
Participants with >20% company stock	**Figure 88**	3%	3%	3%	2%	2%
Investment returns—page 85						
Average 1-year participant total return rate	**Figure 93**	15.1%	14.6%	(15.8%)	18.1%	13.7%
Average 1-year participant personal return rate	**Figure 93**	16.5%	13.6%	(15.9%)	17.6%	12.7%
Trading activity—page 90						
Participant-directed trading	**Figure 97**	10%	8%	6%	5%	5%

(Continued)

3. Accessing

	How America Saves 2025 reference	2020	2021	2022	2023	2024
Plan loans—page 96						
Plans offering loans	**Figure 103**	79%	81%	82%	81%	80%
Participants with an outstanding loan (if offered)	**Figure 104**	13%	13%	12%	13%	13%
Plan withdrawals—page 100						
Plans offering hardship withdrawals	**Figure 109**	95%	94%	95%	94%	94%
Participants using hardship withdrawals (if offered)	**Figure 110**	1.7%	2.1%	2.8%	3.6%	4.8%
Participants using nonhardship withdrawals (if offered)	**Figure 110**	3.4%	4.0%	3.6%	4.0%	4.5%
Plan distributions and rollovers—page 103						
Terminated participants preserving assets	**Figure 120**	83%	83%	81%	82%	83%
Assets preserved that were available for distribution	**Figure 120**	98%	98%	97%	97%	97%
Participant access methods—page 109						
Participants registered for website account access	**Figure 121**	79%	79%	79%	80%	80%

Source: Vanguard 2025.

Executive summary

Over the past two decades, retirement plan sponsors have increasingly turned to automatic solutions to help employees save more for retirement. As a result, plan participation rates have increased, automatic enrollment designs are stronger, and participant portfolio construction has continued to improve with more age-appropriate asset mixes and less extreme equity allocations.

There were several notable economic trends in 2024. The U.S. economy remained strong with real gross domestic product growth. Inflation continued to moderate toward the Federal Reserve target rate, and unemployment remained low, leading to increases in real earnings for workers. Strong consumer spending followed.

However, while the Federal Reserve began to lower the federal funds rate during the second half of the year, mortgage rates remained elevated, and household debt continued to rise. Meanwhile, the S&P 500 ended with a robust gain of 25%, while the U.S. bond market saw a modest gain of 1%.

Despite all that, our findings reveal that participant retirement plan behaviors remained largely unaffected in 2024.

Accumulating plan assets

Growth of automatic saving features

The adoption of automatic enrollment has more than tripled since year-end 2007, the first year after the Pension Protection Act (PPA) of 2006 took effect. At year-end 2024, 61% of Vanguard defined contribution (DC) plans had adopted automatic enrollment, including 78% with at least 1,000 participants. **See automatic enrollment trends on page 26.**

Two-thirds of automatic enrollment plans have implemented automatic annual deferral rate increases. Additionally, automatic enrollment defaults have increased over the past decade. Sixty-one percent of plans now default employees at a deferral rate of 4% or higher, up from 39% of plans in 2014. **See automatic enrollment default trends on page 29.**

Participation rates

There are two measures of participation rate. The most common measure is the average rate among a group of plans. We refer to this as the plan-weighted participation rate. In 2024, Vanguard's plan-weighted participation rate was 85%. It has risen 4 percentage points since 2015.

A second measure considers all employees in Vanguard-administered plans as if they were in a single plan. We refer to this as the participant-weighted participation rate. Among Vanguard participants, 82% of eligible employees were enrolled in their employer's retirement plan in 2024, up 4 percentage points from 2015.

Plans with automatic enrollment had a 94% participation rate, compared with 64% for voluntary enrollment plans.

Saving rates

The average deferral rate was 7.7% in 2024, an all-time high. The median deferral rate was 6.8%. Sixteen percent of participants increased their payroll deferral percentage (8% decreased it), while an additional 29% saw their deferral rate increase via an automatic increase feature—that's a boost in saving rates for nearly half (45%) of all participants.

of participants increased their deferral rate. An all-time high.

Most Vanguard plans also make employer contributions. Including both employee and employer contributions, the average total participant contribution rate was 12.0%; the median, 11.5%. These rates have increased slightly over the past several years.

When including nonparticipants, employees in automatic enrollment plans saved an average of 12.1%, considering both employee and employer contributions. Employees in voluntary enrollment plans saved an average of 7.6% because of significantly lower overall participation in the plan. **See more automatic enrollment versus voluntary enrollment comparisons beginning on page 34.**

Plan eligibility

In 2024, a record 76% of plans allowed employees to begin making voluntary contributions immediately after they joined their employer, up from 66% of plans in 2015.

of plans allowed employees to join immediately. An all-time high.

Roth

A Roth feature was offered by 86% of Vanguard plans at year-end 2024, up from 74% in 2020. Among larger plans, 95% offered the feature in 2024, and an all-time-high 18% of participants within these plans elected the option. **See more Roth data on pages 43 and 44.**

of participants made Roth contributions. An all-time high.

Employer contributions

One-half of Vanguard plans provided only a matching contribution, while 36% provided both a matching and a nonmatching employer contribution and 10% offered only a nonmatching employer contribution.

The average value of the promised match was 4.6% of pay; the median, 4.0%. Among plans with a nonmatching employer contribution, the average contribution was 5.3% of pay; the median contribution, 4.5% of pay. **See more data on employer contributions starting on page 21.**

Account balances

In 2024, the average account balance for Vanguard participants was $148,153; the median balance was $38,176. Vanguard participants' average account balances have increased by 10% since year-end 2023, driven by an increase in equity and bond markets and ongoing contributions over the year.

Average account balances have increased by 10% since year-end 2023.

Managing participant accounts

Advice

For their participants who need help with investing and planning decisions, plan sponsors are increasingly offering managed account advice services. Forty-five percent of Vanguard DC plans offered such services in 2024, including 8 in 10 larger plans. Nine percent of participants used a managed account advice service if offered.

Target-date funds

Ninety-six percent of plans offered target-date funds at year-end 2024. An important factor driving the use of target-date funds is their role as an automatic or default investment strategy. The qualified default investment alternative (QDIA) regulations promulgated under the PPA continue to influence adoption of target-date funds. Among plans designating a QDIA, 98% were target-date funds. Two percent were balanced funds.

Eighty-four percent of all participants used target-date funds, and 71% of target-date investors had their entire account invested in a single target-date fund.

Professionally managed allocations

The rising prominence of professionally managed allocations has been essential to improvements in portfolio construction. Participants with professionally managed allocations have their entire account balance invested in a single target-date or balanced fund or in a managed account advisory service. **See the growth of professionally managed allocations on page 70.**

of Vanguard participants were in a professionally managed allocation. An all-time high.

At year-end 2024, a record 67% of Vanguard participants were in an automatic investment program—compared with 9% at year-end 2005 and 40% at year-end 2013. Sixty percent were invested in a single target-date or balanced fund, and 7% had a managed account. These professionally managed investment portfolios are significantly more diversified than those of participants who make their own choices.

Participant portfolio construction

Participant portfolio construction has improved dramatically over the past 20 years. Seventy-eight percent of participants had a balanced strategy in 2024, up from 39% in 2005. Two percent of participants held no equities, and only 2% had more than 20% allocated to company stock in 2024. In 2005, 13% of participants had no equities and 18% held a concentration in company stock.

Participant trading

During 2024, 5% of nonadvised participants traded within their accounts, while 95% did not initiate any exchanges.

Over the past 15 years, we have generally observed a decline in participant trading. This is partially attributable to participants' increased adoption of target-date funds. Only 1% of participants holding a single target-date fund traded in 2024. **See more trading activity details on page 90.**

Accessing plan assets

Loan activity

During 2024, loan use was in line with 2023 and remained below the typical use rates of the years before COVID-19. Thirteen percent of participants had a loan outstanding, and the average loan amount was about $11,000.

Plan withdrawals

Overall, in-service withdrawal activity rose modestly from 2023 to 2024. Hardship withdrawal activity increased, as 4.8% of participants initiated a hardship withdrawal, up from 3.6% in 2023. **See the historical hardship withdrawal trends starting on page 101.**

Assets preserved for retirement

During 2024, about one-quarter of all participants could have taken a distribution because they had separated from service in the current year or prior years. Most of these participants (83%) continued to preserve their plan assets for retirement by either remaining in their employer's plan or rolling over their savings to an IRA or new employer plan. In terms of assets, 97% of all plan assets available for distribution were preserved, and only 3% were taken in cash.

Distribution options

Plan sponsors are always looking for ways to help retirees within the plan. In 2024, 68% of plans allowed retirees to take installments. Forty-three percent of plans allowed for partial withdrawals, up from 27% in 2018.

of all plan assets available for distribution were preserved, and only 3% were taken in cash.

DC retirement plans

Defined contribution (DC) plans are the predominant type of retirement plan sponsored by private-sector employers in the United States, covering half of all private-sector workers. Although there is still a significant minority of individuals eligible for such plans who fail to participate in them, DC plans have nonetheless enabled millions of American workers to accumulate savings for retirement.

Covering

of all private-sector workers

The performance of DC plans can be measured in several ways:

Accumulating plan assets

Plan contributions are essential to retirement savings adequacy. Employee participation rates, participant deferral rates, and the value of employer contributions all affect plan contributions. Participant deferral behavior is increasingly influenced by employers' automatic enrollment and automatic escalation default designations. Overall, retirement plan design varies substantially across employers—and variation in the level of employer contributions affects the employee contributions needed to accumulate sufficient retirement savings.

Managing participant accounts

After participants decide to contribute to a retirement savings plan, their most important decision is how to allocate their holdings among the major asset classes.

As with deferral decisions, many investment decisions are increasingly influenced by employer-established defaults. The growing use of all-in-one portfolio strategies such as target-date funds and managed account programs also plays a role. These investment decisions—including the types of investment options offered by the plan and the choices participants or employers make from among those options—have a direct impact on account performance over time. Thus, investment choices, in conjunction with the level of plan contributions, ultimately influence participants' level of retirement readiness.

Accessing plan assets

Participants may be able to take a loan or an in-service withdrawal to access their savings while working. When changing jobs or retiring, they typically have the option of remaining in the plan, rolling over to another plan or IRA, or taking a cash lump sum.

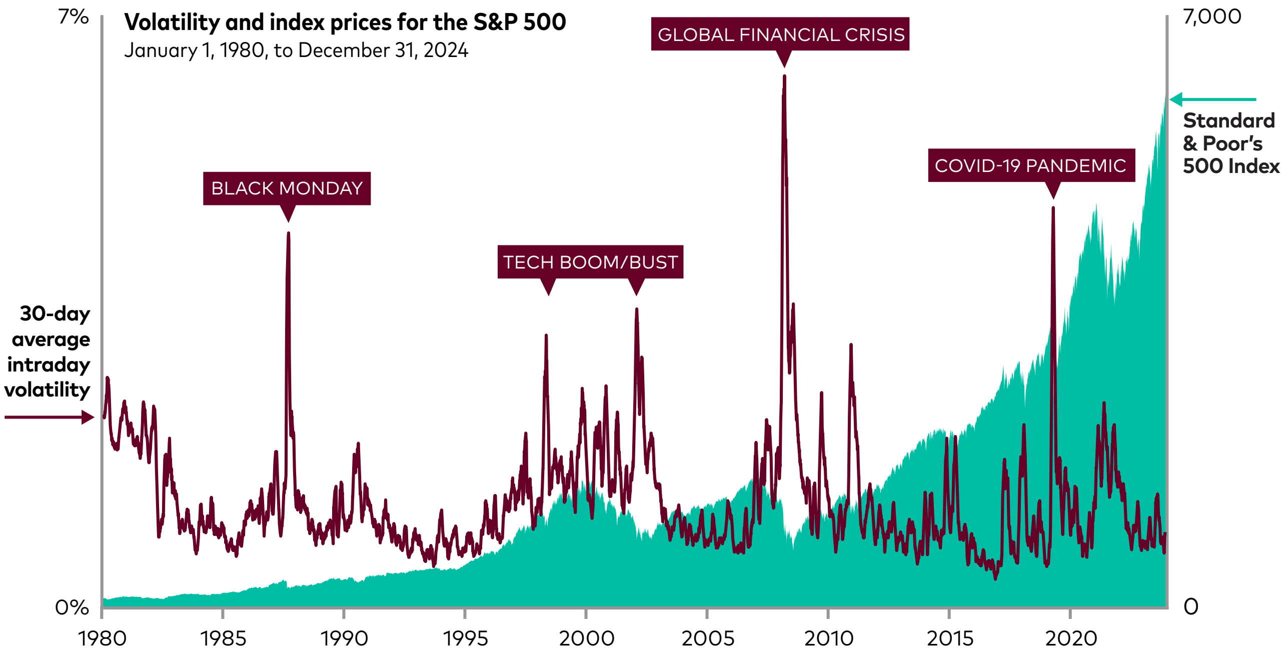
DC retirement plans are the centerpiece of the private-sector retirement system in the United States. More than 100 million Americans are covered by DC plan accounts, with more than $12 trillion in assets.[1]

1 U.S. Department of Labor, ***Private Pension Plan Bulletin Historical Tables and Graphs 1975-2022***, September 2024; and Investment Company Institute, ***Quarterly Retirement Market Data, Fourth Quarter 2024,*** March 2025.

Market overview

Stock prices increased by 23% in 2024 **(Figure 2)**. Volatility decreased, with 20% of trading days seeing a change in stock prices of +/–1%, compared with 25% of trading days in 2023. No trading days experienced a change of +/–3%.

Figure 2. Standard & Poor's 500 Index daily volatility and close



Note: Intraday volatility is calculated as daily range of trading prices [(high-low)/opening price] for the S&P 500 Index.

Source: Vanguard calculations, using data from Bloomberg.

Past performance is no guarantee of future results. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Section 1: Accumulating plan assets

Historically, employees have had to decide whether to participate in their employer's plan and at what rate to save. Employers are now increasingly making these decisions for employees through automatic enrollment.

Plan design

DC plans with employee-elective deferrals can be grouped into four categories based on the type of employer contributions made to the plan: (1) plans with matching contributions; (2) plans with nonmatching employer contributions; (3) plans with both matching and nonmatching contributions; and (4) plans with no employer contributions. Nonmatching contributions are typically structured as a variable or fixed profit-sharing contribution or less frequently as an employee stock ownership plan (ESOP) contribution.

In employee-contributory DC plans, employer contributions are typically a secondary source of plan funding. Both the type and the amount of employer contributions vary substantially across plans.

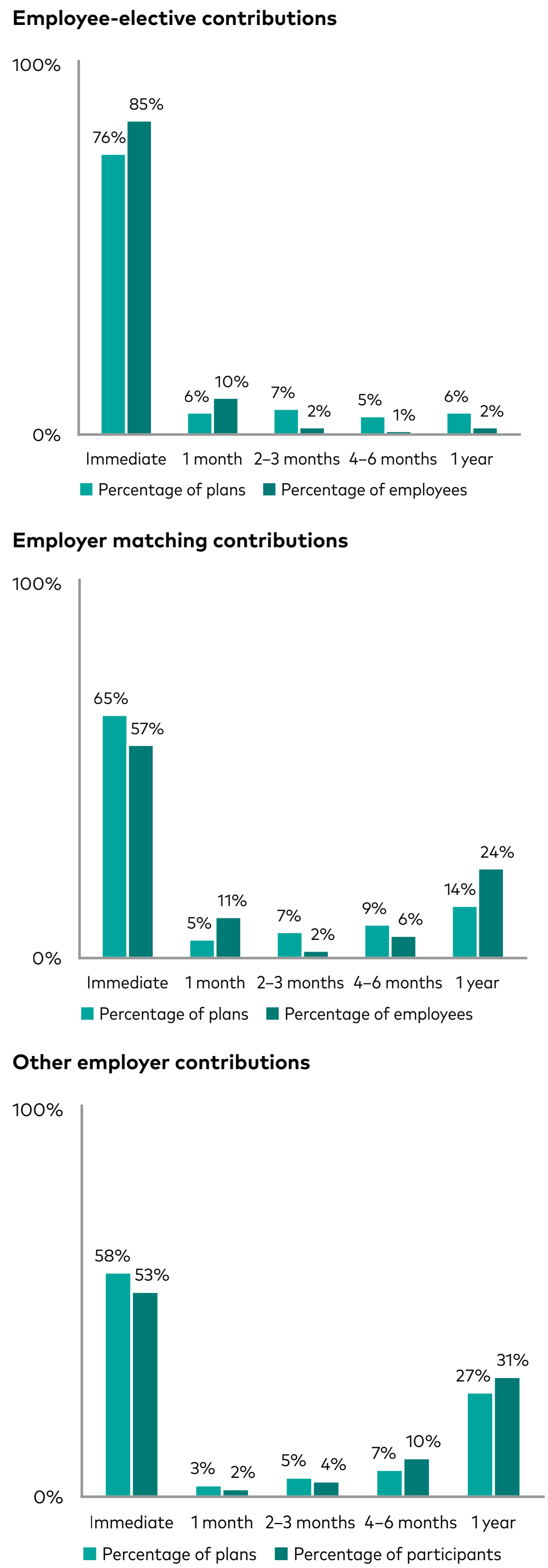
Eligibility

In 2024, 3 in 4 Vanguard plans allowed employees to make voluntary contributions immediately after they joined their employer **(Figure 3)**. Larger plans were more likely than smaller plans to offer immediate eligibility. As a result, 85% of employees qualified for immediate eligibility (estimated; see the **Methodology section on page 111**).

At the other extreme, 6% of plans required one year of service from eligible employees before allowing employee-elective contributions to the plan. Smaller plans were more likely to impose the one-year wait. As a result, only 2% of eligible employees were subject to this restriction.

Figure 3. Eligibility, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals



Source: Vanguard 2025.

Eligibility rules are more restrictive for employer contributions, including matching and other contribution types such as profit-sharing plans or ESOPs. A one-year eligibility rule is more common for employer contributions, presumably because employers want to minimize compensation costs for short-tenured employees.

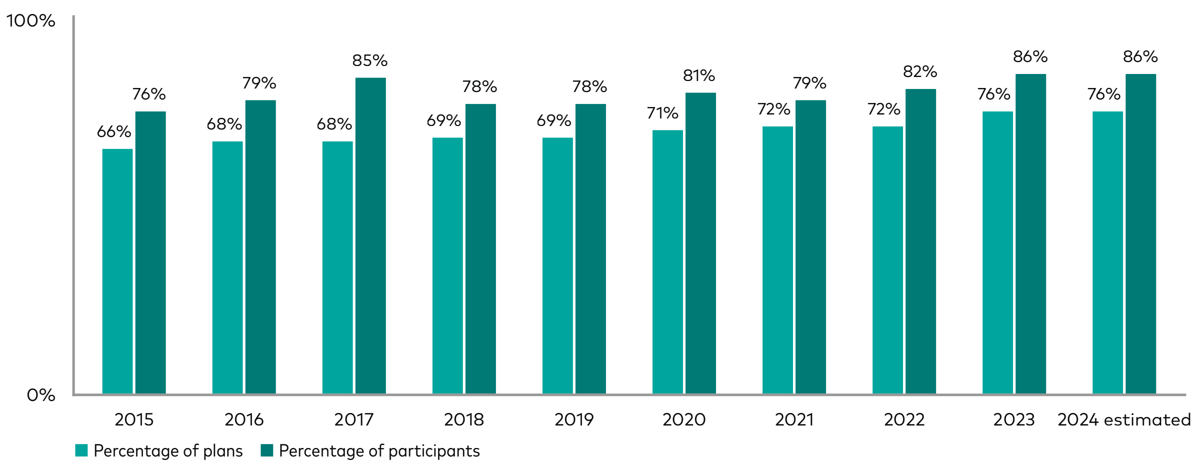
The percentage of plans permitting immediate eligibility for employee-elective contributions has risen over the past 10 years **(Figure 4)**.

In 2015, 66% of plans offered immediate eligibility; in 2024, 76% did. Because larger plans are more likely to offer immediate eligibility for employee-elective contributions, 86% of participants were in plans offering immediate eligibility in 2024. Similar trends are observed for both employer matching contributions and other employer contributions.

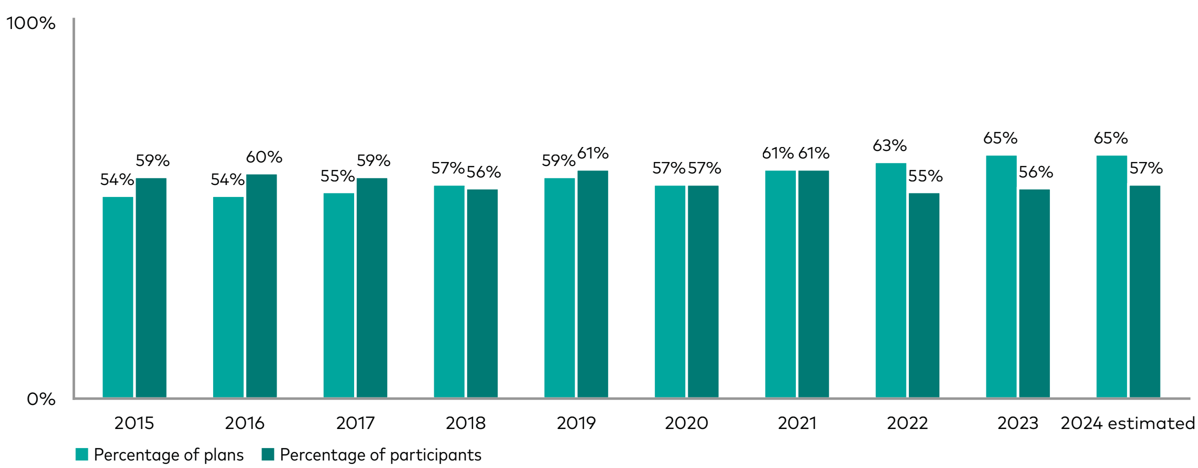
Figure 4. Immediate plan eligibility trend

Vanguard defined contribution plans permitting employee-elective deferrals

Employee-elective contributions



Employer matching contributions



Source: Vanguard 2025.

Vesting

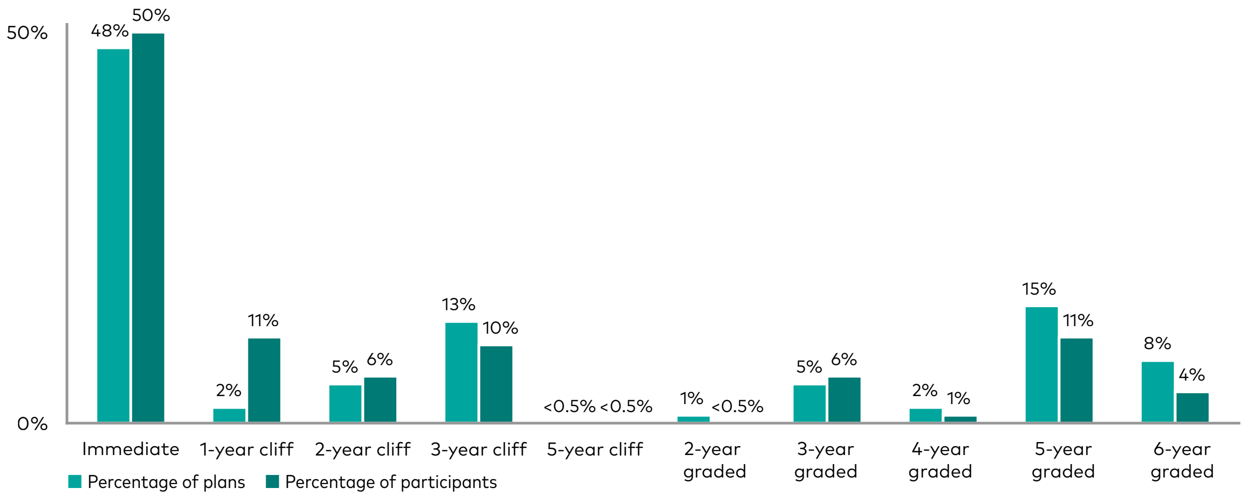
Nearly one-half of plans immediately vested participants in employer matching contributions in 2024, and 5 in 10 participants were enrolled in these plans **(Figure 5)**. One in 4 plans with employer matching contributions used a 5- or 6-year graded vesting schedule, and 1 in 6 participants with employer matching contributions were in such a plan.

Forty-three percent of plans immediately vested participants for other employer contributions, such as profit-sharing or ESOPs. On the other hand, 29% of plans with other employer contributions used a 5- or 6-year graded vesting schedule, and 1 in 4 participants receiving other employer contributions were in plans with these longer vesting schedules.

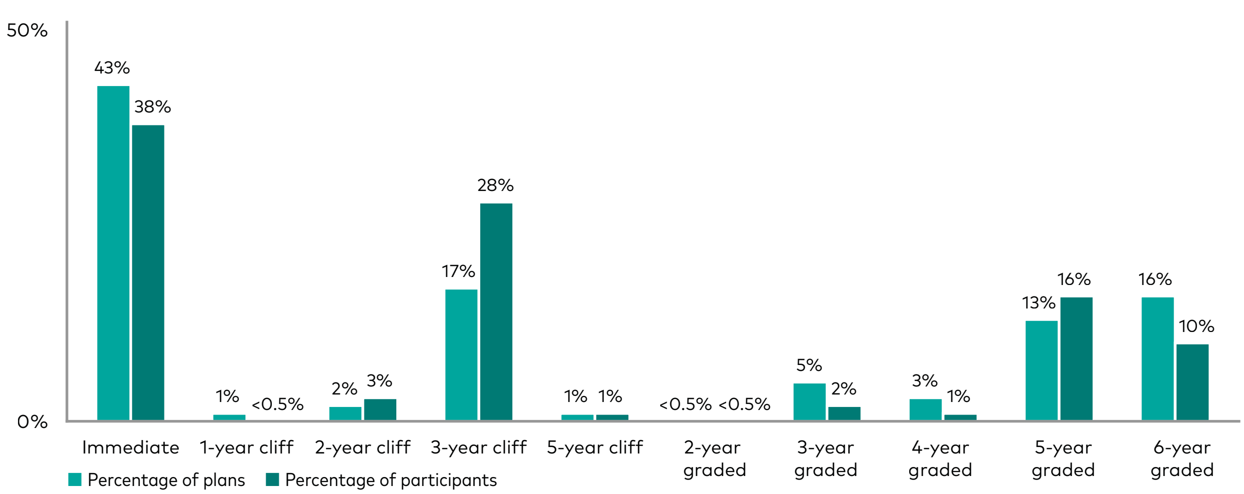
Figure 5. Vesting, 2024

Vanguard defined contribution plans with employer contributions

Employer matching contributions



Other employer contributions



Source: Vanguard 2025.

Employer contributions

One-half of Vanguard plans provided only a matching contribution in 2024, with 52% of participants in such a plan **(Figure 6)**.

Thirty-six percent of plans, covering 44% of participants, provided both a matching and a nonmatching employer contribution. Ten percent of plans provided only a nonmatching employer contribution, with 3% of participants in such a plan. Finally, 4% of plans made no employer contributions of any kind, affecting 1% of participants.

This data summarizes the incidence of employer contributions to a DC plan that accepts employee deferrals. It does not necessarily reflect the entire retirement benefits program funded by certain employers. Some employers may offer a companion employer-funded plan—such as a defined benefit (DB) plan, a stand-alone profit-sharing plan, an ESOP, or a money-purchase DC plan—in addition to an employee-contributory DC plan.

Figure 6. Types of employer contributions, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals

Type of employer contribution	Percentage of plans	Percentage of participants
Matching contribution only	50%	52%
Nonmatching contribution only	10%	3%
Both matching and nonmatching contribution	36%	44%
Subtotal	96%	99%
No employer contribution	4%	1%

Source: Vanguard 2025.

Matching contributions

The wide variation in employer contributions is most evident in the design of employer matching formulas. Among plans offering an employer match in 2024, 68% (covering 60% of participants) provided a single-tier match formula, such as $0.50 per dollar on the first 6% of pay **(Figure 7)**. Less common, used by 25% of plans (covering 30% of participants), were multitier match formulas, such as $1.00 per dollar on the first 3% of pay and $0.50 per dollar on the next 2% of pay.

Another 6% of plans (covering 9% of participants) had a single- or multitier formula but imposed a maximum dollar cap, such as $2,000, on the employer contribution. Finally, a small percentage of plans used a match formula that varied by age, tenure, or other variables.

Figure 7. Types of matching contributions, 2024 estimated

Vanguard defined contribution plans with matching contributions

Match type	Example	Percentage of plans	Percentage of participants
Single-tier formula	$0.50 per dollar on 6% of pay	68%	60%
Multitier formula	$1.00 per dollar on first 3% of pay; $0.50 per dollar on next 2% of pay	25%	30%
Dollar cap	Single- or multitier formula with $2,000 maximum	6%	9%
Other	Variable formulas based on age, tenure, or similar variables	1%	1%

Source: Vanguard 2025.

The match formula most used in Vanguard plans—and affecting the most Vanguard participants—is $0.50 per dollar on the first 6% of pay. Among plans offering a match, 13% provided this formula in 2024 **(Figure 8)**.

Figure 8. Most frequently used match formulas, 2024
Vanguard defined contribution plans with matching contributions

Match formula	Percentage of plans
50% on first 6% of pay	13%
100% on first 3% of pay, 50% on next 2% of pay	10%
100% on first 6% of pay	9%
100% on first 5% of pay	7%
100% on first 4% of pay	6%

Source: Vanguard 2025.

With so many match formulas, one way to summarize matching contributions is to calculate the maximum value of the employer-promised match. For example, a match of $0.50 per dollar on the first 6% of pay promises the same matching contribution—3% of pay—as a formula of $1.00 per dollar on the first 3% of pay.

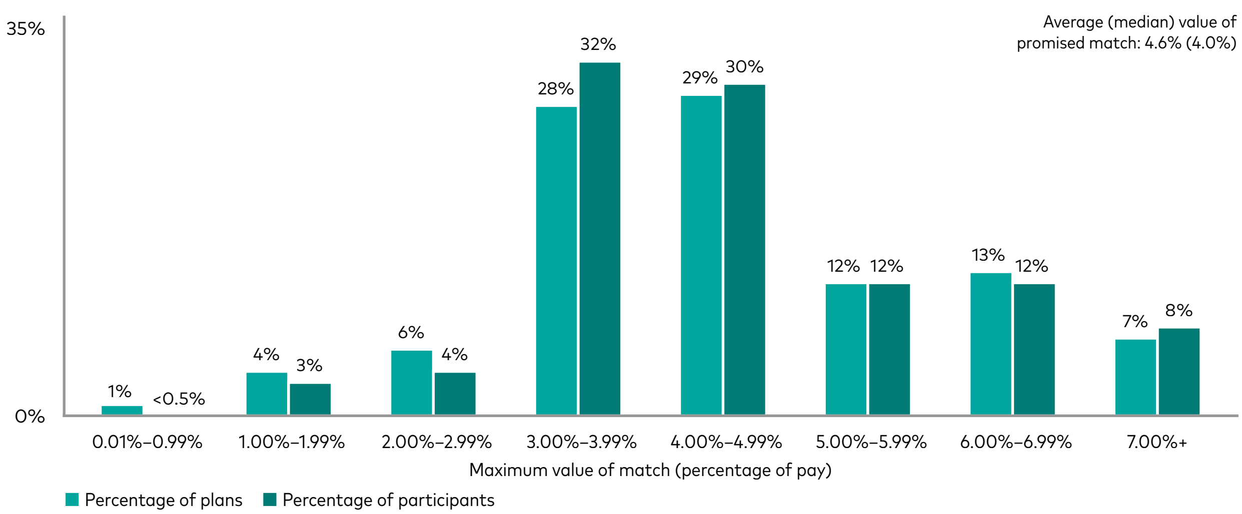
The promised value of matching contributions varied substantially from plan to plan in 2024. Among plans with single- or multitier match formulas, most promised a match of between 3.00% and 6.99% of pay **(Figure 9)**. The average value of the promised match was 4.6% of pay; the median, 4.0%.

The average promised employer match has increased slightly since 2015 **(Figure 10)**. Median promised matches have remained the same since 2015.

Another way to assess matching formulas is to calculate the employee-elective deferral needed to realize the maximum value of the match. In 2024, 8 in 10 plans (covering 79% of participants) required participants to defer between 4.0% and 6.99% of their pay to receive the maximum employer match **(Figure 11)**.

The average employee-elective deferral required to maximize the match was 6.5% of pay; the median, 6.0%. The average has decreased slightly since 2017, with values falling from 7.4% to 6.5% **(Figure 12)**. The required median deferral has remained constant, at 6.0%, during the same period.

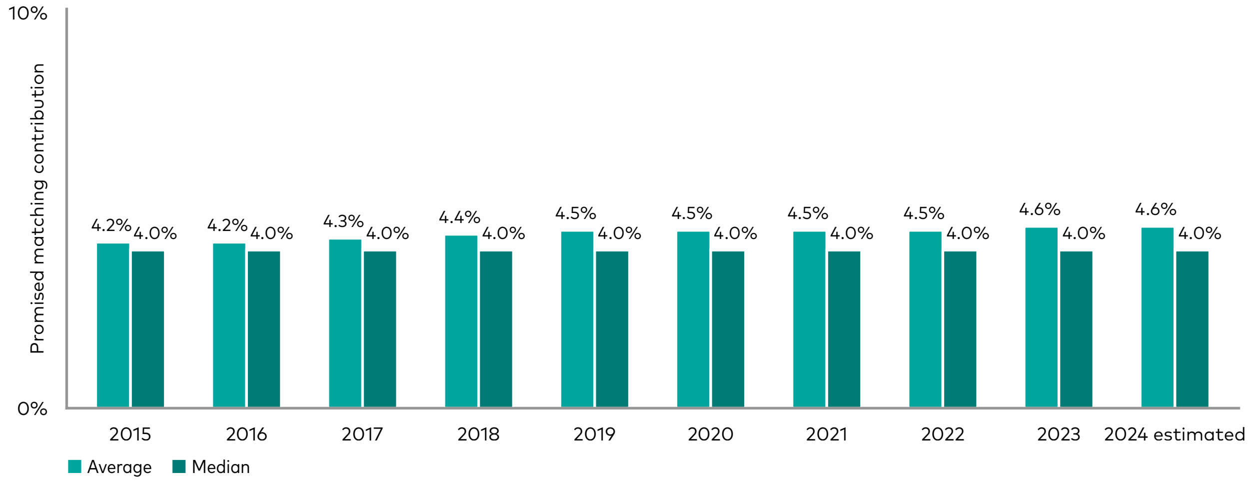
Figure 9. Distribution of promised matching contributions, 2024 estimated
Vanguard defined contribution plans permitting employee-elective deferrals with a single- or multitier match formula



Source: Vanguard 2025.

Figure 10. Promised matching contributions

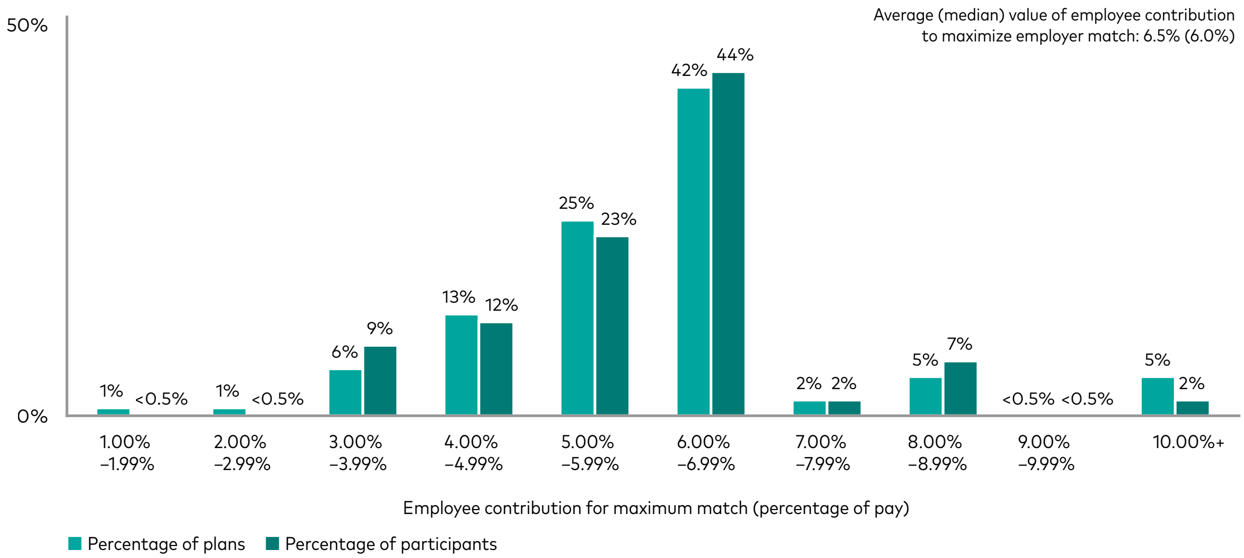
Vanguard defined contribution plans permitting employee-elective deferrals with a single- or multitier match formula



Source: Vanguard 2025.

Figure 11. Employee contributions for maximum match, 2024 estimated

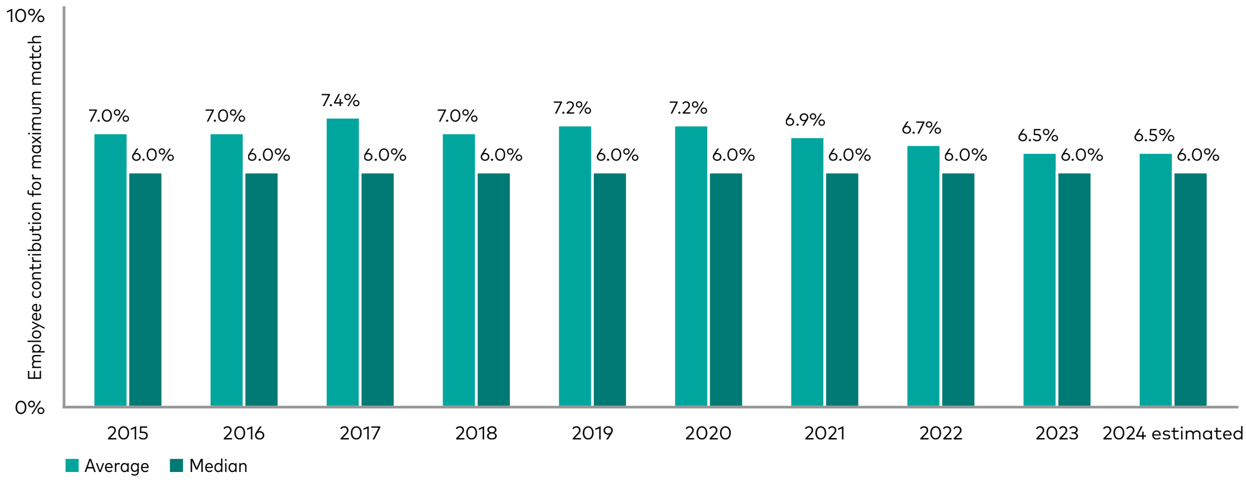
Vanguard defined contribution plans permitting employee-elective deferrals with a single- or multitier match formula



Source: Vanguard 2025.

Figure 12. Employee contributions for maximum match

Vanguard defined contribution plans permitting employee-elective deferrals with a single- or multitier match formula



Source: Vanguard 2025.

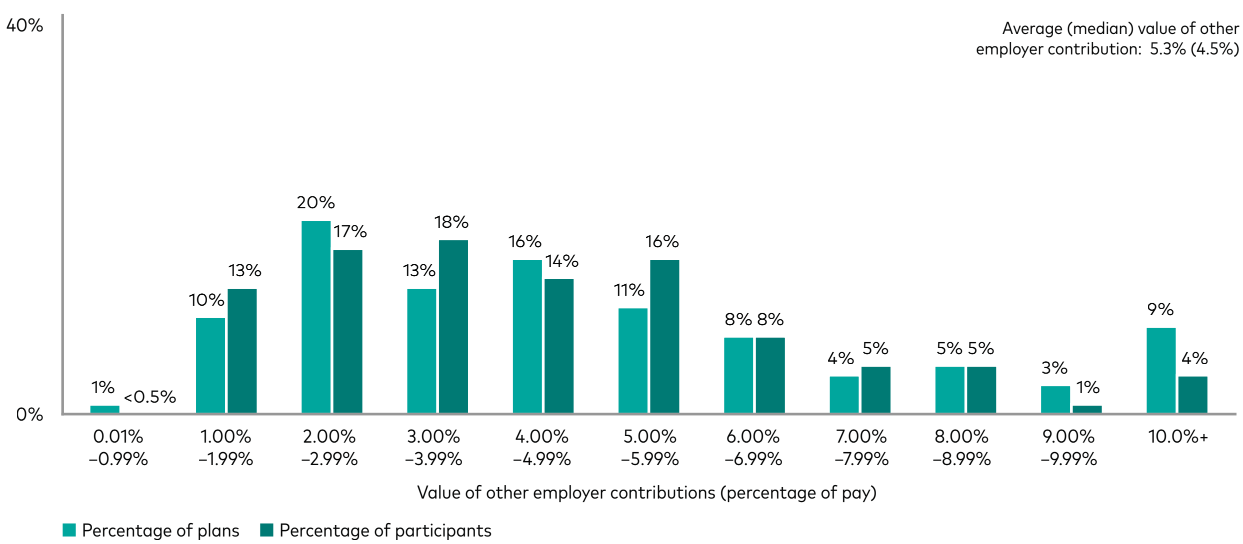
Other employer contributions

As noted earlier, in a minority of plan designs, employers may make another contribution to eligible employees' accounts in the form of a variable or fixed profit-sharing contribution or an ESOP contribution. Unlike matching contributions, these may be made on behalf of eligible employees, whether or not they contribute any part of their pay to the plan. As with matching contributions, eligibility is more restrictive for these types of employer contributions—many employees are not entitled to receive these until they complete one year of service.

The value of other employer contributions varied significantly from plan to plan in 2024. Among plans offering such contributions, 47% provided all participants with a contribution based on the same percentage of pay, while the other 53% varied the contribution by age and/or tenure. These nonmatching contributions varied in value from about 1% of pay to more than 10% of pay **(Figure 13)**. Among plans with a nonmatching employer contribution, the average contribution was 5.3% of pay; the median contribution, 4.5% of pay. The average value of other employer contributions has increased slightly from 2015 to 2024 **(Figure 14)**.

Figure 13. Other employer contributions, 2024 estimated

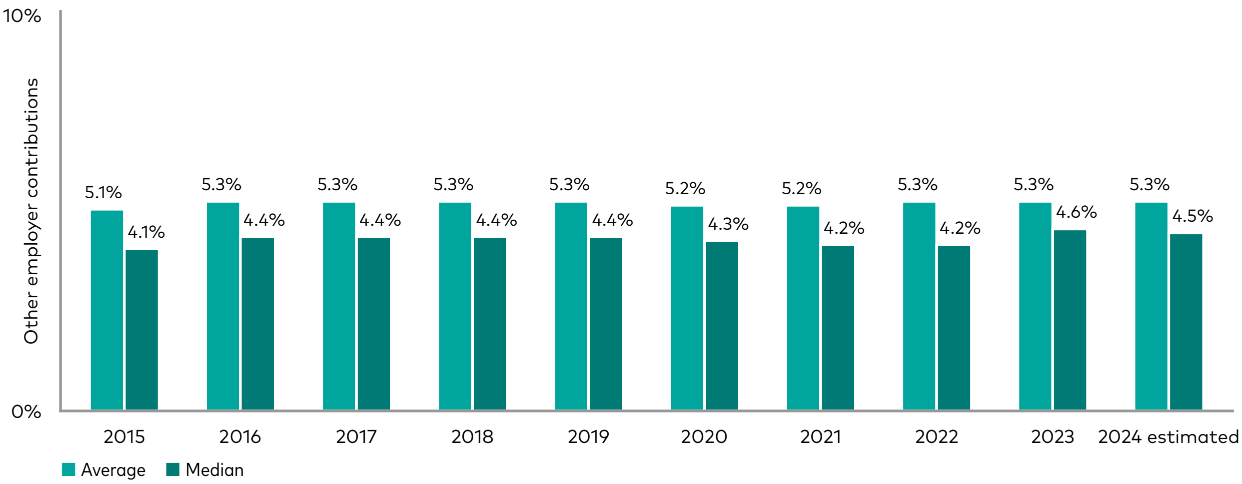
Vanguard defined contribution plans with other employer contributions



Source: Vanguard 2025.

Figure 14. Other employer contributions

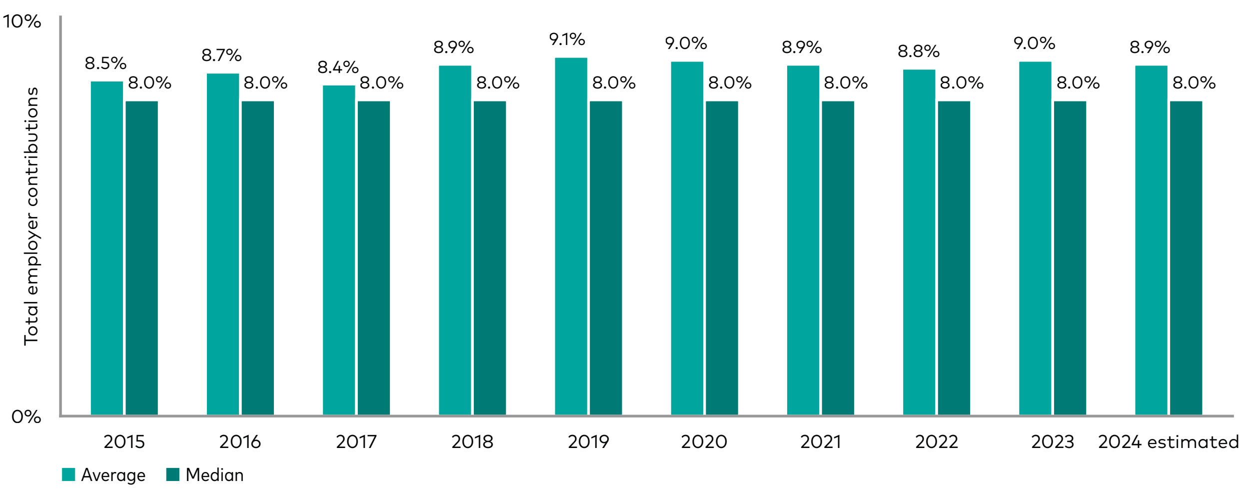
Vanguard defined contribution plans with other employer contributions



Source: Vanguard 2025.

Figure 15. Match and other employer contributions

Vanguard defined contribution plans with both match and other employer contributions



Source: Vanguard 2025.

As noted earlier, 36% of plans, covering 4 in 10 participants, provided both a matching and a nonmatching employer contribution in 2024. The median combined value of the promised match and other employer contributions was 8.0% **(Figure 15)**.

Safe harbor plan designs

Plan sponsors who do not want to perform nondiscrimination tests are able to adopt different plan design options that will satisfy the safe harbor contribution requirements. As of year-end 2024, 30% of all plans had adopted a safe harbor design **(Figure 16)**.

Figure 16. Safe harbor plan design, 2024

Vanguard defined contribution plans permitting employee-elective deferrals

Plan size (number of participants)	Percentage of plans with a safe harbor design
<500	29%
500–999	27%
1,000–4,999	30%
5,000+	37%
All plans	30%

Source: Vanguard 2025.

Automatic enrollment designs

Historically, employees in a 401(k) or 403(b) plan have had to make an active choice to join the plan, but this trend is shifting. In voluntary enrollment plans, decisions were framed as a positive election: "Decide if you'd like to join the plan." Why have some employees failed to take advantage of their employer's plan? Research in the field of behavioral finance provides explanations:

- **Lack of planning skills.** Some employees are not active, motivated decision-makers when planning for retirement. They have weak planning skills and find it difficult to defer gratification.
- **Default decisions.** Faced with a complex choice and unsure of what to do, many individuals often take the default or "no decision" choice. In the case of a voluntary saving plan, which requires that a participant take action to sign up, the "no decision" choice is a decision not to contribute to the plan.
- **Inertia and procrastination.** Many individuals deal with a difficult choice by deferring it to another day. Eligible nonparticipants, unsure of what to do, postpone their decision. While many employees know they are not saving enough and express an interest in saving more, they simply never get around to joining the plan—or to increasing their contribution rate over time if they do join.

Automatic enrollment or autopilot plan designs reframe the saving decision. With an autopilot design, individuals are automatically enrolled into the plan, their deferral rates are automatically increased each year, and their contributions are automatically invested in a balanced investment strategy. In such a plan, the decision to save is framed negatively: "Quit the plan if you'd like." And "doing nothing" leads to participation in the plan and investment of assets in a long-term retirement portfolio.

As of year-end 2024, 61% of Vanguard plans permitting employee-elective deferrals had adopted components of an autopilot design **(Figure 17)**. Plan adoption of automatic enrollment has consistently increased since 2006.

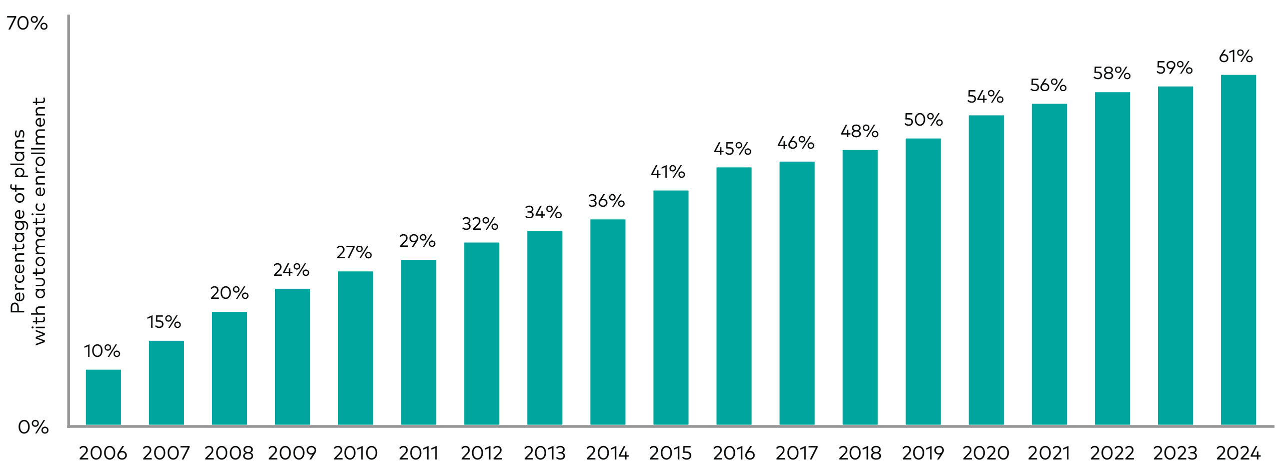
Larger plans were more likely than smaller plans to implement automatic enrollment, with 75% of larger plans doing so **(Figure 18)**. As a result, nearly 3 in 4 participants were in plans with autopilot designs, although automatic enrollment itself may only apply to newly eligible participants.

Among plans automatically enrolling employees in 2024, 69% used all three features of an autopilot design. These plans automatically enrolled employees, automatically increased deferral rates annually, and automatically invested participants' assets in a balanced fund. Another 3 in 10 plan sponsors automatically enrolled employees and invested participants' assets in a balanced fund but did not automatically increase participant deferral rates.

Automatic enrollment adoption varied by industry group **(Figure 19)**. Plans in the manufacturing industry group were the most likely to use automatic enrollment, with 77% of plans offering it; plans in the education and health industry group were the least likely to automatically enroll employees (49%).

Figure 17. Automatic enrollment adoption

Vanguard defined contribution plans with employee-elective contributions



Source: Vanguard 2025.

Figure 18. Automatic enrollment design by plan size, 2024

Vanguard defined contribution plans with employee-elective deferrals

	Number of participants				
	All	**<500**	**500–999**	**1,000–4,999**	**>5,000**
Percentage of plans with employee-elective contributions offering automatic enrollment	**61%**	**40%**	**76%**	**79%**	**75%**
Percentage of participants in plans offering automatic enrollment	**72%**	**51%**	**75%**	**81%**	**73%**
In plans offering automatic enrollment					
Percentage with automatic enrollment, automatic saving rate increases, and a balanced default fund	69%	59%	74%	74%	72%
Percentage with automatic enrollment and a balanced default fund	31%	40%	26%	26%	28%
Percentage with automatic enrollment and a money market or stable value default fund	<0.5%	1%	0%	0%	0%

Source: Vanguard 2025.

Figure 19. Automatic enrollment adoption by industry

Vanguard defined contribution plans permitting employee-elective deferrals

	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Manufacturing	56%	58%	61%	63%	66%	69%	70%	72%	73%	77%
Transportation, utilities, and communications	42%	49%	56%	57%	58%	58%	62%	63%	64%	76%
Business, professional, and nonprofit	29%	32%	34%	36%	39%	43%	45%	47%	57%	66%
Finance, insurance, and real estate	48%	49%	50%	52%	56%	59%	64%	66%	54%	66%
Media, entertainment, and leisure	45%	49%	49%	53%	55%	55%	58%	58%	59%	58%
Agriculture, mining, and construction	44%	46%	48%	50%	52%	54%	54%	52%	49%	56%
Wholesale and retail trade	51%	56%	56%	59%	59%	57%	58%	58%	55%	54%
Education and health	24%	28%	29%	33%	35%	33%	34%	37%	38%	49%

Source: Vanguard 2025.

Thirty-three percent of automatic enrollment plans had a default automatic enrollment rate of 3% in 2024 **(Figure 20)**. Sixty-nine percent of plans automatically increased the contribution rate annually. Ninety-nine percent used a target-date or other balanced investment strategy as the default fund, with 98% choosing a target-date fund.

Automatic enrollment plan design is improving. In 2024, 61% of plans chose a default of 4% or higher, compared with 25% of plans in 2006 **(Figure 21)**. In fact, 30% of plans chose a default of 6% or more—nearly double the proportion of plans choosing 6% or more in 2015.

Figure 20. Automatic enrollment design trends

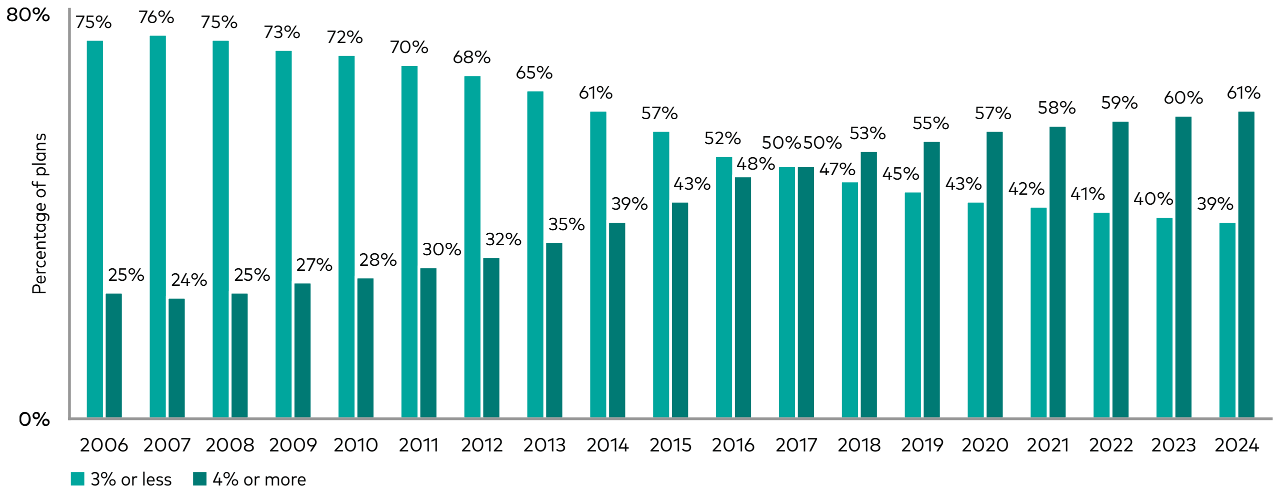
Vanguard defined contribution plans with automatic enrollment

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Default automatic enrollment rate	1 percent	1%	1%	1%	1%	2%	1%	1%	2%	2%	2%
	2 percent	8%	7%	8%	6%	5%	5%	5%	5%	5%	4%
	3 percent	48%	44%	41%	40%	38%	37%	36%	34%	33%	33%
	4 percent	16%	15%	15%	15%	15%	15%	14%	14%	14%	14%
	5 percent	11%	13%	14%	15%	16%	16%	17%	17%	17%	17%
	6 percent or more	16%	20%	21%	23%	24%	26%	27%	28%	29%	30%
Default automatic increase rate	1 percent	68%	65%	64%	64%	66%	67%	67%	66%	67%	67%
	2 percent	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%
	Voluntary election	20%	24%	25%	26%	26%	24%	24%	25%	25%	25%
	Service feature not offered	10%	9%	9%	8%	6%	7%	7%	6%	6%	6%
Default automatic increase cap	<6 percent	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
	6 percent	16%	14%	14%	13%	13%	13%	12%	12%	12%	10%
	7 to 9 percent	11%	10%	9%	7%	6%	6%	5%	6%	5%	4%
	10 percent	42%	44%	44%	46%	47%	46%	42%	41%	41%	39%
	11 to 20 percent	22%	23%	23%	23%	23%	26%	29%	32%	32%	37%
	>20 percent	2%	2%	2%	2%	2%	2%	3%	2%	4%	3%
	No cap	5%	5%	5%	7%	7%	5%	7%	5%	4%	5%
Default fund	Target-date fund	97%	97%	97%	98%	98%	98%	98%	98%	98%	98%
	Other balanced fund	2%	2%	2%	1%	1%	1%	1%	1%	1%	1%
	Subtotal	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
	Money market or stable value fund	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%

Source: Vanguard 2025.

Figure 21. Automatic enrollment default trends

Vanguard defined contribution plans with automatic enrollment



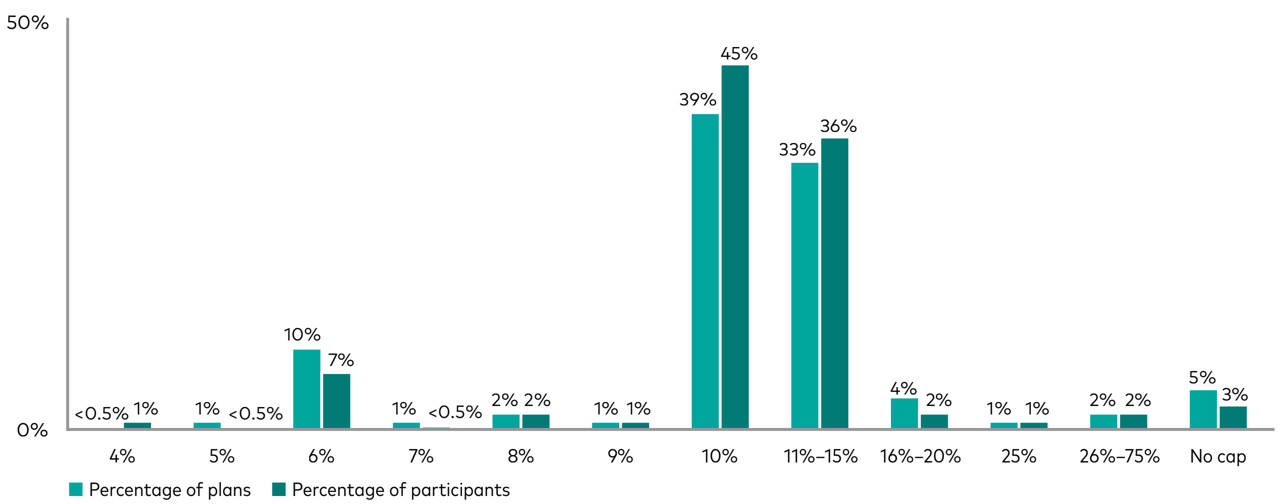
Source: Vanguard 2025.

Thirty-nine percent of plans with automatic enrollment and automatic annual increases capped the annual increase at 10%, capping 45% of annual-increase participants at that level **(Figure 22)**. One in 3 plans implemented caps between 11% and 15%. Five percent of plans had no cap—likely an error. We recommend plan sponsors set the cap at a level where participants are saving 15% or more, including employer contributions.

Plan sponsors may also elect to offer automatic annual increases in voluntary enrollment plans. Participants are then presented with the annual increase election at enrollment and when they change their employee-elective deferral rate. In 2024, 41% of plans with voluntary enrollment offered an automatic annual increase option, and three-fourths of participants in these designs had access to the option **(Figure 23)**. One in 4 participants in these plans elected automatic annual increases when offered.

Figure 22. Automatic increase plan caps

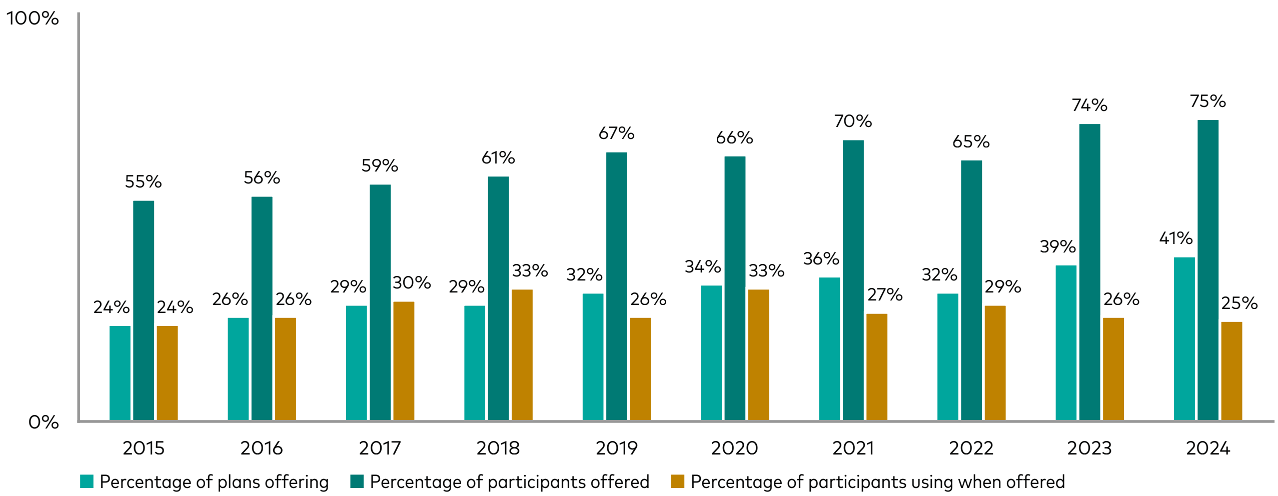
Automatic enrollment plans with an automatic annual increase as of December 31, 2024



Source: Vanguard 2025.

Figure 23. Voluntary annual increase adoption

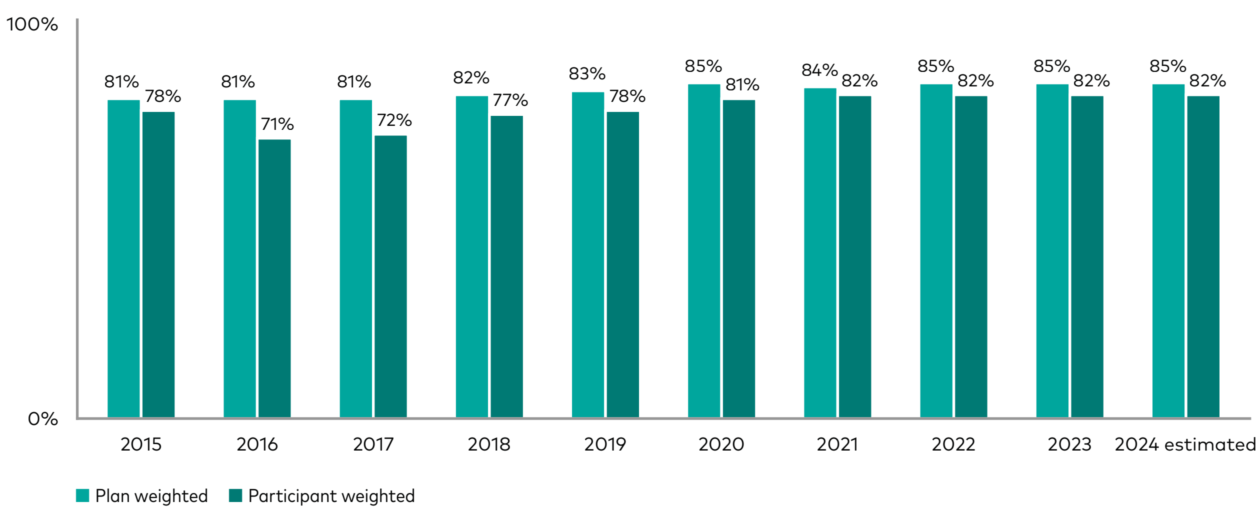
Voluntary enrollment plans with voluntary annual increase



Source: Vanguard 2025.

Figure 24. Plan participation rates

Vanguard defined contribution plans permitting employee-elective deferrals



Source: Vanguard 2025.

Participation rates

A plan's participation rate—the percentage of eligible employees who choose to make voluntary contributions—remains the broadest metric for gauging 401(k) plan performance. The most common measure of participation rates is calculated by taking the average of rates among a group of plans.

We refer to this as the plan-weighted participation rate. In 2024, Vanguard's plan-weighted participation rate was 85% (estimated; see the **Methodology section on page 111**) **(Figure 24)**. It has risen by 4 percentage points since 2015.

A second measure of participation rates considers all employees in Vanguard-administered plans as if they were in a single plan. We refer to this as the participant-weighted participation rate. Eighty-two percent of eligible employees were enrolled in their employer's voluntary saving program in 2024, a rate that has held steady since 2021, following a steady rise from 71% in 2016.

These two measures provide different views of employee participation in retirement saving plans. The first measure is a useful benchmark for an individual plan sponsor because it is calculated at the plan level; the second is a valuable measure of the progress of 401(k) plans because it looks at all eligible employees across all plans.

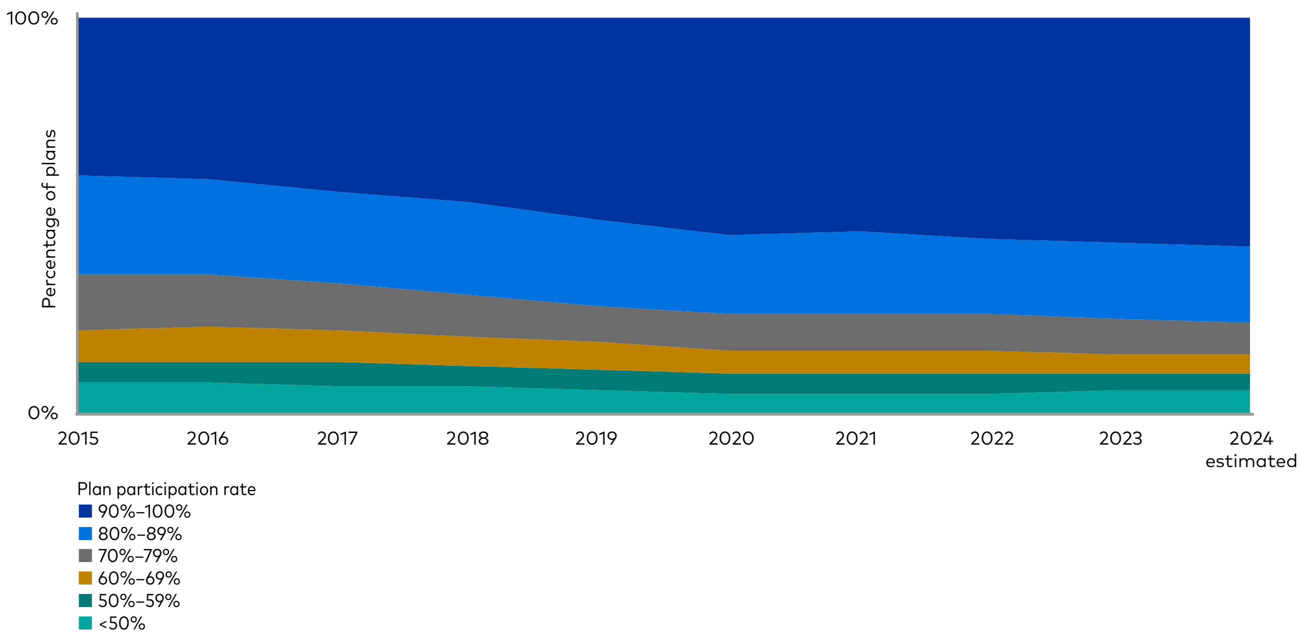
Distribution of participation rates

Participation rates varied considerably across plans. Three in 4 plans had a participation rate of 80% or higher, while 6% of plans had a participation rate below 50% **(Figure 25)**.

Plan size was a differentiator, with smaller plans having lower participation rates **(Figure 26)**, perhaps due to lower adoption of automatic enrollment designs, which are proven to increase plan participation.

Figure 25. Distribution of participation rates

Vanguard defined contribution plans permitting employee-elective deferrals



		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimated
Plan participation rate	90%–100%	40%	41%	44%	47%	51%	55%	54%	56%	57%	58%
	80%–89%	25%	24%	23%	23%	22%	20%	21%	19%	19%	19%
	70%–79%	14%	13%	12%	11%	9%	9%	9%	9%	9%	8%
	60%–69%	8%	9%	8%	7%	7%	6%	6%	6%	5%	5%
	50%–59%	5%	5%	6%	5%	5%	5%	5%	5%	4%	4%
	<50%	8%	8%	7%	7%	6%	5%	5%	5%	6%	6%
Average plan participation rate		81%	81%	81%	82%	83%	85%	84%	85%	85%	85%

Source: Vanguard 2025.

Figure 26. Participation rates by plan size

Vanguard defined contribution plans permitting employee-elective deferrals

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimated
Plan-weighted participation rate	<500	79%	79%	80%	80%	81%	83%	82%	83%	82%	82%
	500–999	83%	84%	84%	84%	85%	85%	85%	86%	86%	87%
	1,000–4,999	84%	85%	85%	86%	87%	88%	88%	88%	89%	89%
	5,000+	82%	77%	78%	82%	83%	83%	86%	86%	85%	85%
	All plans	**81%**	**81%**	**81%**	**82%**	**83%**	**85%**	**84%**	**85%**	**85%**	**85%**
Participant-weighted participation rate	<500	75%	73%	75%	72%	73%	77%	77%	80%	81%	80%
	500–999	77%	73%	77%	79%	80%	80%	80%	82%	81%	81%
	1,000–4,999	80%	78%	81%	82%	84%	85%	84%	80%	82%	84%
	5,000+	77%	67%	68%	75%	76%	79%	81%	83%	82%	82%
	All participants	**78%**	**71%**	**72%**	**77%**	**78%**	**81%**	**82%**	**82%**	**82%**	**82%**

Source: Vanguard 2025.

Participation rates by employee demographics

Participation rates also varied considerably by employee demographics **(Figure 27)**. Income was a primary determinant. Thirty-one percent of eligible employees with income of less than $15,000 contributed to their employer's DC plan in 2024, while 95% of employees with income of more than $150,000 elected to participate.

Participation rates were lowest for employees younger than 25, with 54% of these workers contributing to their employer's plan, while more than 8 in 10 employees between ages 35 and 64 made such deferrals. Tenure also played a significant role in plan participation. Seventy percent of eligible employees with less than two years on the job participated in their employer's plan; nearly 9 in 10 workers with tenure of four years or more were participants.

While men and women appeared to participate at the nearly same level, these overall averages did not account for income differences. At most income levels, women were more likely than men to join their employer's plan **(Figure 28)**. For example, 88% of women earning $50,000 to $74,999 participated in their employer's plan—compared with 84% of men in the same income group.

Participation rates also varied by industry sector **(Figure 29)**. Employees in the finance, insurance, and real estate sector had the highest plan-weighted rate, with more than 9 in 10 workers participating in their employer's plan, while employees in the wholesale and retail trade sector had the lowest rate at 75%.

Figure 27. Participation rates by participant demographics

Vanguard defined contribution plans permitting employee-elective deferrals

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimated
All		**78%**	**71%**	**72%**	**77%**	**78%**	**81%**	**82%**	**82%**	**82%**	**82%**
Income	<$15,000	27%	33%	18%	38%	36%	46%	41%	40%	32%	31%
	$15,000–$29,999	48%	48%	45%	54%	57%	58%	58%	57%	49%	49%
	$30,000–$49,999	75%	69%	68%	71%	74%	75%	75%	76%	74%	74%
	$50,000–$74,999	80%	77%	79%	82%	83%	83%	85%	86%	86%	86%
	$75,000–$99,999	84%	85%	84%	86%	86%	87%	88%	88%	88%	88%
	$100,000–$149,999	88%	89%	90%	91%	91%	91%	92%	91%	90%	90%
	$150,000+	92%	92%	94%	94%	95%	96%	96%	95%	95%	95%
Age	<25	54%	42%	38%	51%	50%	54%	59%	57%	56%	54%
	25–34	74%	69%	70%	75%	77%	80%	81%	83%	82%	82%
	35–44	79%	75%	76%	80%	81%	83%	85%	86%	86%	86%
	45–54	81%	76%	78%	81%	82%	84%	85%	86%	86%	87%
	55–64	83%	77%	79%	82%	83%	85%	86%	86%	86%	87%
	65+	77%	69%	70%	72%	73%	77%	78%	75%	76%	79%
Gender	Male	77%	71%	71%	78%	79%	81%	83%	83%	82%	82%
	Female	79%	71%	73%	78%	78%	82%	81%	82%	82%	83%
Job tenure (years)	0–1	64%	56%	56%	63%	65%	67%	71%	73%	71%	70%
	2–3	78%	72%	72%	77%	79%	82%	82%	83%	82%	83%
	4–6	81%	76%	78%	82%	82%	85%	86%	86%	87%	88%
	7–9	81%	76%	80%	83%	83%	85%	87%	88%	89%	90%
	10+	85%	80%	80%	84%	85%	86%	87%	88%	88%	89%

Source: Vanguard 2025.

Figure 28. Participation by income and gender, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals

	Female	Male	All
<$15,000	30%	33%	31%
$15,000–$29,999	48%	50%	49%
$30,000–$49,999	75%	74%	74%
$50,000–$74,999	88%	84%	86%
$75,000–$99,999	91%	86%	88%
$100,000–$149,999	93%	88%	90%
$150,000+	96%	94%	95%

Source: Vanguard 2025.

Figure 29. Participation rates by industry sector, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals

	Plan weighted	Participant weighted
Overall	**85%**	**82%**
Finance, insurance, and real estate	88%	92%
Business, professional, and nonprofit	87%	81%
Transportation, utilities, and communications	87%	83%
Manufacturing	86%	90%
Media, entertainment, and leisure	84%	90%
Education and health	81%	85%
Agriculture, mining, and construction	81%	83%
Wholesale and retail trade	75%	53%

Source: Vanguard 2025.

Figure 30. Participation rates by plan design, 2024 estimated

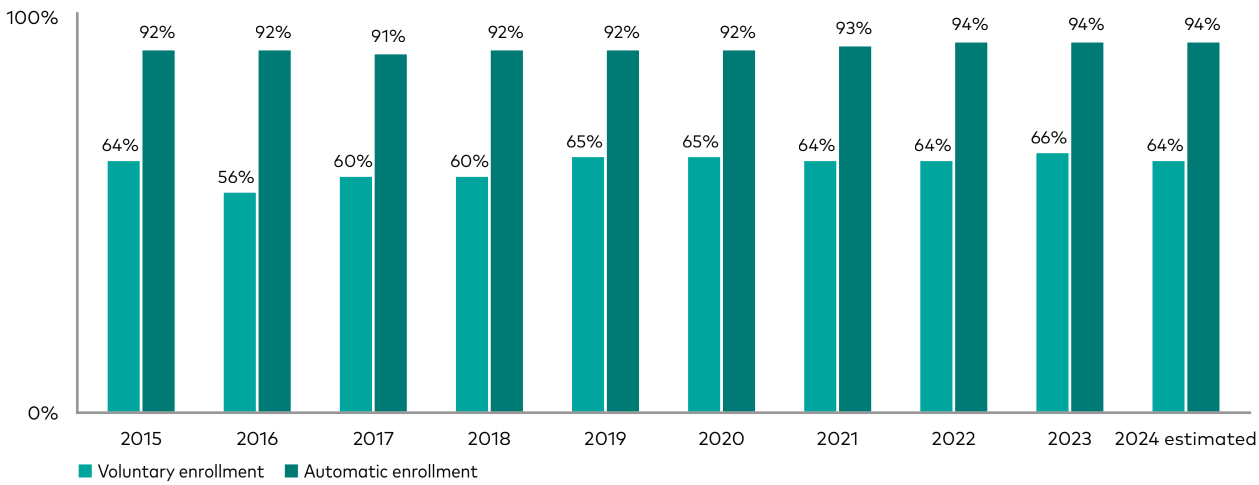
Vanguard defined contribution plans permitting employee-elective deferrals

		Voluntary enrollment	Automatic enrollment	All
All		**64%**	**94%**	**82%**
Income	<$15,000	14%	77%	31%
	$15,000–$29,999	24%	86%	49%
	$30,000–$49,999	53%	91%	74%
	$50,000–$74,999	72%	94%	86%
	$75,000–$99,999	77%	95%	88%
	$100,000–$149,999	81%	96%	90%
	$150,000+	90%	97%	95%
Age	<25	25%	90%	54%
	25–34	62%	94%	82%
	35–44	71%	94%	86%
	45–54	74%	94%	87%
	55–64	75%	95%	87%
	65+	65%	92%	79%
Gender	Male	64%	94%	82%
	Female	65%	94%	83%
Job tenure (years)	0–1	40%	90%	70%
	2–3	62%	96%	83%
	4–6	74%	96%	88%
	7–9	79%	96%	90%
	10+	80%	95%	89%

Source: Vanguard 2025.

Figure 31. Plan participation rates by plan design, participant-weighted trend

Vanguard defined contribution plans permitting employee-elective deferrals



Source: Vanguard 2025.

Impact of automatic enrollment on plan design

Reflecting the increased adoption of automatic enrollment, participation rates have generally improved between 2015 and 2024 among demographic groups that traditionally have had lower voluntary participation rates. Automatically enrolled employees had an overall participation rate of 94% in 2024, compared with 64% for employees in plans with voluntary enrollment **(Figure 30)**.

Plans with automatic enrollment had higher participation rates across all demographics. The rate for automatically enrolled employees with less than two years of tenure was more than double the rate of those who voluntarily enrolled.

Between 2015 and 2024, plans with automatic enrollment had consistently strong participation rates of between 91% and 94% **(Figure 31)**, while plans with voluntary enrollment had participation rates typically between 60% and 66% over the past 10 years.

In 2024, 93% of automatic enrollment plans had participation rates of 80% or higher, compared with 49% of voluntary enrollment plans **(Figure 32)**. One-third of voluntary enrollment plans had participation rates below 70%.

Figure 32. Distribution of participation rates by plan design

Vanguard defined contribution plans permitting employee-elective deferrals

Percentage of plans

	2024 estimated		
Plan participation rate	**All plans**	**Voluntary enrollment**	**Automatic enrollment**
90%–100%	58%	26%	76%
80%–89%	19%	23%	17%
70%–79%	8%	16%	3%
60%–69%	5%	10%	2%
50%–59%	4%	10%	1%
<50%	6%	15%	1%

Source: Vanguard 2025.

Employee deferrals

In a typical DC plan, employees are the main source of funding, while employer contributions play a secondary role. Thus, the level of participant deferrals is a critical determinant of whether the DC plan will generate an adequate level of retirement savings.

Vanguard participants saved 7.7% of their income, on average, in their employer's plan in 2024 **(Figure 33)**. The median participant deferral rate was 6.8%, meaning that half of participants were saving above this rate and half were saving below it.

Vanguard deferral rates are drawn from recordkeeping data and exclude eligible employees not contributing to their plans. Industry deferral rates sometimes include eligible employees not contributing to their plans and are generally self-reported by plan sponsors.

Average and median deferral rates were somewhat steady between 2015 and 2018 and have increased over the past six years.

Changes to deferral rates

Forty-five percent of participants saw an increase to their elected deferral rate in 2024, either through an automatic increase feature or by their own direction **(Figure 34)**. Eight percent of participants decreased their elected deferral rate; 2% stopped contributing.

Overall elected deferral rate changes have remained consistent over the past six years—a time that has seen various forms of economic turbulence (COVID-19, high inflation, market volatility, rising interest rates, etc.).

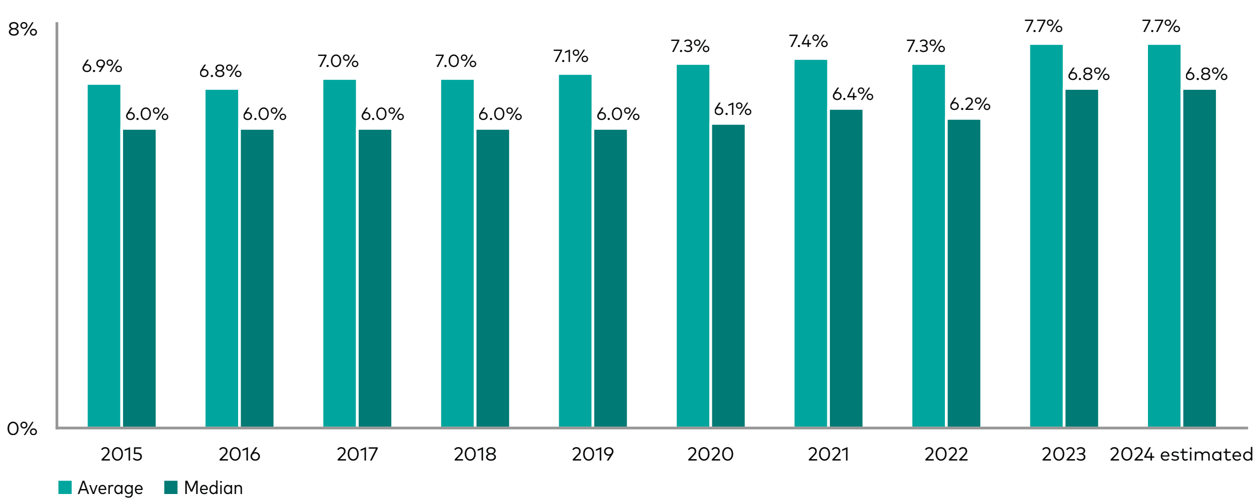
Distribution of deferral rates

Individual deferral rates varied considerably among participants **(Figure 35)**. Twenty-five percent of participants had a deferral rate of 10% or higher in 2024, compared with 20% of participants in 2015. And while 22% of participants had a deferral rate below 4% in 2024, this compares favorably with 2015, when the rate was 29%. Only 14% of participants saved the statutory maximum of $23,000 ($30,500 for participants age 50 or older) **(see page 41)**. In plans offering catch-up contributions, 16% of participants 50 or older took advantage of this feature in 2024 **(see page 42)**.

Plan size had little effect on participant deferral rates **(Figure 36)**. Plans with 5,000 or more participants had an average deferral rate of 7.7%—in line with the overall average. Employees at large firms typically have more generous compensation packages and are likely more able to save than employees at small companies. But the presence of other employer-funded retirement benefits as part of that package may dilute this effect.

Figure 33. Participant employee-elective deferral rates

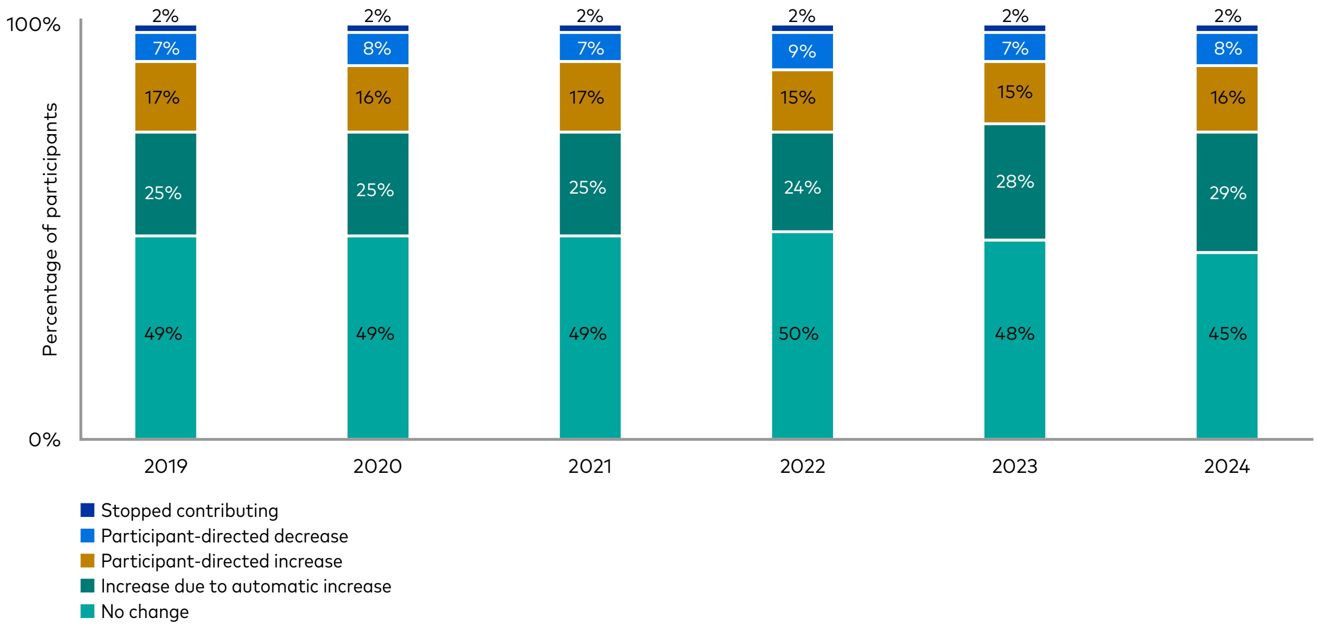
Vanguard defined contribution plans permitting employee-elective deferrals



Source: Vanguard 2025.

Figure 34. Trend in elected deferral rate changes

Vanguard defined contribution plans permitting employee-elective deferrals



Source: Vanguard 2025.

Figure 35. Distribution of participant employee-elective deferral rates

Vanguard defined contribution plans permitting employee-elective deferrals

Percentage of participants

Deferral rate	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimated
0.1%–3.9%	29%	30%	28%	28%	27%	26%	25%	25%	22%	22%
4.0%–6.0%	22%	22%	22%	22%	21%	20%	20%	20%	20%	20%
6.1%–9.9%	29%	28%	29%	29%	30%	31%	32%	33%	33%	33%
10.0%–14.9%	14%	14%	15%	15%	16%	16%	16%	16%	18%	18%
15.0%+	6%	6%	6%	6%	6%	7%	7%	6%	7%	7%

Source: Vanguard 2025.

Figure 36. Participant employee-elective deferral rates by plan size

Vanguard defined contribution plans permitting employee-elective deferrals

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimated
Average—all plans		6.9%	6.8%	7.0%	7.0%	7.1%	7.3%	7.4%	7.3%	7.7%	7.7%
Median		6.0%	6.0%	6.0%	6.0%	6.0%	6.1%	6.4%	6.2%	6.8%	6.8%
Average by plan size (number of participants)	<500	7.1%	7.2%	7.3%	7.3%	7.4%	7.7%	7.7%	7.6%	7.8%	7.8%
	500–999	6.8%	7.0%	7.0%	7.1%	7.3%	7.6%	7.5%	7.4%	7.6%	7.6%
	1,000–4,999	6.9%	6.8%	6.9%	7.0%	7.1%	7.3%	7.5%	7.2%	7.5%	7.5%
	5,000+	7.0%	6.8%	7.0%	6.9%	7.0%	7.3%	7.3%	7.3%	7.7%	7.7%

Source: Vanguard 2025.

Deferral rates by employee demographics

As with plan participation rates, employee demographics have a strong influence on deferral rates **(Figure 37)**. Age is the primary determinant of deferral rates, which generally rise with age. The statutory maximum contribution was $23,000 in 2024 ($30,500 for participants age 50 or older).

The deferral rate was lowest for participants younger than 25, at 5.5% of income. Participants ages 55 to 64 deferred nearly twice as much, averaging 9.3% of income. Deferral rates also rose directly with employee tenure.

Account balance and gender play a role. Participants with account balances of less than $10,000 had the lowest average deferral rate, at 4.1%. As account balances rose, so did average deferral rates. Overall, men and women saved at similar rates, although upon examining the differences at higher income levels, women generally were saving at slightly higher rates **(Figure 38).**

Deferral rates also varied by industry sector **(Figure 39)**. Participants in the media, entertainment, and leisure sector had the highest average deferral rates, while participants in wholesale and retail trade had the lowest.

Figure 37. Employee-elective deferral rates by participant demographics

Vanguard defined contribution plans permitting employee-elective deferrals

Average deferral rate		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 estimated
All		**6.9%**	**6.8%**	**7.0%**	**7.0%**	**7.1%**	**7.3%**	**7.4%**	**7.3%**	**7.7%**	**7.7%**
Income	<$15,000	5.4%	4.6%	6.1%	5.0%	4.9%	5.0%	5.5%	5.6%	7.2%	6.8%
	$15,000–$29,999	4.6%	4.6%	4.7%	4.7%	4.5%	4.8%	4.7%	5.1%	6.0%	5.9%
	$30,000–$49,999	5.7%	5.7%	5.4%	5.5%	5.5%	5.7%	5.5%	5.6%	5.7%	5.7%
	$50,000–$74,999	6.9%	6.9%	6.7%	6.8%	6.9%	7.0%	7.1%	6.9%	6.8%	6.8%
	$75,000–$99,999	8.0%	7.9%	7.9%	8.0%	8.1%	8.2%	8.3%	8.0%	8.0%	8.0%
	$100,000–$149,999	8.8%	8.7%	8.8%	8.9%	9.1%	9.2%	9.3%	9.1%	9.1%	9.1%
	$150,000+	7.7%	7.6%	7.7%	7.9%	8.1%	8.2%	8.1%	7.9%	8.5%	8.6%
Age	<25	4.7%	4.8%	5.0%	4.7%	4.9%	5.2%	5.1%	5.3%	5.6%	5.5%
	25–34	5.9%	5.9%	6.1%	6.1%	6.2%	6.6%	6.8%	6.7%	6.8%	6.8%
	35–44	6.4%	6.3%	6.5%	6.5%	6.7%	6.9%	7.1%	7.0%	7.3%	7.3%
	45–54	7.3%	7.0%	7.2%	7.2%	7.3%	7.5%	7.5%	7.6%	7.9%	7.9%
	55–64	8.6%	8.3%	8.5%	8.5%	8.7%	8.8%	8.7%	8.7%	9.3%	9.3%
	65+	9.7%	9.0%	9.4%	9.1%	9.1%	9.2%	9.0%	9.0%	10.1%	10.1%
Gender	Male	6.9%	6.9%	7.0%	7.1%	7.2%	7.4%	7.5%	7.4%	7.7%	7.7%
	Female	6.9%	6.6%	6.8%	6.6%	6.8%	7.0%	7.1%	7.1%	7.7%	7.7%
Job tenure (years)	0–1	5.0%	5.0%	5.1%	5.0%	5.1%	5.5%	5.4%	5.4%	5.5%	5.4%
	2–3	6.5%	6.3%	6.6%	6.4%	6.4%	6.6%	6.9%	6.9%	7.3%	7.2%
	4–6	7.1%	6.9%	7.3%	7.1%	7.2%	7.4%	7.6%	7.6%	8.0%	8.1%
	7–9	7.4%	7.2%	7.6%	7.6%	7.7%	7.8%	8.0%	8.0%	8.5%	8.6%
	10+	8.0%	7.9%	8.1%	8.2%	8.4%	8.6%	8.7%	8.7%	9.1%	9.1%
Account balance	<$10,000	3.9%	3.9%	3.8%	3.9%	3.7%	4.0%	4.0%	4.1%	4.1%	4.1%
	$10,000–$24,999	6.4%	6.4%	6.2%	6.6%	6.4%	6.3%	6.6%	6.9%	6.4%	6.4%
	$25,000–$49,999	7.4%	7.5%	7.2%	7.6%	7.5%	7.5%	7.6%	8.1%	7.8%	7.8%
	$50,000–$99,999	8.1%	8.2%	8.2%	8.5%	8.5%	8.5%	8.6%	8.9%	8.9%	8.9%
	$100,000–$249,999	9.3%	9.1%	9.2%	9.5%	9.5%	9.6%	9.5%	9.8%	10.0%	10.0%
	$250,000+	10.4%	10.2%	10.3%	10.5%	10.6%	10.6%	10.4%	10.4%	11.0%	11.0%

Source: Vanguard 2025.

Figure 38. Deferral rates by income and gender, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals

Average deferral rate

	Female	Male	All
<$15,000	6.8%	6.8%	6.8%
$15,000–$29,999	5.8%	6.1%	5.9%
$30,000–$49,999	5.9%	5.8%	5.7%
$50,000–$74,999	7.0%	6.9%	6.8%
$75,000–$99,999	8.3%	7.9%	8.0%
$100,000–$149,999	9.5%	9.0%	9.1%
$150,000+	8.7%	8.3%	8.6%

Source: Vanguard 2025.

Figure 39. Deferral rates by industry sector, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals

Average deferral rate

	Average	Median
Overall	**7.7%**	**6.8%**
Media, entertainment, and leisure	8.6%	8.0%
Business, professional, and nonprofit	7.8%	6.8%
Agriculture, mining, and construction	7.8%	7.0%
Transportation, utilities, and communications	7.7%	6.9%
Education and health	7.7%	6.1%
Manufacturing	7.5%	6.0%
Finance, insurance, and real estate	7.4%	6.3%
Wholesale and retail trade	6.9%	5.9%

Source: Vanguard 2025.

Impact of automatic enrollment

Participants automatically enrolled in their plan had an average deferral rate of 7.7% in 2024, in line with the average deferral rate for voluntarily enrolled participants **(Figure 40)**.

In prior years, the gap between average deferral rates of participants automatically and voluntarily enrolled was wide. In 2013, this spread was nearly 2 percentage points. However, it appears that automatic annual increases as well as higher default deferral rates have caused deferral rates to converge.

Maximum contributors

During 2024, 14% of participants saved the statutory maximum amount of $23,000 ($30,500 for those age 50 or older) **(Figure 41)**. Participants who contributed the maximum dollar amount tended to have higher incomes, were older, had longer tenures with their current employer, and had accumulated substantially higher account balances.

Forty-nine percent of participants with income of more than $150,000 contributed the maximum allowed, as did 41% of participants with an account balance of more than $250,000.

Figure 40. Participant deferral rates by plan design, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals

Average deferral rate

		Voluntary enrollment	Automatic enrollment	All
All		**7.7%**	**7.7%**	**7.7%**
Income	<$15,000	8.1%	6.2%	6.8%
	$15,000–$29,999	6.3%	5.8%	5.9%
	$30,000–$49,999	5.9%	5.6%	5.7%
	$50,000–$74,999	6.9%	6.7%	6.8%
	$75,000–$99,999	8.1%	8.0%	8.0%
	$100,000–$149,999	8.9%	9.2%	9.1%
	$150,000+	8.3%	8.7%	8.6%
Age	<25	5.9%	5.4%	5.5%
	25–34	7.0%	6.8%	6.8%
	35–44	7.2%	7.3%	7.3%
	45–54	7.8%	8.0%	7.9%
	55–64	9.0%	9.5%	9.3%
	65+	10.0%	10.2%	10.1%
Gender	Male	7.8%	7.7%	7.7%
	Female	7.7%	7.7%	7.7%
Job tenure (years)	0–1	5.8%	5.3%	5.4%
	2–3	7.4%	7.1%	7.2%
	4–6	8.0%	8.1%	8.1%
	7–9	8.3%	8.7%	8.6%
	10+	8.5%	9.5%	9.1%
Account balance	<$10,000	4.4%	4.0%	4.1%
	$10,000–$24,999	6.5%	6.4%	6.4%
	$25,000–$49,999	7.8%	7.8%	7.8%
	$50,000–$99,999	8.9%	9.0%	8.9%
	$100,000–$249,999	9.7%	10.2%	10.0%
	$250,000+	10.6%	11.2%	11.0%

Source: Vanguard 2025.

Figure 41. Participants contributing the maximum by participant demographics, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals

All		**14%**
Income	<$15,000	<0.5%
	$15,000–$29,999	<0.5%
	$30,000–$49,999	<0.5%
	$50,000–$74,999	1%
	$75,000–$99,999	2%
	$100,000–$149,999	11%
	$150,000+	49%
Age	<25	3%
	25–34	9%
	35–44	14%
	45–54	16%
	55–64	19%
	65+	18%
Gender	Male	15%
	Female	13%
Job tenure (years)	0–1	5%
	2–3	11%
	4–6	15%
	7–9	18%
	10+	19%
Account balance	<$10,000	<0.5%
	$10,000–$24,999	<0.5%
	$25,000–$49,999	4%
	$50,000–$99,999	9%
	$100,000–$249,999	18%
	$250,000+	41%
Industry group	Media, entertainment, and leisure	39%
	Agriculture, mining, and construction	15%
	Business, professional, and nonprofit	14%
	Education and health	14%
	Finance, insurance, and real estate	13%
	Manufacturing	9%
	Wholesale and retail trade	6%
	Transportation, utilities, and communications	5%

Source: Vanguard 2025.

Catch-up contributions

Nearly all Vanguard plans offered catch-up contributions. Catch-up contributions permit participants age 50 or older to contribute more than is permitted for those younger than 50. Sixteen percent of eligible participants took advantage of this feature in 2024 **(Figure 42)**. Participants earning less than $100,000 would need deferral rates higher than 20% of income to make catch-up contributions, suggesting that adoption of such contributions by participants is strong.

Participants making catch-up contributions shared characteristics with participants making the maximum contribution to their plan—higher incomes and substantially higher account balances. Fifty-one percent of participants with income of more than $150,000 and 37% with an account balance of more than $250,000 made catch-up contributions in 2024.

Roth contributions

At year-end 2024, the Roth feature was offered by 86% of Vanguard plans and had been adopted by 18% of participants in those plans **(Figure 43)**, up from 12% in 2019. Younger or higher-income participants were more likely to use this feature.

Thirty-six percent of plans offered Roth in-plan conversions. Within those plans, 3% of participants converted at least some of their assets to Roth. In addition, 10% of plans offered automatic Roth in-plan conversions, which allow after-tax contributions to be automatically converted to Roth when contributed. Within those plans, 8% of active participants used the automatic Roth in-plan conversion feature.

After-tax contributions

After-tax employee-elective deferrals were available to participants in 24% of Vanguard plans in 2024 **(Figure 44)**. The after-tax feature is more likely to be offered by large plans, and 40% of participants had access to it. Ten percent of participants offered the after-tax deferral feature took advantage of it. Those who used the feature tended to have higher incomes and longer tenures.

Figure 42. Catch-up contribution participation rates by participant demographics, 2024 estimated

Vanguard defined contribution plans permitting catch-up contributions

Percentage of participants using if offered		**16%**
Income	<$15,000	1%
	$15,000–$29,999	<0.5%
	$30,000–$49,999	<0.5%
	$50,000–$74,999	1%
	$75,000–$99,999	4%
	$100,000–$149,999	15%
	$150,000+	51%
Gender	Male	17%
	Female	14%
Job tenure (years)	0–1	7%
	2–3	13%
	4–6	16%
	7–9	19%
	10+	19%
Account balance	<$10,000	1%
	$10,000–$24,999	1%
	$25,000–$49,999	4%
	$50,000–$99,999	8%
	$100,000–$249,999	15%
	$250,000+	37%
Industry group	Media, entertainment, and leisure	34%
	Education and health	25%
	Agriculture, mining, and construction	23%
	Finance, insurance, and real estate	21%
	Business, professional, and nonprofit	20%
	Manufacturing	12%
	Wholesale and retail trade	10%
	Transportation, utilities, and communications	7%

Source: Vanguard 2025.

Figure 43. Roth participation rates by participant demographics, 2024 estimated

Vanguard defined contribution plans permitting Roth contributions

Percentage of plans offering		**86%**
Percentage of participants offered		**96%**
Percentage of participants using if offered		**18%**
Income	<$15,000	9%
	$15,000–$29,999	8%
	$30,000–$49,999	9%
	$50,000–$74,999	14%
	$75,000–$99,999	21%
	$100,000–$149,999	24%
	$150,000+	21%
Age	<25	17%
	25–34	21%
	35–44	19%
	45–54	17%
	55–64	14%
	65+	10%
Gender	Male	18%
	Female	18%
Job tenure (years)	0–1	15%
	2–3	19%
	4–6	20%
	7–9	20%
	10+	18%
Account balance	<$10,000	11%
	$10,000–$24,999	17%
	$25,000–$49,999	21%
	$50,000–$99,999	22%
	$100,000–$249,999	22%
	$250,000+	21%
Industry group	Business, professional, and nonprofit	25%
	Education and health	22%
	Finance, insurance, and real estate	19%
	Wholesale and retail trade	17%
	Agriculture, mining, and construction	16%
	Media, entertainment, and leisure	15%
	Manufacturing	15%
	Transportation, utilities, and communications	12%

Source: Vanguard 2025.

Figure 44. After-tax participation rates by participant demographics, 2024 estimated

Vanguard defined contribution plans permitting after-tax contributions

Percentage of plans offering	24%
Percentage of participants offered	40%
Percentage of participants using if offered	10%

Income	<$15,000	2%
	$15,000–$29,999	2%
	$30,000–$49,999	4%
	$50,000–$74,999	5%
	$75,000–$99,999	7%
	$100,000–$149,999	6%
	$150,000+	21%
Age	<25	4%
	25–34	10%
	35–44	13%
	45–54	11%
	55–64	9%
	65+	7%
Gender	Male	10%
	Female	10%
Job tenure (years)	0–1	5%
	2–3	9%
	4–6	13%
	7–9	14%
	10+	12%
Industry group	Media, entertainment, and leisure	34%
	Agriculture, mining, and construction	11%
	Education and health	8%
	Finance, insurance, and real estate	8%
	Transportation, utilities, and communications	6%
	Business, professional, and nonprofit	6%
	Manufacturing	5%
	Wholesale and retail trade	4%

Source: Vanguard 2025.

Roth and after-tax offerings

While after-tax offerings have increased slightly over the past five years, plans of all sizes have continued to adopt Roth accounts **(Figure 45)**. In addition, more than 4 in 10 plans with at least 5,000 participants offered both Roth and after-tax contributions in 2024, up from 29% in 2020.

Figure 45. Plans offering Roth and after-tax contributions trend

Vanguard defined contribution plans permitting employee-elective deferrals

Percentage of plans offering Roth

Plan size (number of participants)	2020	2021	2022	2023	2024
<500	65%	68%	71%	72%	76%
500–999	81%	80%	84%	86%	93%
1,000–5,000	82%	86%	88%	90%	95%
>5,000	88%	91%	94%	95%	95%
All plans	74%	77%	80%	82%	86%

Percentage of plans offering after-tax

Plan size (number of participants)	2020	2021	2022	2023	2024
<500	10%	11%	13%	13%	15%
500-999	21%	23%	21%	23%	25%
1,000–5,000	27%	28%	29%	29%	29%
>5,000	36%	39%	41%	42%	47%
All plans	19%	21%	22%	22%	24%

Percentage of plans offering both Roth and after-tax

Plan size (number of participants)	2020	2021	2022	2023	2024
<500	6%	7%	9%	9%	11%
500–999	17%	18%	17%	19%	22%
1,000–5,000	24%	25%	26%	26%	28%
>5,000	29%	34%	37%	38%	42%
All plans	15%	17%	18%	19%	21%

Source: Vanguard 2025.

Aggregate contributions

Considering both employee and employer contributions, the average total participant contribution rate in 2024 was 12.0% (estimated; see the **Methodology section on page 111**); the median, 11.5% **(Figure 46)**. These rates exclude eligible nonparticipants. Aggregate participant and employer contribution rates were somewhat stable between 2015 and 2018 and have increased slightly over the past six years.

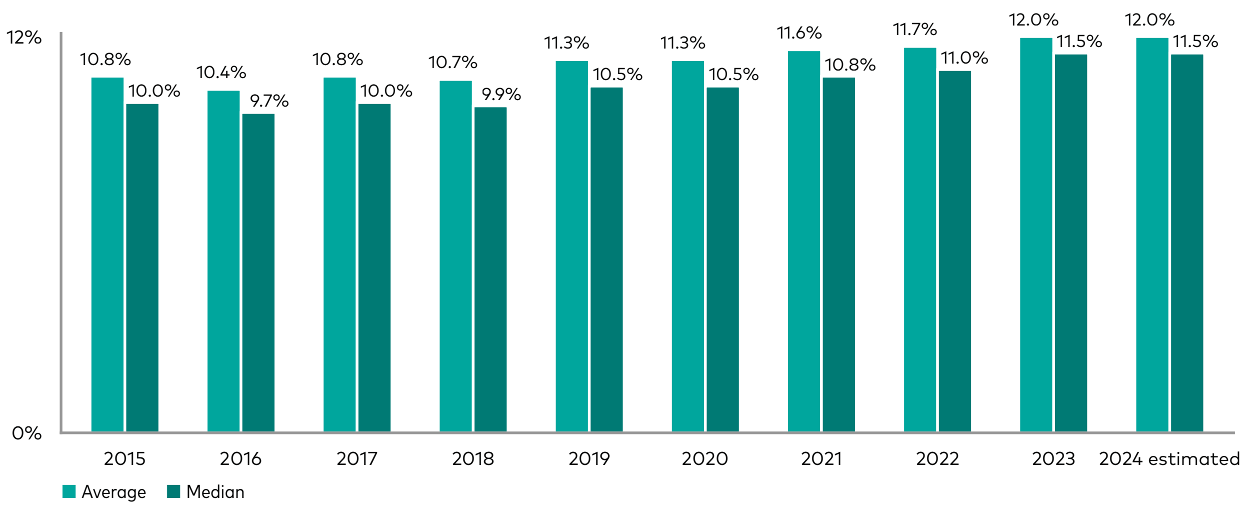
When eligible nonparticipants were included, with their 0% contribution rate, the average aggregate contribution rate was 10.1%; the median rate, 10% **(Figure 47)**. Aggregate employee and employer contribution rates declined in 2016, reflecting a change in the underlying sectors these plans represent—specifically an increase in the proportion of retail plans with voluntary enrollment. Since 2016, this measure has increased.

Participants automatically enrolled in their plan had an average total contribution rate of 12.5% in 2024, compared with 11.1% for those voluntarily enrolled **(Figure 48)**.

Eligible employees hired under an automatic enrollment feature had an average total contribution rate of 12.1%, about 60% higher than the rate of 7.6% for those hired under voluntary enrollment **(Figure 49)**. Plans with automatic enrollment had higher total contribution rates across all demographics, with the widest gaps for younger, less-tenured, and lower-income employees.

Figure 46. Aggregate participant and employer contribution rates

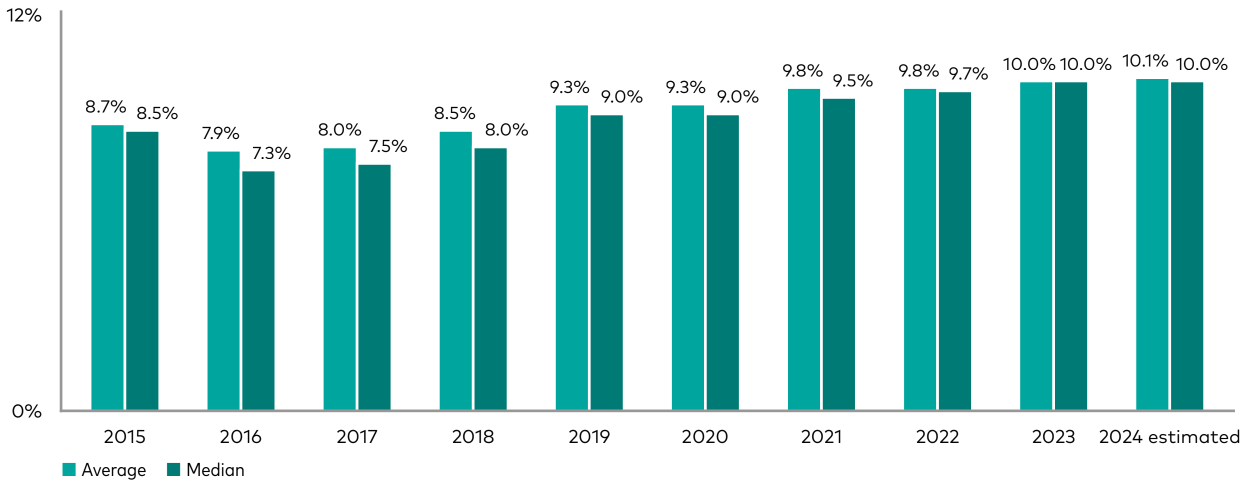
Vanguard defined contribution plans permitting employee-elective deferrals



Source: Vanguard 2025.

Figure 47. Aggregate employee and employer contribution rates

Vanguard defined contribution plans permitting employee-elective deferrals



Source: Vanguard 2025.

Figure 48. Aggregate participant and employer contribution rates by plan design, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals

		Automatic enrollment	Voluntary enrollment	All
All		**12.5%**	**11.1%**	**12.0%**
Income	<$15,000	10.3%	10.2%	10.3%
	$15,000–$29,999	10.3%	8.6%	9.7%
	$30,000–$49,999	9.9%	8.8%	9.4%
	$50,000–$74,999	11.2%	10.1%	10.8%
	$75,000–$99,999	12.6%	11.2%	12.1%
	$100,000–$149,999	13.9%	12.2%	13.2%
	$150,000+	14.5%	12.7%	13.9%
Age	<25	9.9%	8.2%	9.3%
	25–34	11.7%	10.0%	11.1%
	35–44	12.2%	10.6%	11.7%
	45–54	12.9%	11.4%	12.3%
	55–64	14.4%	12.8%	13.8%
	65+	15.1%	13.8%	14.6%
Gender	Male	12.8%	11.3%	12.2%
	Female	12.0%	11.2%	11.7%
Job tenure (years)	0–1	9.6%	8.0%	9.1%
	2–3	12.4%	10.9%	11.9%
	4–6	13.4%	11.8%	12.8%
	7–9	13.7%	12.1%	13.2%
	10+	14.2%	12.4%	13.6%
Account balance	<$10,000	6.3%	6.3%	6.3%
	$10,000–$24,999	9.9%	9.3%	9.7%
	$25,000–$49,999	11.7%	11.0%	11.4%
	$50,000–$99,999	13.3%	12.5%	13.0%
	$100,000–$249,999	14.8%	13.6%	14.4%
	$250,000+	16.6%	14.9%	16.1%

Source: Vanguard 2025.

Figure 49. Aggregate employee and employer contribution rates by plan design, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals

		Automatic enrollment	Voluntary enrollment	All
All		**12.1%**	**7.6%**	**10.1%**
Income	<$15,000	8.6%	1.7%	3.3%
	$15,000–$29,999	9.2%	2.3%	4.8%
	$30,000–$49,999	9.3%	5.0%	7.2%
	$50,000–$74,999	10.8%	7.8%	9.6%
	$75,000–$99,999	12.1%	9.1%	10.9%
	$100,000–$149,999	13.4%	10.2%	12.1%
	$150,000+	14.2%	11.6%	13.4%
Age	<25	9.2%	2.6%	5.1%
	25–34	11.2%	6.7%	9.3%
	35–44	11.8%	7.9%	10.2%
	45–54	12.4%	8.8%	10.9%
	55–64	13.9%	10.0%	12.2%
	65+	14.3%	9.5%	11.9%
Gender	Male	12.4%	8.7%	10.3%
	Female	11.6%	8.7%	9.8%
Job tenure (years)	0–1	9.0%	3.8%	6.5%
	2–3	12.1%	7.4%	10.0%
	4–6	13.0%	9.2%	11.4%
	7–9	13.4%	10.0%	12.0%
	10+	13.7%	10.3%	12.3%

Source: Vanguard 2025.

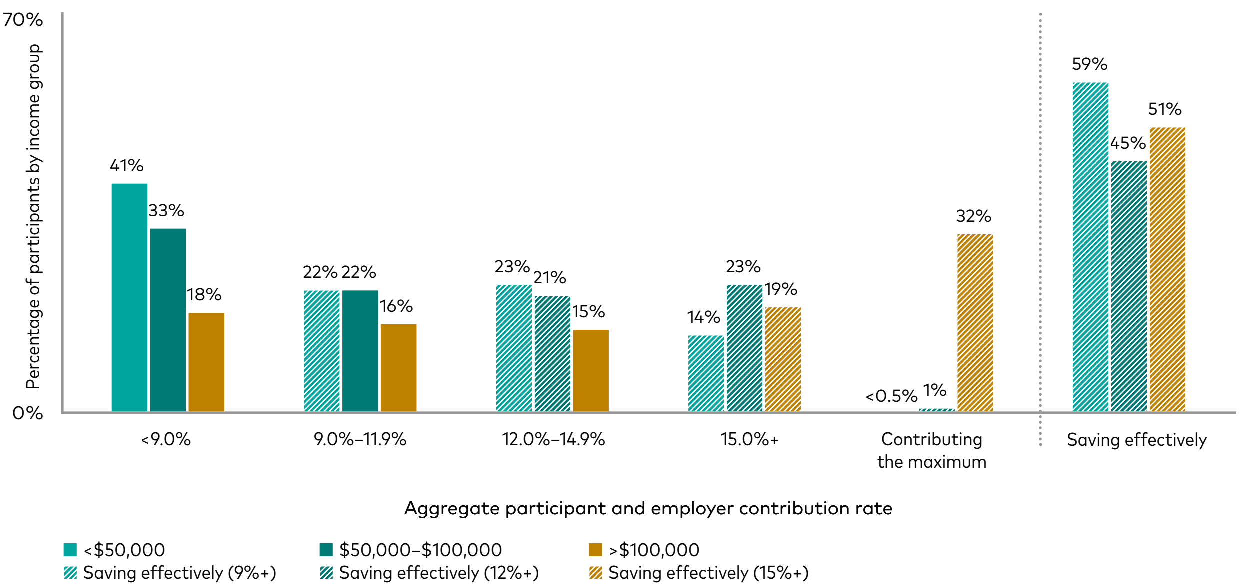
Distribution of aggregate contribution rates

Vanguard estimates that a typical participant should target a total contribution rate of 12% to 15%, including both employee and employer contributions. Fifty percent of participants had total employee and employer contribution rates that met those thresholds or reached the statutory contribution limit in 2024 **(Figure 50)**. This is up from 47% of participants in 2021.

For participants with lower wages, Social Security is expected to replace a higher percentage of income, and so a lower retirement saving rate may be appropriate. For higher-wage participants, Social Security replaces a lower percentage of income, and saving rates may need to be higher. In fact, higher-wage participants may not be able to achieve sufficient saving rates within the plan because of statutory contribution limits.

Figure 50. Distribution of aggregate participant and employer contribution rates, 2024 estimated

Vanguard defined contribution plans permitting employee-elective deferrals



Note: The percentage noted after the income range is the total contribution rate recommended for effective savings.

Source: Vanguard 2025.

Account balances

Account balances are a widely cited measure of the overall effectiveness of DC plans. They are determined by contribution levels and investment performance over time.

Vanguard account balances are a measure of how much plan participants have accumulated for retirement at a given employer. In the United States, DC plans are not a closed system. When participants change jobs or retire, their plan assets may remain with the plan of the employer they are leaving, may be rolled over to another employer plan or to an IRA, or may be cashed out.

As a result, current DC plan balances often do not reflect lifetime savings and are only a partial measure of retirement preparedness for most participants.

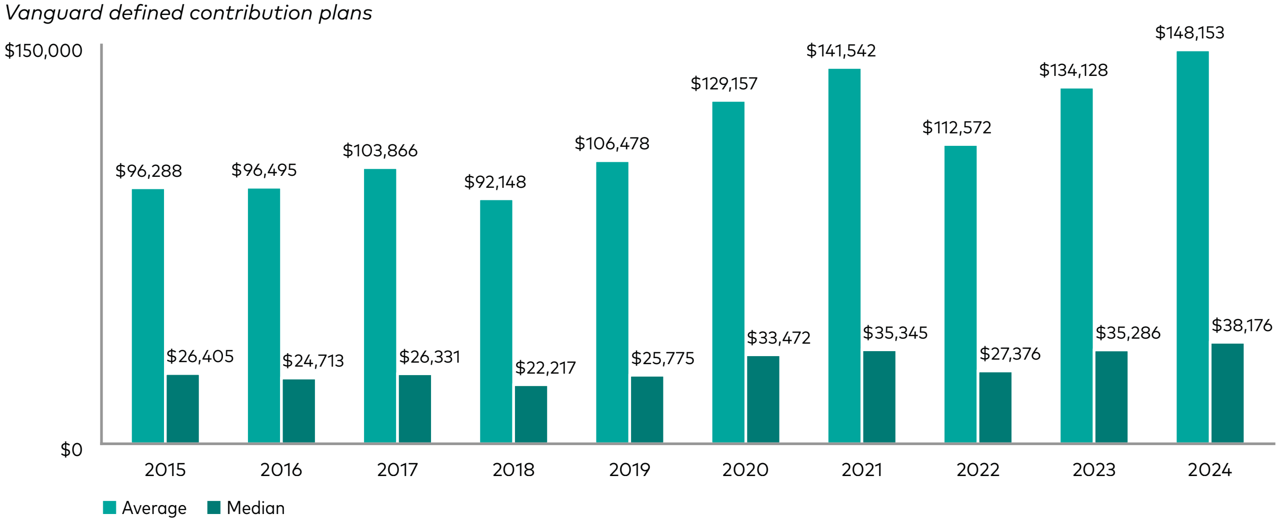
Average versus median balances

In 2024, the average account balance for Vanguard participants was $148,153, and the median balance was $38,176 **(Figure 51)**—increases of 10% and 8%, respectively, from 2023. The average one-year participant total return was 13.7% **(see page 86)**.

The wide divergence between the median and the average balance is due to a small number of very large accounts that significantly raised the average above the median **(Figure 52)**. Nearly 3 in 10 participants had an account balance of less than $10,000, while another 3 in 10 had a balance of more than $100,000. Sixteen percent of participants had a balance of $250,000 or more.

Figure 51. Account balances

Vanguard defined contribution plans



Source: Vanguard 2025.

Figure 52. Distribution of account balances

Vanguard defined contribution plans

Percentage of accounts

Range of balance	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<$10,000	33%	34%	34%	36%	33%	29%	29%	33%	28%	28%
$10,000–$19,999	12%	12%	11%	12%	12%	11%	11%	12%	12%	11%
$20,000–$39,999	13%	13%	13%	13%	13%	13%	12%	13%	13%	13%
$40,000–$59,999	8%	8%	7%	7%	7%	8%	8%	7%	8%	8%
$60,000–$79,999	5%	5%	5%	5%	5%	6%	5%	5%	5%	5%
$80,000–$99,999	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
$100,000–$149,999	7%	6%	7%	6%	7%	7%	7%	7%	7%	7%
$150,000–$199,999	4%	4%	4%	4%	4%	5%	5%	4%	5%	5%
$200,000–$249,999	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
$250,000+	11%	11%	12%	10%	12%	14%	16%	12%	15%	16%

Source: Vanguard 2025.

Because of the skewed distribution of assets, average balances are indicative of participants at about the 75th percentile—about 75% of participants had balances below the average, and 25% had balances above. Average balances are more indicative of the results experienced by longer-tenured, more affluent, or older participants. The median balance represents the typical participant: Half of all participants had balances above the median, and half had balances below.

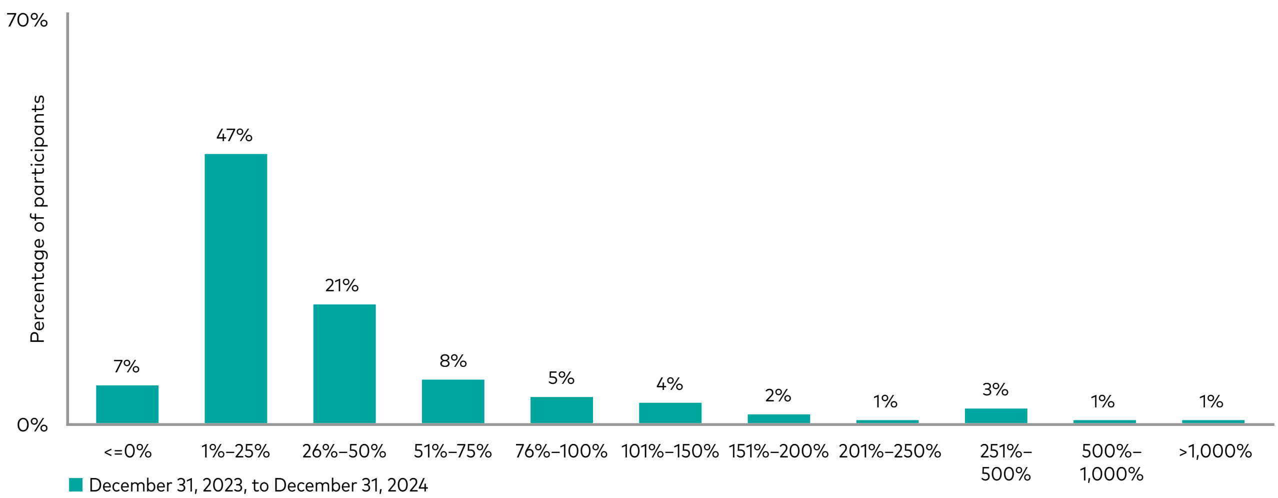
Change in account balances

Market performance and an evolving participant base caused the change in average and median account balances in 2024. When we examined continuous participants—those with an account balance in both December 2023 and December 2024—the median account balance increased by 23% **(Figure 53)**. Ninety-three percent of these continuous participants saw their balances rise because of positive returns in the equity and bond markets and ongoing contributions.

Account balances are widely available on statements and websites and are often cited as participants' primary tool for monitoring investment results. Because of ongoing contributions, account balances will appear to be less negatively impacted during falling markets. This "contribution effect" may mask the psychological impact of falling stock prices on participants.

Figure 53. Change in account balances, continuous participants

Vanguard defined contribution participants with a balance at both the beginning and the end of the period



	December 31, 2023–December 31, 2024
Median change	23%
Percentage of participants with positive changes	93%

Source: Vanguard 2025.

Account balances by participant demographics

Median and average account balances varied considerably by participant demographics in 2024 **(Figure 54)**. Income, age, and job tenure are among the factors that influence account balances. These three factors are intertwined. Not only does income, on average, tend to rise somewhat with age, making saving more affordable, but older participants generally save at higher rates. Also, the longer an employee's tenure with a firm, the more likely they are to earn a higher salary, participate in the plan, and contribute at higher levels. Longer-tenured participants also have higher balances because they have been contributing to their plan longer.

Gender also influences current balances. Fifty-seven percent of Vanguard participants are male, and men had average and median balances 30% higher than those of women in 2024. Gender is often a proxy for other factors, such as income. Women in our sample tended to have lower incomes than men. However, as noted earlier in this report, women tended to save more than men at each respective income level.

A different picture emerges when account balances are compared based on income. When income is factored in, account balances were closer in 2024 **(Figure 55)**. For example, female participants with an income between $30,000 and $149,999 had average account balances that were within 10% of their male counterparts.

Figure 54. Account balances by participant demographics, 2024

Vanguard defined contribution plans

		All participants	
		Average	Median
All		**$148,153**	**$38,176**
Income	<$15,000	$25,716	$4,055
	$15,000–$29,999	$19,858	$6,475
	$30,000–$49,999	$27,278	$10,928
	$50,000–$74,999	$62,618	$27,528
	$75,000–$99,999	$109,770	$53,112
	$100,000–$149,999	$188,329	$98,434
	$150,000+	$377,488	$221,220
	Terminated	$155,645	$39,175
Age	<25	$6,899	$1,948
	25–34	$42,640	$16,255
	35–44	$103,552	$39,958
	45–54	$188,643	$67,796
	55–64	$271,320	$95,642
	65+	$299,442	$95,425
Gender	Male	$171,859	$45,194
	Female	$126,971	$35,554
Job tenure (years)	0–1	$16,434	$3,025
	2–3	$46,801	$20,233
	4–6	$88,733	$44,209
	7–9	$130,938	$72,609
	10+	$322,237	$165,633

Source: Vanguard 2025.

Figure 55. Account balances by income and gender, 2024
Vanguard defined contribution plans

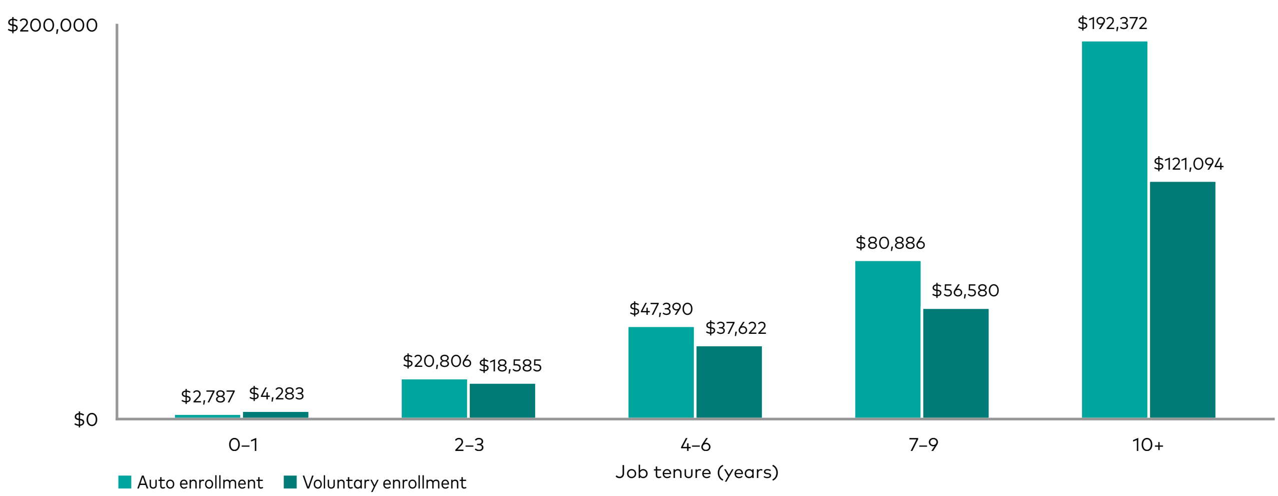
		Female	Male	All
Average	<$15,000	$23,001	$33,537	$25,716
	$15,000–$29,999	$19,080	$25,033	$19,858
	$30,000–$49,999	$29,500	$28,810	$27,278
	$50,000–$74,999	$64,676	$66,475	$62,618
	$75,000–$99,999	$107,134	$118,075	$109,770
	$100,000–$149,999	$183,238	$198,298	$188,329
	$150,000+	$338,278	$423,981	$377,488
	Terminated	$132,051	$175,564	$155,645
Median	<$15,000	$3,714	$4,980	$4,055
	$15,000–$29,999	$6,207	$8,465	$6,475
	$30,000–$49,999	$12,065	$11,944	$10,928
	$50,000–$74,999	$29,090	$29,968	$27,528
	$75,000–$99,999	$52,513	$58,159	$53,112
	$100,000–$149,999	$98,263	$104,587	$98,434
	$150,000+	$203,315	$246,431	$221,220
	Terminated	$37,060	$41,066	$39,175

Source: Vanguard 2025.

Account balances by plan design

Active participants in plans that offer automatic enrollment had a median account balance of $36,823 in 2024, in line with the median balances of active participants in voluntary enrollment plans. However, when considering job tenure, median account balances of participants in plans with automatic enrollment were higher as job tenure increased **(Figure 56)**. Active participants in plans with automatic enrollment, with 10 or more years of tenure, had median account balances that were about 60% higher than participants with similar tenure in voluntary enrollment plans.

Figure 56. Median account balances by plan design, 2024
Vanguard defined contribution plans, active participants



Source: Vanguard 2025.

Balances by industry group

There were significant variations in account balances by industry sector, which reflect a complex mixture of firm characteristics (influencing employer contributions) and workforce demographics (influencing participant saving rates). Participants in the media, entertainment, and leisure sector had average and median account balances about two to three times higher than some other industry groups **(Figure 57)**.

Figure 57. Balances by industry sector, 2024
Vanguard defined contribution plans

	Average	Median
All	**$148,153**	**$38,176**
Media, entertainment, and leisure	$213,303	$102,681
Finance, insurance, and real estate	$209,479	$62,316
Agriculture, mining, and construction	$196,235	$50,911
Business, professional, and nonprofit	$160,378	$44,089
Manufacturing	$148,759	$38,803
Education and health	$113,003	$29,978
Wholesale and retail trade	$111,951	$25,651
Transportation, utilities, and communications	$95,318	$15,329

Source: Vanguard 2025.

Section 2: Managing participant accounts

Participants' investment decisions play a crucial role in long-term retirement savings growth.

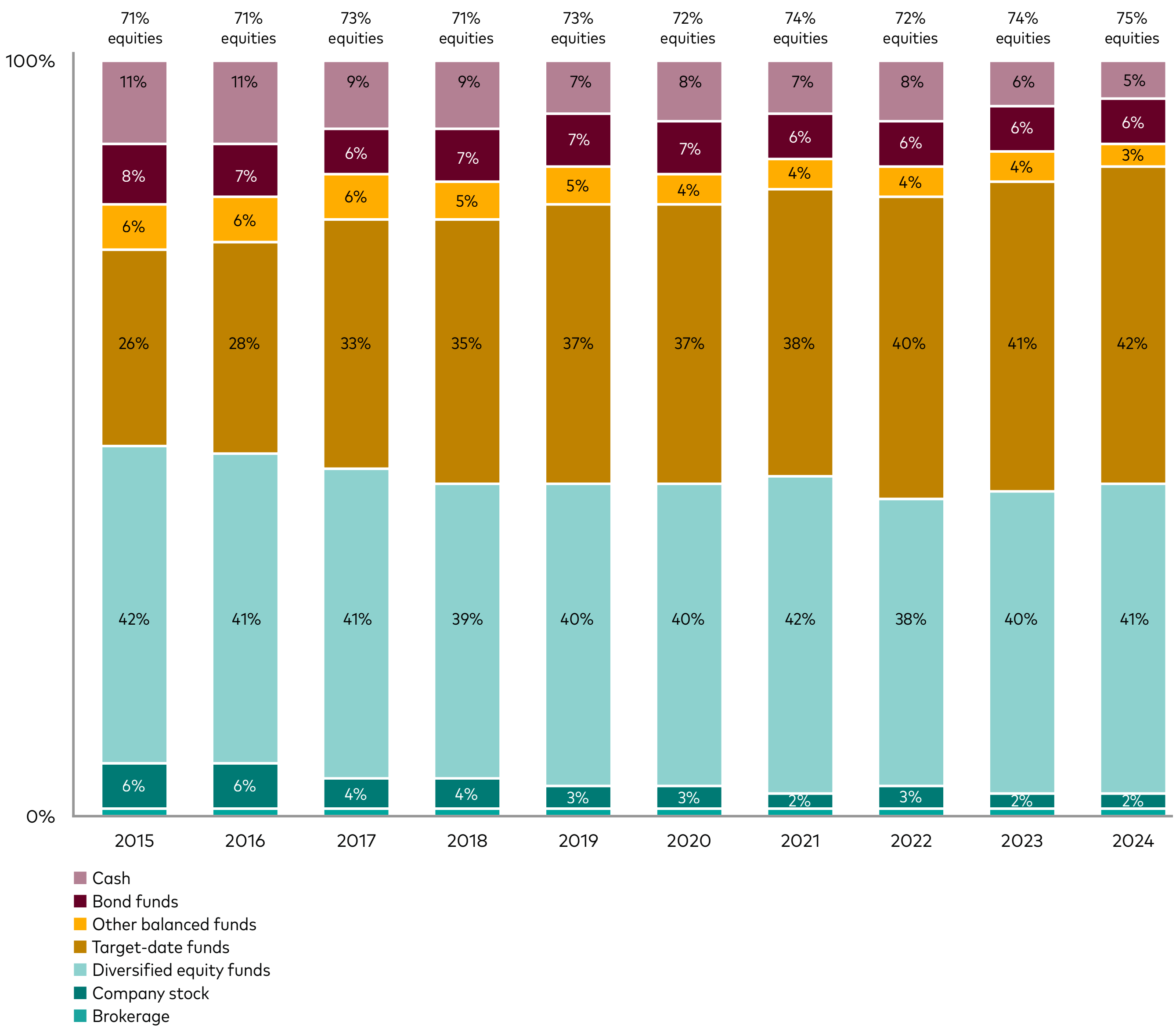
Asset and contribution allocations

Seventy-five percent of plan assets were invested in equities in 2024 **(Figure 58)**. This allocation includes the equity component of balanced strategies. The overall allocation to equities has increased slightly over the past 10 years.

Investment in balanced strategies reached 45% in 2024, including 42% in target-date funds and 3% in other balanced options. The growth of target-date funds is dramatically reshaping DC plan investment patterns by increasing age-appropriate equity allocations and reducing extreme allocations.

Figure 58. Plan asset allocation summary

Vanguard defined contribution plans



Source: Vanguard 2025.

Seventy-nine percent of plan contribution dollars were invested in equities during 2024, and 64% of plan contribution dollars were invested in target-date funds **(Figure 59)**.

Asset allocation by participant demographics

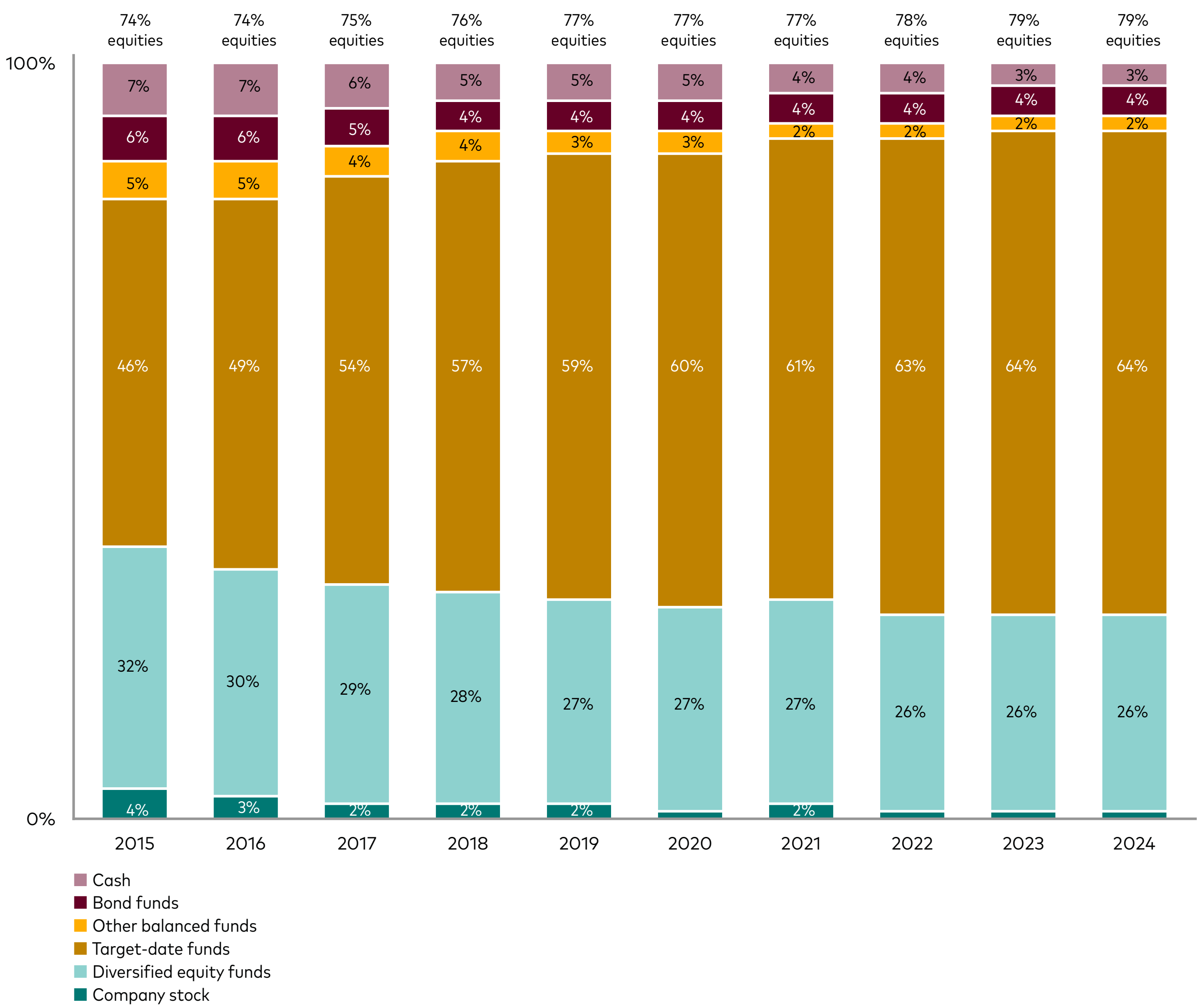
The average participant-weighted asset allocation to equities was 78% in 2024, and asset allocation decisions varied among participant demographics **(Figure 60)**.

In the past, higher-income participants tended to assume more equity market risk, on average, than lower-income participants. However, with the rising adoption of target-date funds and automatic enrollment, participants of all income segments now have similar equity risk.

All participants, regardless of income level, had slightly more than three-quarters of their average account balance allocated to equities in 2024; at the median, participants allocated 87% to equities.

Figure 59. Plan contribution allocation summary

Vanguard defined contribution plans



Source: Vanguard 2025.

Figure 60. Asset allocation by participant demographics, 2024

Vanguard defined contribution plans

		Brokerage	Company stock	Diversified equity funds	Target-date funds	Other balanced funds	Bond funds	Cash	Average equity participant weighted	Median equity participant weighted
	All asset weighted	**1%**	**2%**	**41%**	**42%**	**3%**	**6%**	**5%**	**—**	**—**
	Average participant weighted	**<0.5%**	**1%**	**19%**	**71%**	**2%**	**3%**	**4%**	**78%**	**87%**
Income	<$15,000	2%	1%	36%	49%	2%	6%	5%	82%	89%
	$15,000–$29,999	1%	1%	27%	62%	2%	4%	4%	79%	89%
	$30,000–$49,999	<0.5%	2%	24%	63%	2%	4%	5%	79%	89%
	$50,000–$74,999	<0.5%	2%	29%	57%	2%	5%	5%	78%	88%
	$75,000–$99,999	<0.5%	2%	34%	51%	2%	5%	5%	79%	86%
	$100,000–$149,999	1%	2%	40%	45%	2%	5%	4%	79%	86%
	$150,000+	2%	2%	44%	42%	2%	6%	4%	79%	87%
	Terminated	1%	3%	43%	35%	4%	6%	8%	75%	85%
Age	<25	<0.5%	1%	17%	79%	1%	1%	1%	87%	89%
	25–34	1%	1%	24%	71%	1%	1%	1%	88%	89%
	35–44	1%	1%	32%	60%	1%	2%	2%	86%	89%
	45–54	1%	2%	45%	42%	2%	5%	3%	76%	78%
	55–64	1%	2%	46%	33%	4%	7%	7%	64%	63%
	65+	1%	3%	42%	26%	5%	9%	13%	49%	50%
Gender	Male	1%	2%	43%	39%	3%	6%	6%	78%	86%
	Female	<0.5%	2%	38%	47%	2%	6%	5%	77%	86%
Job tenure (years)	0–1	1%	1%	25%	69%	1%	2%	2%	84%	89%
	2–3	1%	1%	25%	69%	1%	2%	1%	83%	89%
	4–6	1%	1%	27%	66%	1%	3%	2%	82%	89%
	7–9	1%	1%	28%	63%	1%	3%	2%	80%	88%
	10+	1%	2%	45%	35%	4%	6%	7%	70%	77%
Account balance	<$10,000	<0.5%	1%	8%	87%	1%	1%	2%	80%	89%
	$10,000–$24,999	<0.5%	1%	12%	81%	1%	2%	3%	79%	89%
	$25,000–$49,999	<0.5%	1%	17%	75%	1%	2%	3%	78%	88%
	$50,000–$99,999	<0.5%	1%	22%	68%	2%	3%	4%	77%	85%
	$100,000–$149,999	<0.5%	2%	26%	62%	2%	4%	5%	76%	84%
	$150,000–$199,999	<0.5%	2%	29%	57%	2%	4%	5%	75%	83%
	$200,000–$249,999	1%	2%	32%	54%	2%	4%	5%	75%	83%
	$250,000+	1%	2%	48%	33%	3%	6%	6%	74%	81%

Source: Vanguard 2025.

Participants younger than 45 had the highest equity exposure, with about 90% of plan assets, at the median, invested in equities.

Equity allocations were lowest for participants age 65 or older, many of whom are retired or will be soon. Participants 65 or older had a median equity allocation of 50%.

The rising use of target-date funds has markedly changed the age-related variation in equity exposure **(see page 77)**.

Asset allocation by industry group

Asset allocations varied somewhat by industry group in 2024 **(Figure 61)**. Participants in the media, entertainment, and leisure group had the most aggressive allocations and the highest allocations to target-date funds.

Figure 61. Asset allocation by industry group, 2024

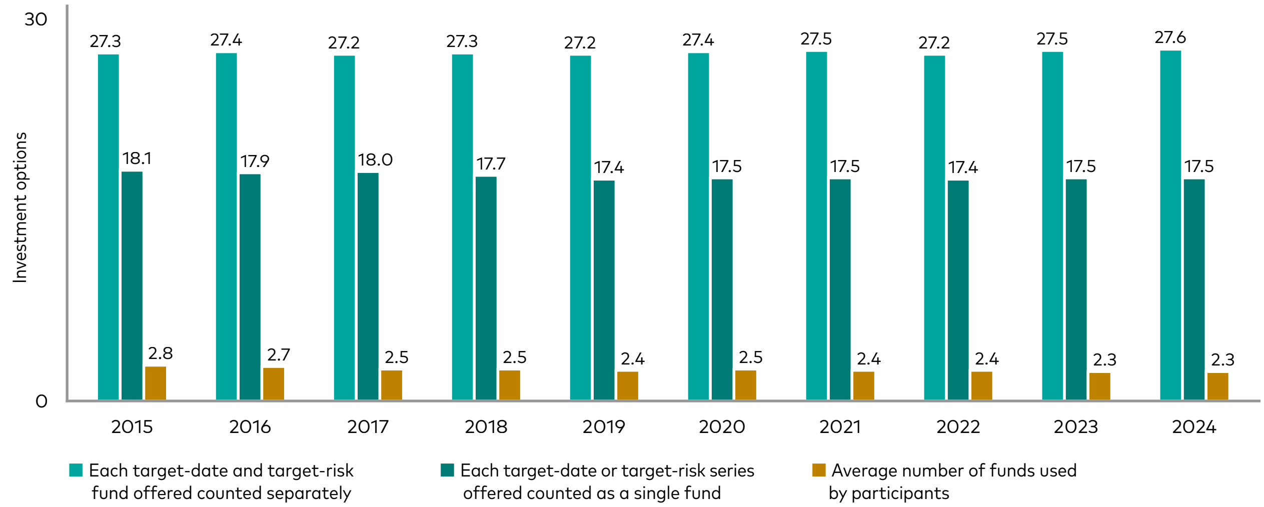
Vanguard defined contribution plans

		Brokerage	Company stock	Diversified equity funds	Target-date funds	Other balanced funds	Bond funds	Cash	Average equity participant weighted	Median equity participant weighted
All asset weighted		1%	2%	41%	42%	3%	6%	5%	—	—
Average participant weighted		<0.5%	1%	19%	71%	2%	3%	4%	78%	87%
Industry group	Media, entertainment, and leisure	3%	2%	35%	53%	3%	4%	2%	81%	89%
	Transportation, utilities, and communications	1%	4%	44%	34%	4%	7%	7%	79%	89%
	Business, professional, and nonprofit	1%	3%	45%	39%	2%	6%	5%	78%	89%
	Agriculture, mining, and construction	1%	4%	35%	43%	4%	5%	8%	77%	87%
	Education and health	2%	2%	38%	48%	1%	6%	5%	77%	86%
	Manufacturing	2%	4%	38%	45%	2%	5%	6%	77%	85%
	Wholesale and retail trade	<0.5%	1%	48%	35%	1%	8%	7%	76%	86%
	Finance, insurance, and real estate	1%	1%	43%	37%	6%	6%	7%	75%	85%

Source: Vanguard 2025.

Figure 62. Average number of investment options offered and used

Vanguard defined contribution plans



Source: Vanguard 2025.

Plan investment options

Participant DC plan investment decisions occur within the context of a set or a menu of choices offered by the employer.

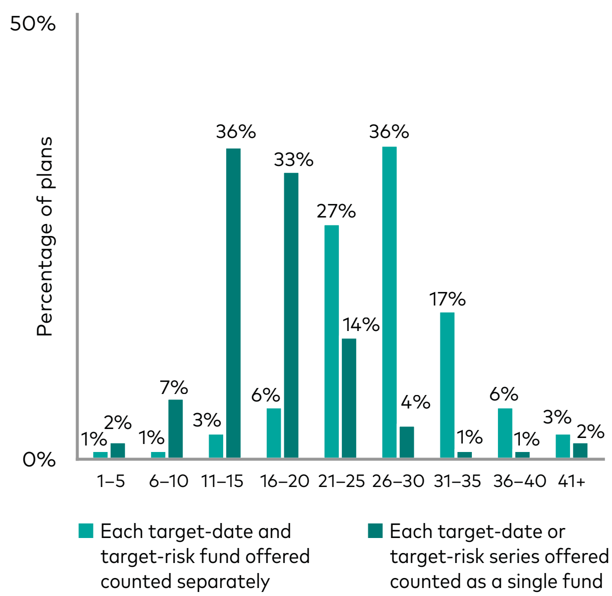
Number of options offered

The average Vanguard plan offered 27.6 investment options in 2024, up slightly from 27.5 in 2023 and generally in line with the past 10 years **(Figure 62)**. When each distinct target-date (or target-risk) fund was counted as a single offering, the average number of investment options was 17.5. By this measure, sponsors have marginally decreased investment options on a net basis since 2015.

The number of funds used by participants has declined over the past decade. This is directly attributable to the growth of target-date funds. Counting a target-date or target-risk series as a single-fund offering, the median plan sponsor offered 16 investment options in 2024. Only 8% of plans offered more than 25 distinct investment options, while 9% of plans offered 10 or fewer **(Figure 63)**.

Figure 63. Number of options offered, 2024

Vanguard defined contribution plans



Source: Vanguard 2025.

Types of options offered

Nearly all Vanguard DC plans offered an array of investment options covering four major investment categories: equities, bonds, balanced funds (including target-date and target-risk strategies), and money market or stable value options **(Figure 64)**. Given most sponsors' desire to promote equity-oriented portfolios for retirement, diversified equity funds continued to be the most popular type of fund offered in 2024. Equity offerings typically included both indexed and actively managed U.S. stock funds, including large-, mid-, or small-capitalization stocks, as well as one or more international funds.

Figure 64. Types of investment options offered, 2024
Vanguard defined contribution plans

	Number of participants				
	All	**<500**	**500–999**	**1,000–4,999**	**5,000+**
Cash	**99%**	**97%**	**100%**	**100%**	**99%**
Money market	73%	74%	71%	77%	68%
Stable value/Investment contract	68%	61%	72%	72%	84%
Bond funds	**98%**	**96%**	**100%**	**99%**	**100%**
Active	81%	73%	83%	87%	92%
Index	90%	89%	90%	91%	95%
Inflation-protected securities	36%	34%	34%	38%	38%
Multisector	8%	6%	8%	11%	6%
High yield	18%	19%	20%	16%	13%
International	19%	18%	21%	21%	17%
Global	<0.5%	<0.5%	1%	0%	1%
Emerging markets	1%	1%	2%	1%	1%
Balanced funds	**99%**	**98%**	**100%**	**100%**	**100%**
Traditional balanced	60%	71%	57%	54%	37%
Target-risk	3%	2%	2%	4%	1%
Target-date	96%	92%	99%	99%	100%
Equity funds	**99%**	**98%**	**100%**	**>99.5%**	**99%**
Domestic equity funds	**99%**	**98%**	**100%**	**>99.5%**	**99%**
Large-cap index	98%	96%	100%	99%	96%
Large-cap active	89%	89%	88%	91%	88%
Large-cap value	86%	87%	85%	90%	76%
Large-cap growth	89%	89%	91%	90%	85%
Large-cap blend	98%	96%	100%	99%	96%
Mid-cap index	83%	80%	92%	86%	84%
Mid-cap active	52%	55%	49%	52%	43%
Small-cap index	63%	65%	68%	64%	42%
Small-cap active	64%	61%	68%	66%	61%
Socially responsible	17%	14%	19%	17%	25%
International equity funds	**97%**	**94%**	**99%**	**99%**	**99%**
Index international	82%	75%	84%	88%	95%
Active international	83%	78%	88%	86%	85%
Emerging markets	33%	31%	37%	37%	28%
Global equity funds	**15%**	**20%**	**14%**	**9%**	**13%**
Sector funds	**38%**	**40%**	**41%**	**39%**	**29%**
Company stock	**8%**	**2%**	**5%**	**12%**	**27%**
Self-directed brokerage	**22%**	**15%**	**20%**	**27%**	**39%**
Managed account program	**45%**	**24%**	**52%**	**62%**	**82%**

Source: Vanguard 2025.

A stable value investment is neither insured nor guaranteed by the U.S. government. There is no assurance that the investment will be able to maintain a stable net asset value, and it is possible to lose money in such an investment.

Virtually all plans offered international equity funds, but only one-third offered separate emerging markets funds. Many of the broader international funds already include emerging markets exposure, as do target-date and some balanced strategies. Thirty-eight percent of plans offered sector funds, such as technology or health care funds **(Figure 65)**. One in 5 plans offered a self-directed brokerage feature.

Meanwhile, plan sponsor interest in target-date funds remained strong, with 96% of plans offering them at year-end 2024.

Plan size had little effect on the types of investment options offered. However, large plans were much more likely than small plans to offer company stock, stable value funds, self-directed brokerage accounts, or managed account programs. Larger plans have been quicker to add target-date and socially responsible funds, but smaller plans were more likely to offer sector funds.

Figure 65. Types of sector options offered, 2024

Vanguard defined contribution plans

	Number of participants				
	All	**<500**	**500–999**	**1,000–4,999**	**5,000+**
Sector funds	**38%**	**40%**	**41%**	**39%**	**29%**
REIT	33%	33%	35%	33%	25%
Health care	8%	12%	10%	5%	3%
Energy	4%	6%	5%	3%	2%
Precious metals	2%	2%	2%	2%	1%
Technology	3%	2%	6%	2%	2%
Utilities	1%	1%	2%	2%	2%
Natural resources	1%	1%	1%	1%	1%
Financials	<0.5%	0%	0%	1%	1%
Communications	<0.5%	<0.5%	1%	<0.5%	1%
Consumer	<0.5%	<0.5%	1%	<0.5%	1%
Industrials	<0.5%	<0.5%	0%	<0.5%	1%

Source: Vanguard 2025.

Tiering

Tiering is a clear, effective way to present plan investment choices to participants. Investment options are presented in categories, or tiers. Typically, tiers are all-in-one options, such as target-date or risk-based balanced funds, an index core, or supplemental investment options. Many Vanguard plan sponsors tier their investment lineup.

Index core

Offering a passive (or index) core is a newer development in investment menu design. A passive core is a comprehensive set of low-cost index options that span the global capital markets. In our definition, a passive core, at a minimum, consists of four options covering U.S. equities, non-U.S. equities, U.S. taxable bonds, and cash. A passive core of these four options offers participants broad diversification, varying levels of risk exposure, and very low investment costs.

In 2024, 68% of Vanguard plans offered at least four options within an index core, and more than 7 in 10 Vanguard participants were offered an index core **(Figure 66)**. In addition, many of these plans also offered a passive target-date fund to further simplify participant portfolio construction. Sixty-six percent of plans offered both an index core and passive target-date funds, and 71% of participants had access to these fund lineups. Compare this with 2015, when 54% of plans offered an index core, and 50% offered both an index core and passive target-date funds **(Figure 67)**. Sixty-seven percent of participants were offered an index core in 2015, with 66% offered both an index core and passive target-date funds **(Figure 68)**.

Figure 66. Index core offered, 2024

Vanguard defined contribution plans

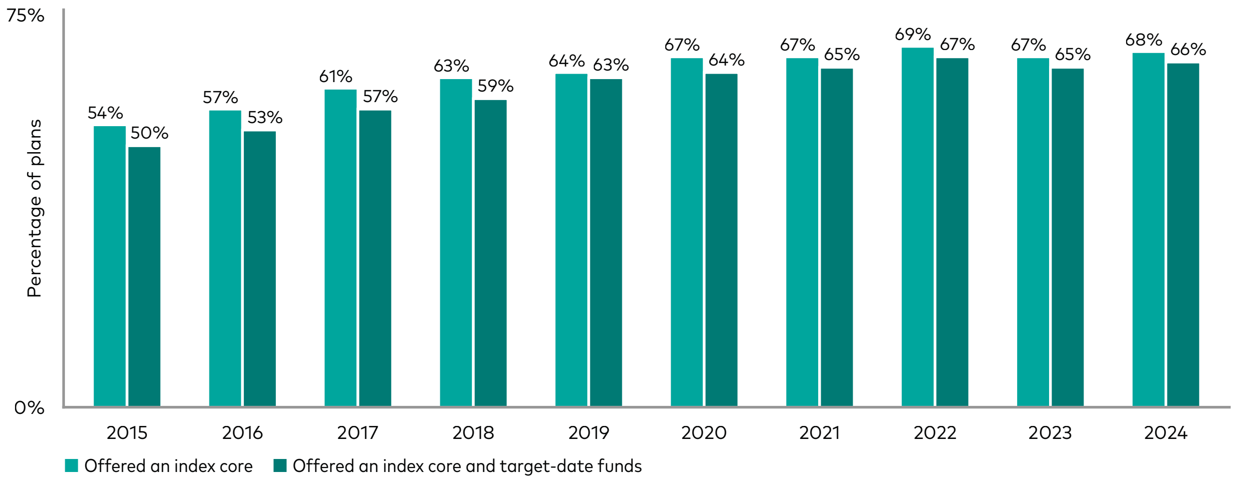
	Number of participants				
	All	**<500**	**500–999**	**1,000–4,999**	**5,000+**
Percentage of plans offering an index core	68%	61%	65%	74%	84%
Percentage of plans offering an index core and target-date funds	66%	57%	65%	74%	84%
Percentage of participants offered an index core	71%	65%	65%	74%	71%
Percentage of participants offered an index core and target-date funds	71%	62%	65%	74%	71%

Note: An index core includes broadly diversified index funds for U.S. stocks, U.S. bonds, and international stocks. At a minimum, the definition includes index funds for large-cap U.S. stocks, intermediate or long-term bonds, and developed markets.

Source: Vanguard 2025.

Figure 67. Index core offered trend, plans

Vanguard defined contribution plans

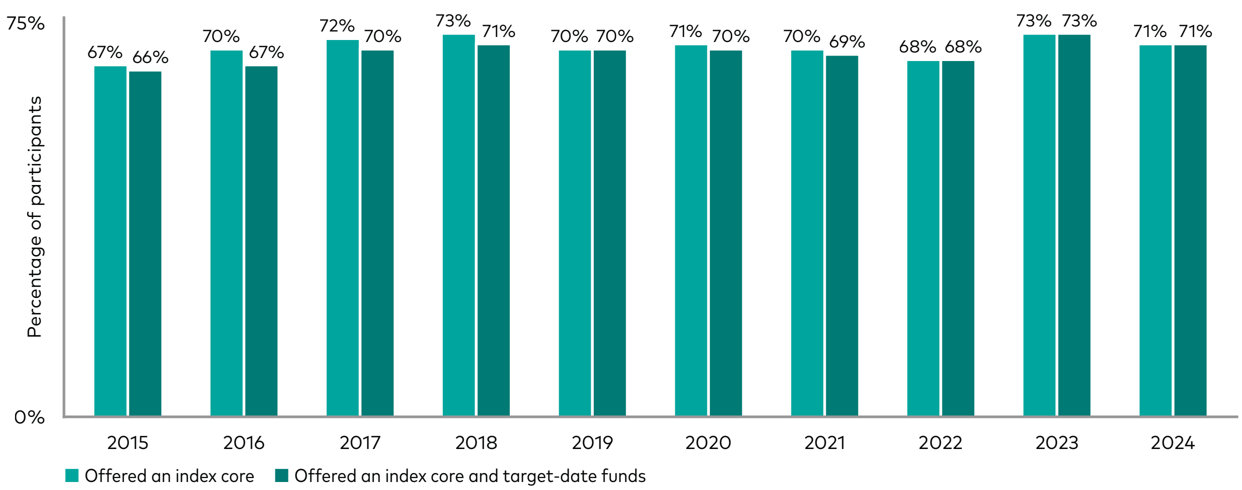


Note: An index core includes broadly diversified index funds for U.S. stocks, U.S. bonds, and international stocks. At a minimum, the definition includes index funds for large-cap U.S. stocks, intermediate or long-term bonds, and developed markets.

Source: Vanguard 2025.

Figure 68. Index core offered trend, participants

Vanguard defined contribution plans



Note: An index core includes broadly diversified index funds for U.S. stocks, U.S. bonds, and international stocks. At a minimum, the definition includes index funds for large-cap U.S. stocks, intermediate or long-term bonds, and developed markets.

Source: Vanguard 2025.

Default funds

Increasingly, participants are being directed into plan sponsor-selected default investments rather than making their own active investment choices. Default investing is growing in importance because of concerns about participants' level of investment knowledge and the growing use of automatic enrollment. In response, the U.S. Department of Labor (DOL), acting under the Pension Protection Act of 2006, deemed three types of default investments as eligible for special fiduciary protection. Known as qualified default investment alternatives (QDIAs), these options include target-date funds, other balanced funds, and managed account advisory services.

Nearly all Vanguard plans had designated a default fund in 2024, and 94% had selected a target-date or balanced fund as the default **(Figure 69)**. In 2015, about 1 in 10 plan sponsors had designated a money market or stable value fund as the default option **(Figure 70)**.

Eighty-nine percent of plans had specifically designated a QDIA under the DOL's regulations in 2024. Typically, these were plans with automatic enrollment or employer contributions other than a match. Among plans designating a QDIA, 98% were target-date funds and 2% were balanced funds.

Figure 69. Default fund designations, 2024

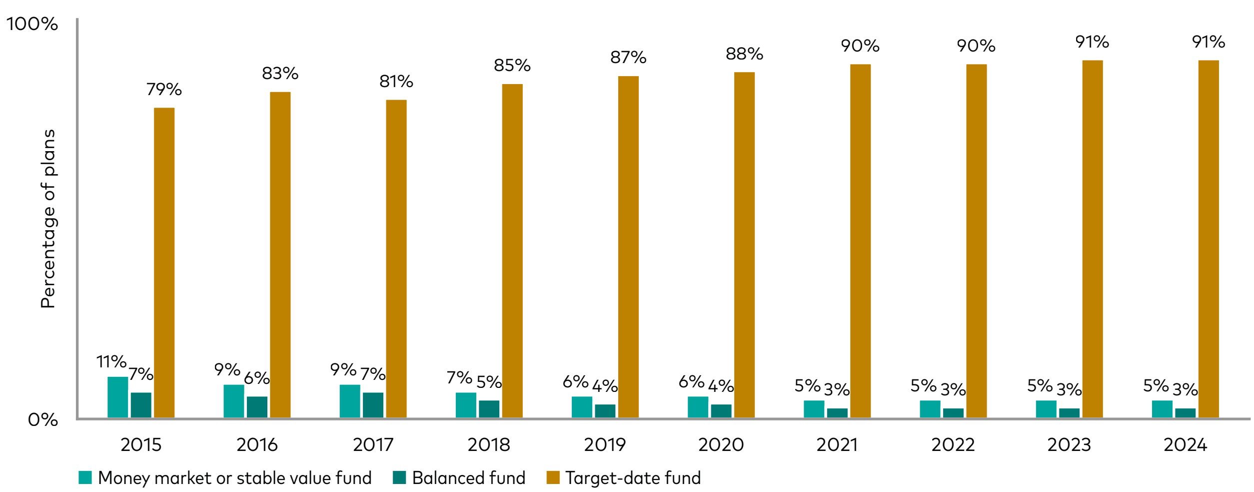
Vanguard defined contribution plans

		QDIA plans	Non-QDIA plans	All plans
Among all plans	Target-date fund	87%	4%	91%
	Balanced fund	2%	1%	3%
	Money market or stable value	–	5%	5%
	Total plans designating default	**89%**	**10%**	**99%**
Among plans designating a QDIA	Target-date fund	98%	–	–
	Balanced fund	2%	–	–
	Total plans designating a QDIA	**100%**	–	–

Source: Vanguard 2025.

Figure 70. Default fund designation trend

Vanguard defined contribution plans



Source: Vanguard 2025.

Number of options used

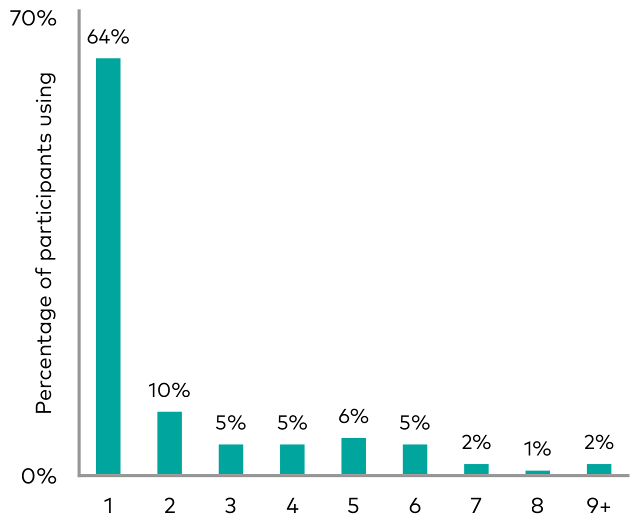
Although most sponsors offered a large menu of investment choices, 64% of participants used only one fund in 2024 **(Figure 71)**. On average, Vanguard participants used 2.3 options in 2024, down from 2.8 options in 2015. The median use was 1.0 option.

The growing number of single target-date fund investors has played a role in this change. Of the 64% of participants who held a single-fund option in their account in 2024, 93% were invested in a single target-date fund **(Figure 72)**. Since 2015, the percentage of single-fund investors holding cash investments has declined from 7% to 3% due to the growth of automatic enrollment, the availability of target-date funds, and a shift in default fund designations by employers.

Figure 71. Number of options used, 2024

Vanguard defined contribution plans

Percentage of participants using

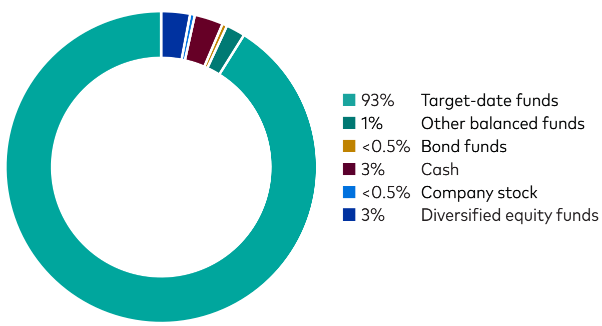


Source: Vanguard 2025.

Figure 72. Single-fund holders, 2024

Vanguard defined contribution plans

Percentage of single-fund participants using



		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage of participants holding a single fund		51%	55%	59%	60%	62%	60%	61%	63%	63%	64%
Percentage of single-fund participants using	Cash	7%	6%	5%	4%	4%	4%	4%	3%	3%	3%
	Bond funds	1%	1%	<0.5%	1%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%
	Traditional balanced funds	4%	6%	5%	5%	5%	2%	1%	1%	2%	1%
	Target-date funds	84%	83%	87%	87%	88%	91%	92%	93%	92%	93%
	Diversified equity funds	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%
	Company stock	1%	1%	1%	1%	1%	1%	<0.5%	<0.5%	<0.5%	<0.5%

Source: Vanguard 2025.

Types of options used

Of the options offered by DC plans, which did participants actually use? A balanced fund (including target-date and other balanced funds) was the most common participant holding (86% of all participants) in 2024, followed by a diversified domestic equity fund (29% of all participants) **(Figure 73)**. Among the balanced options held, target-date funds were overwhelmingly more likely to be held (84% of participants offered) than traditional balanced funds (11% of participants offered).

Ninety-eight percent of participants were offered a large-cap U.S. equity index fund, yet only about 1 in 5 used that option. However, participants holding balanced strategies (whether traditional, target-date, or target-risk) are often holding substantial equity index exposure.

Only 1 in 6 participants chose to hold a bond fund; about 1 in 10 chose a money market or stable value cash investment.

Most Vanguard DC participants were offered a stand-alone international equity fund, but only 18% chose to invest in one. Emerging markets funds were offered and used even less frequently, with 3 in 10 participants having access, but only 9% choosing to use one. Increasingly, international equity exposure is occurring through packaged investment programs, such as target-date funds.

Figure 73. Types of investment options offered and used, 2024

Vanguard defined contribution plans

	Percentage of plans offering	Percentage of participants offered	Percentage of participants using if offered	Percentage of all participants using
Cash	**99%**	**>99.5%**	**11%**	**11%**
Money market	73%	65%	5%	3%
Stable value/Investment contract	68%	85%	9%	8%
Bond funds	**98%**	**>99.5%**	**17%**	**17%**
Active	81%	91%	6%	6%
Index	90%	96%	14%	13%
Inflation-protected securities	36%	40%	3%	1%
Multisector	8%	11%	1%	<0.5%
High-yield	18%	10%	3%	<0.5%
International	19%	26%	5%	1%
Global	<0.5%	1%	<0.5%	<0.5%
Emerging markets	1%	1%	1%	<0.5%
Balanced funds	**99%**	**>99.5%**	**86%**	**86%**
Traditional balanced	60%	45%	11%	5%
Target-risk	3%	1%	1%	<0.5%
Target-date	96%	>99.5%	84%	84%
Equity funds	**99%**	**>99.5%**	**30%**	**30%**
Domestic equity funds	**99%**	**99%**	**29%**	**29%**
Large-cap index	98%	93%	24%	22%
Large-cap active	89%	89%	15%	13%
Large-cap value	86%	74%	8%	6%
Large-cap growth	89%	80%	12%	10%
Large-cap blend	98%	98%	24%	24%
Mid-cap index	83%	82%	14%	11%
Mid-cap active	52%	41%	6%	3%
Small-cap index	63%	41%	11%	4%
Small-cap active	64%	54%	6%	3%
Socially responsible	17%	33%	6%	2%
International equity funds	**97%**	**>99.5%**	**18%**	**18%**
Index international	82%	95%	14%	13%
Active international	83%	87%	8%	7%
Emerging markets	33%	30%	9%	3%
Global equity funds	**15%**	**17%**	**3%**	**1%**
Sector funds	**38%**	**25%**	**5%**	**1%**
Company stock	**8%**	**33%**	**21%**	**7%**
Self-directed brokerage	**22%**	**44%**	**1%**	**1%**
Managed account program	**45%**	**79%**	**9%**	**7%**

Source: Vanguard 2025.

Sector funds were offered to one-quarter of participants in 2024 but were used infrequently; only 5% of participants that were offered these funds used them **(Figure 74)**.

Forty-four percent of Vanguard participants were offered a self-directed brokerage feature. Self-directed brokerage accounts allow participants to choose investments from thousands of individual stocks, bonds, and mutual funds. In plans offering this feature, only 1% of these participants used it in 2024. In these plans, about 2% of plan assets were invested in the self-directed brokerage feature.

Figure 74. Types of sector options offered and used, 2024

Vanguard defined contribution plans

	Percentage of plans offering	Percentage of participants offered	Percentage of participants offered using	Percentage of all participants using
Sector funds	**38%**	**25%**	**5%**	**1%**
REIT	33%	21%	4%	1%
Health care	8%	2%	6%	<0.5%
Energy	4%	1%	4%	<0.5%
Precious metals	2%	1%	2%	<0.5%
Technology	3%	2%	5%	<0.5%
Utilities	1%	1%	2%	<0.5%
Natural resources	1%	1%	3%	<0.5%
Financials	<0.5%	1%	1%	<0.5%
Communications	<0.5%	1%	1%	<0.5%
Consumer	<0.5%	1%	1%	<0.5%
Industrials	<0.5%	1%	1%	<0.5%

Source: Vanguard 2025.

Equity funds that incorporate environmental, social, and governance (ESG) factors have seen increased availability and use over the last five years **(Figure 75)**. Larger plans have been more likely than smaller plans to include these funds in their investment lineups.

Figure 75. Socially responsible funds offered and used

Vanguard defined contribution plans

		2020	2021	2022	2023	2024
All plans	Percentage of plans offering socially responsible funds	12%	13%	15%	17%	17%
	Percentage of participants offered socially responsible funds	26%	30%	31%	34%	33%
	Percentage of participants using socially responsible funds when offered	5%	6%	5%	5%	6%
Plans with <1,000 participants	Percentage of plans offering socially responsible funds	10%	11%	13%	14%	15%
	Percentage of participants offered socially responsible funds	10%	11%	14%	17%	18%
	Percentage of participants using socially responsible funds when offered	3%	3%	3%	3%	3%
Plans with 1,000+ participants	Percentage of plans offering socially responsible funds	16%	18%	19%	20%	19%
	Percentage of participants offered socially responsible funds	28%	31%	32%	35%	34%
	Percentage of participants using socially responsible funds when offered	5%	6%	5%	5%	6%

Source: Vanguard 2025.

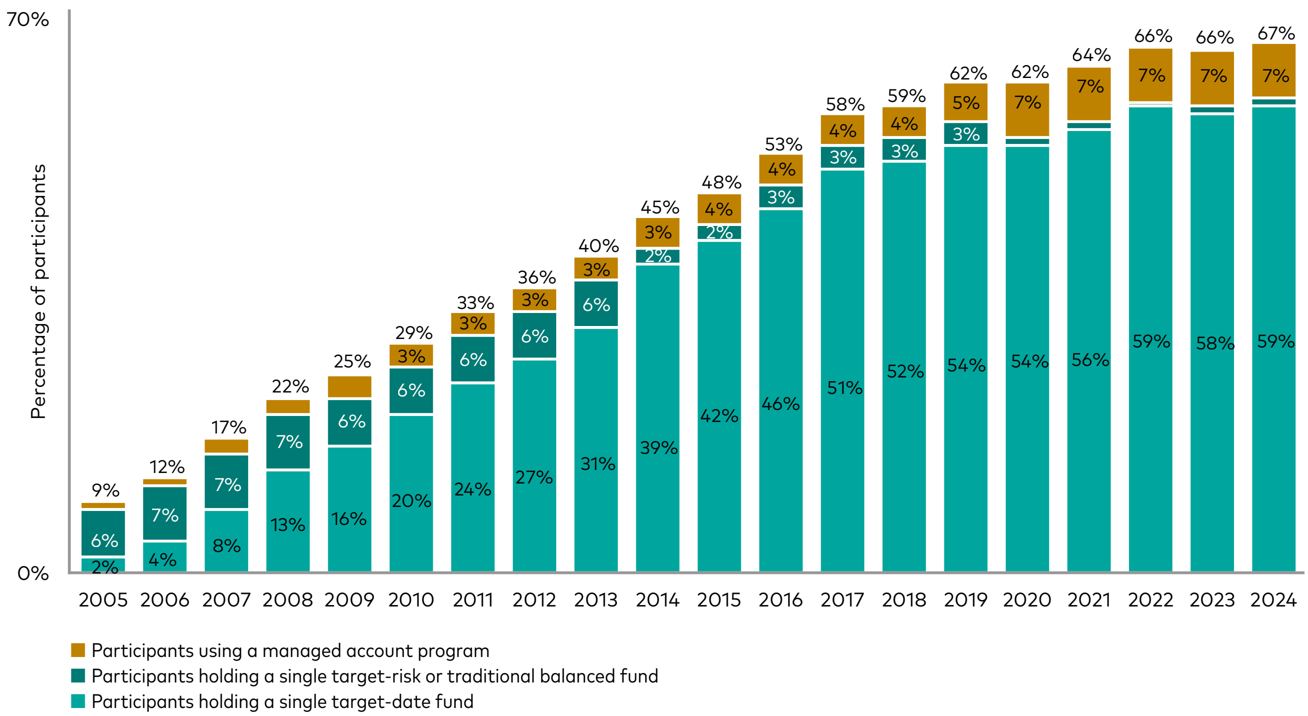
Professionally managed allocations

The expanded offering and use of professionally managed allocations is the most notable effect of plan investment menus on participant choices. Participants with professionally managed allocations have their entire account balance invested in a single target-date, target-risk, or traditional balanced fund, or in a managed account advisory service.

In 2024, 67% of Vanguard participants were invested in a professionally managed allocation—an all-time high **(Figure 76)**.

Figure 76. Participants with professionally managed allocations

Vanguard defined contribution plans



Note: Bars in chart may not align precisely with percentages due to rounding.

Source: Vanguard 2025.

Driving this trend is the growing use of target-date funds. Fifty-nine percent of participants were invested in a single target-date fund in 2024, 50% higher than in 2014. These professionally managed investment options signal a shift in responsibility for investment decision-making away from the participant and toward employer-selected investment and advice programs.

There were distinct demographic differences between participants with professionally managed allocations and those without, as well as distinctions among those with each of the three types of managed allocations **(Figure 77)**.

Participants who constructed their own portfolios tended to be older and longer tenured with higher average and median balances. Single target-date fund investors were shorter tenured with lower account balances and were more likely to be in an automatic enrollment plan and to have been defaulted into the fund. In contrast, managed account investors were older, longer tenured, and had higher balances, compared with single target-date fund investors. Some plan sponsors have opted to reenroll participants into the plan's QDIA. This most often occurs when changing providers.

Figure 77. Demographic characteristics of participants with professionally managed allocations, 2024

Vanguard defined contribution plans

	All	All other participants	Single target-date fund	Single balanced fund	Managed account
Percentage of participants	–	33%	59%	1%	7%
Percentage male	57%	61%	55%	65%	56%
Median age	43	50	39	52	48
Median tenure	6	14	4	17	10
Average account balance	$148,153	$292,254	$64,078	$168,155	$194,645
Median account balance	$38,176	$124,498	$17,539	$66,177	$86,960

Source: Vanguard 2025.

Professionally managed allocations by participant demographics

The percentage of participants with a professionally managed allocation varied somewhat by participant demographics in 2024 **(Figure 78)**. Younger and less-tenured participants were more likely to be single target-date fund investors. Higher-paid, higher-balance participants tended to use managed account programs more often.

However, use of the strategy was distributed evenly across most demographics, highlighting the understanding of the value managed accounts can provide across participant cohorts.

Participants in automatic enrollment plans were more likely to have a professionally managed allocation than were those in voluntary arrangements because of a higher percentage of single target-date fund investors.

Figure 78. Professionally managed allocations by demographics, 2024

Vanguard defined contribution plans

		Participants holding a single target-date fund	Participants holding a single target-risk or traditional balanced fund	Participants using a managed account program	Total
All participants		**59%**	**1%**	**7%**	**67%**
Income	<$15,000	84%	<0.5%	4%	88%
	$15,000–$29,999	82%	<0.5%	5%	87%
	$30,000–$49,999	77%	<0.5%	7%	84%
	$50,000–$74,999	68%	<0.5%	9%	77%
	$75,000–$99,999	58%	<0.5%	11%	70%
	$100,000–$149,999	50%	<0.5%	12%	62%
	$150,000+	44%	<0.5%	11%	55%
	Terminated	53%	1%	5%	59%
Age	<25	87%	<0.5%	2%	89%
	25–34	76%	<0.5%	5%	81%
	35–44	65%	<0.5%	7%	73%
	45–54	53%	1%	9%	62%
	55–64	44%	1%	10%	54%
	65+	34%	1%	8%	44%
Gender	Male	57%	1%	8%	65%
	Female	62%	<0.5%	8%	70%
Job tenure (years)	0–1	86%	<0.5%	3%	88%
	2–3	75%	<0.5%	6%	81%
	4–6	69%	<0.5%	7%	77%
	7–9	63%	1%	9%	72%
	10+	37%	1%	10%	48%
Account balance	<$10,000	85%	<0.5%	3%	89%
	$10,000–$24,999	72%	1%	6%	79%
	$25,000–$49,999	64%	1%	8%	72%
	$50,000–$99,999	54%	1%	9%	64%
	$100,000–$149,999	46%	1%	10%	57%
	$150,000–$199,999	41%	1%	11%	53%
	$200,000–$249,999	37%	1%	11%	49%
	$250,000+	22%	1%	11%	34%
Plan design	Automatic enrollment	64%	<0.5%	7%	71%
	Voluntary enrollment	50%	1%	9%	61%

Source: Vanguard 2025.

Target-date funds

Target-date funds base portfolio allocations on an expected retirement date, with allocations growing more conservative as the participant approaches the fund's target year. At year-end 2024, nearly all participants, were in plans offering target-date funds **(Figure 79)**.

Among plans offering the strategy, target-date options accounted for 42% of all plan assets **(Figure 80)**. In these plans, 64% of all contributions were directed to target-date funds.

Figure 79. Use of target-date funds

Vanguard defined contribution plans

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage of all plans offering target-date funds	90%	92%	92%	93%	94%	95%	95%	96%	96%	96%
Percentage of recordkeeping assets in target-date funds	26%	28%	33%	35%	37%	37%	38%	40%	41%	42%
Percentage of all contributions directed to target-date funds	46%	49%	54%	57%	59%	60%	61%	63%	64%	64%
Percentage of all participants offered target-date funds	98%	97%	97%	97%	98%	99%	>99.5%	>99.5%	>99.5%	>99.5%
Percentage of all participants using target-date funds	69%	72%	75%	77%	78%	80%	81%	83%	83%	84%

Source: Vanguard 2025.

Investments in target-date funds are subject to the risks of their underlying funds. The year in the fund name refers to the approximate year (the target date) when an investor in the fund would retire and leave the workforce. The fund will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. An investment in target-date funds is not guaranteed at any time, including on or after the target date.

Figure 80. Plan use of target-date funds

Vanguard defined contribution plans offering target-date funds

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage of plan assets invested in target-date funds		**26%**	**29%**	**33%**	**35%**	**37%**	**37%**	**38%**	**40%**	**41%**	**42%**
Percentage of plan contributions invested in target-date funds		**47%**	**50%**	**55%**	**58%**	**60%**	**60%**	**61%**	**63%**	**64%**	**64%**
Distribution of percentage of plan assets in target-date funds	**<10%**	13%	11%	9%	7%	6%	5%	5%	5%	5%	4%
	10%–19%	26%	22%	19%	16%	14%	13%	11%	10%	8%	8%
	20%–29%	25%	25%	23%	23%	20%	20%	19%	17%	17%	16%
	30%–39%	13%	15%	18%	18%	20%	22%	23%	21%	20%	20%
	40%–49%	8%	9%	10%	12%	13%	13%	14%	17%	18%	18%
	50%+	15%	18%	21%	24%	27%	27%	28%	30%	32%	34%
Distribution of percentage of plan contributions to target-date funds	**<10%**	4%	4%	3%	2%	1%	2%	2%	2%	1%	1%
	10%–19%	8%	7%	6%	4%	4%	3%	2%	3%	2%	2%
	20%–29%	14%	10%	8%	8%	7%	6%	5%	3%	4%	3%
	30%–39%	18%	17%	14%	12%	9%	9%	7%	7%	6%	6%
	40%–49%	21%	20%	19%	18%	16%	14%	14%	12%	11%	11%
	50%+	35%	42%	50%	56%	63%	66%	70%	73%	76%	77%

Source: Vanguard 2025.

Investments in target-date funds are subject to the risks of their underlying funds. The year in the fund name refers to the approximate year (the target date) when an investor in the fund would retire and leave the workforce. The fund will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. An investment in target-date funds is not guaranteed at any time, including on or after the target date.

Participant use of target-date funds

Among participants using target-date funds in 2024, 63% of their account balances were invested in these funds **(Figure 81)**. They directed 85% of their total contributions to target-date funds. Participants invest in target-date funds in one of two ways. "Pure" investors hold a single target-date fund. They accounted for 71% of all target-date investors in 2024. The remaining target-date investors are "mixed" investors. They hold a target-date fund in combination with other investments or, less commonly, multiple target-date funds and/or other options.

Figure 81. Participant use of target-date funds

Vanguard defined contribution plan participants using target-date funds

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage of all participants offered target-date funds		**98%**	**97%**	**97%**	**97%**	**98%**	**99%**	**>99.5%**	**>99.5%**	**>99.5%**	**>99.5%**
Percentage of participants using target-date funds when offered		**70%**	**74%**	**75%**	**79%**	**80%**	**80%**	**82%**	**83%**	**83%**	**84%**
Percentage of participant account balances in target-date funds		**51%**	**53%**	**57%**	**58%**	**60%**	**59%**	**60%**	**61%**	**62%**	**63%**
Percentage of total participant and employer contributions in target-date funds		**76%**	**78%**	**80%**	**81%**	**81%**	**81%**	**81%**	**82%**	**83%**	**85%**
Distribution of percentage of participant assets in target-date funds	1%–24%	14%	13%	11%	11%	10%	11%	10%	10%	10%	9%
	25%–49%	9%	8%	8%	8%	8%	9%	9%	8%	8%	8%
	50%–74%	7%	6%	5%	5%	5%	4%	4%	4%	4%	4%
	75%–99%	7%	7%	7%	6%	6%	6%	6%	6%	6%	6%
	100%	63%	66%	69%	70%	71%	70%	71%	72%	72%	73%
Distribution of percentage of total participant and employer contributions in target-date funds	1%–24%	8%	8%	6%	6%	6%	7%	6%	6%	6%	6%
	25%–49%	8%	7%	7%	6%	7%	8%	8%	7%	7%	7%
	50%–74%	6%	4%	4%	4%	4%	4%	4%	4%	4%	4%
	75%–99%	5%	5%	4%	4%	4%	3%	3%	3%	3%	3%
	100%	73%	76%	79%	80%	79%	78%	79%	80%	80%	80%
Percentage of participants owning	One target-date fund only	62%	65%	67%	68%	69%	67%	69%	71%	70%	71%
	One target-date fund plus other funds	31%	28%	26%	26%	25%	27%	25%	23%	24%	23%
	Two or more target-date funds only	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
	Two or more target-date funds plus other funds	5%	5%	5%	4%	4%	4%	4%	4%	4%	4%

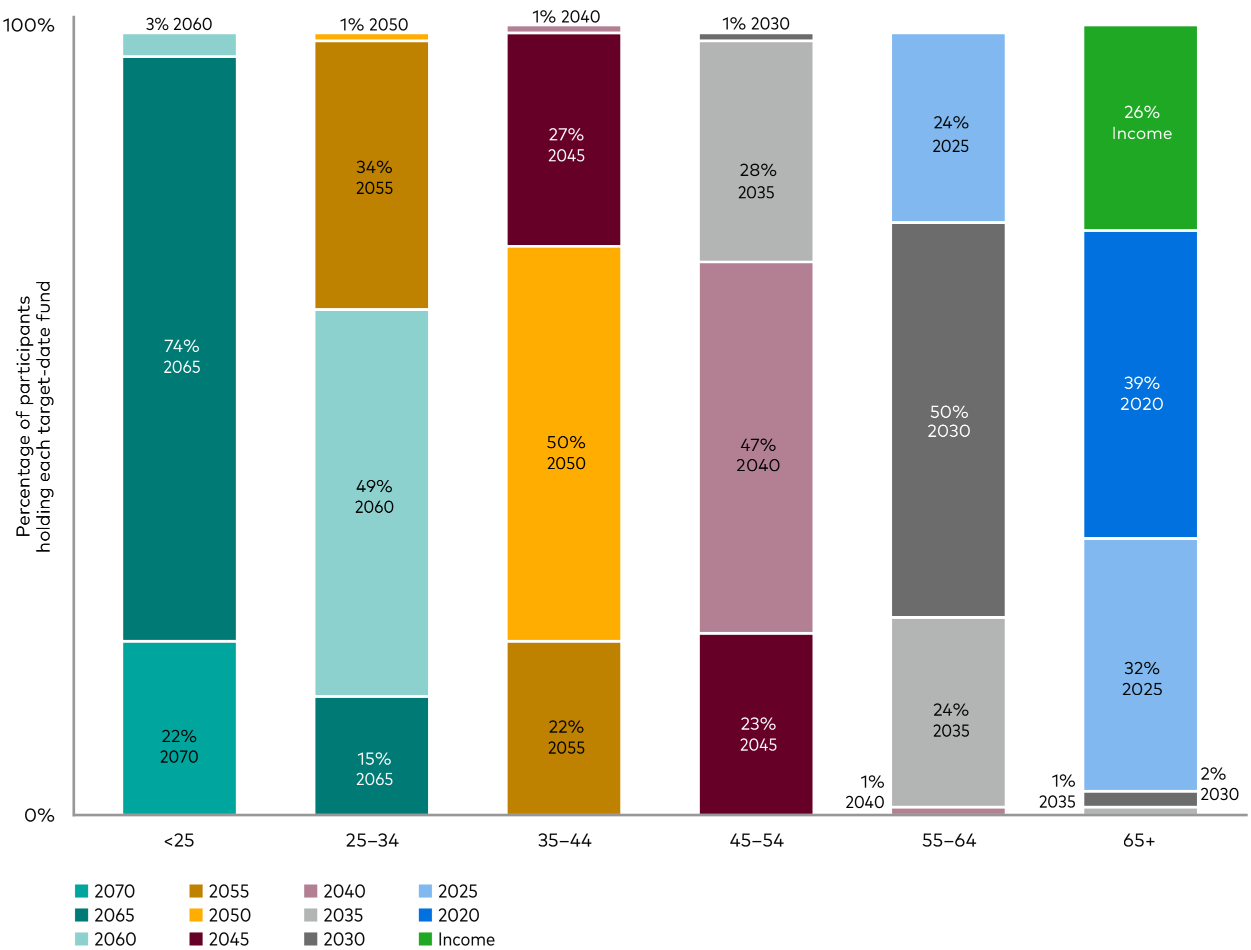
Source: Vanguard 2025.

Mixed target-date investors arise through both sponsor action and participant choice. Sponsor actions include employer contributions in company stock; nonelective contributions to the plan's default fund; recordkeeping corrections applied to the plan's default fund; or mapping of assets from an existing investment option to the default fund because of a plan menu change. Mixed investors who choose to combine a target-date fund with other plan options appear to pursue a range of reasonable diversification strategies, although they do not fit within the all-in-one portfolio approach of the target-date concept.

Single target-date fund investors appeared to select, or were defaulted into, a target-date fund with an appropriate target date **(Figure 82)**. About one-half of participants ages 25 to 34 were invested in a 2060 target-date fund in 2024, and most of the remaining participants were in a 2055 target-date fund. Similarly, 50% of participants ages 55 to 64 were invested in a 2030 target-date fund, and most of the remaining participants were in a 2035 or 2025 target-date fund.

Figure 82. Target-date fund use by age, 2024

Vanguard defined contribution plan participants holding a single target-date fund (59% of all participants)



	<25	25–34	35–44	45–54	55–64	65+
Percentage of single target-date fund holders	7%	29%	28%	19%	13%	5%

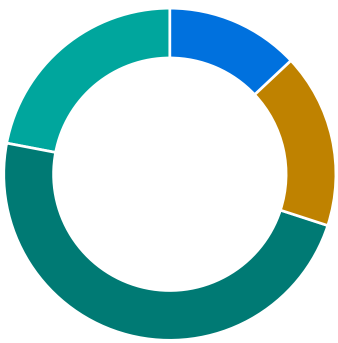
Source: Vanguard 2025.

Automatic enrollment into a target-date fund default is a key factor in the increased number of pure target-date investors. However, one-third of target-date investors voluntarily selected target-date options in 2024.

Of the pure target-date investors, some were in plans not offering automatic enrollment. Three in 10 pure investors were in plans where participants selected the fund **(Figure 83)**.

Figure 83. Plan design and target-date funds, 2024

Vanguard defined contribution plan participants holding target-date funds



Source: Vanguard 2025.

Participant equity allocations

Equities are the dominant asset class holding of many DC plan participants. From an investment risk perspective, an asset allocation to equities of 80% or more seems appropriate for the long-term retirement objectives of most participants.

The increased use of professionally managed allocations within DC plans, including target-date funds, is reshaping equity allocations by age and reducing extreme allocations.

Equity allocations by age

In 2005, we noted that participants' age-based equity allocation was hump-shaped, with younger participants adopting more conservative allocations, middle-aged participants holding the highest equity exposure, and older participants having equity exposure similar to that of younger participants **(Figure 84)**. In 2024, the equity allocation of Vanguard DC participants was downward sloping by age. This is tied directly to the growing use of target-date funds and managed account advice, both of which provide for declining equity exposure with age.

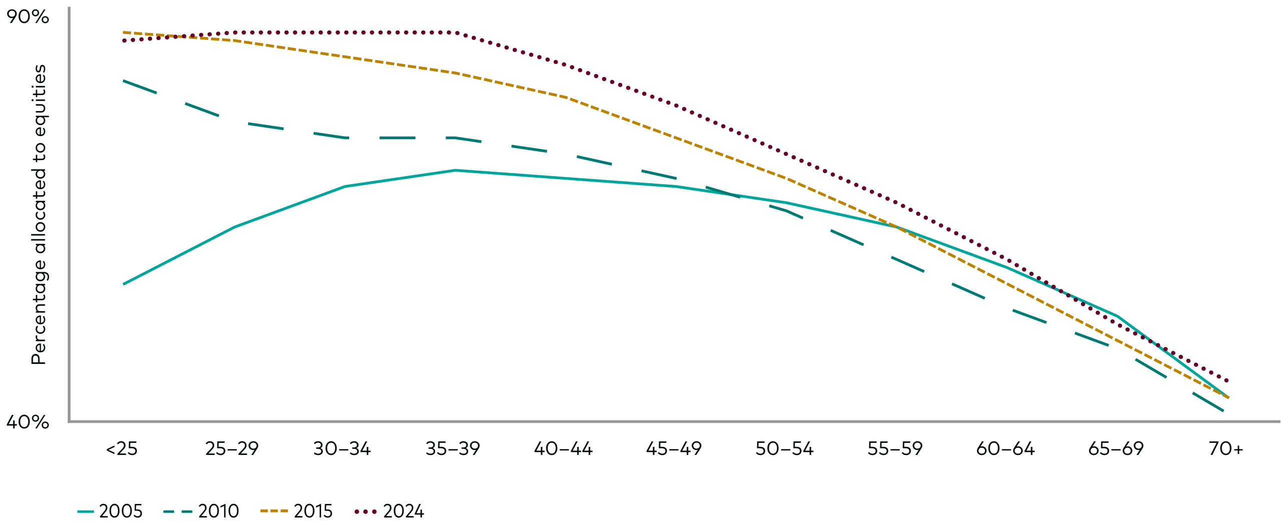
Influencing this change is the growth of default funds under automatic enrollment and the designation of target-date funds as the most common default investment. However, participants voluntarily choosing target-date funds is also contributing in a meaningful way to this shift.

The factors influencing age-related equity exposure in DC plans are also changing. On one hand, existing participants make few changes in their allocations as they grow older because of inertia in financial decision-making. On the other hand, the growing use of professionally managed allocations is contributing to a sharper delineation of equity risk-taking by age.

Figure 84. Trend in asset allocation by participant age

Vanguard defined contribution plans

Average equity allocation, participant weighted



Equity allocation by age	<25	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70+
2024	87%	88%	88%	88%	84%	79%	73%	67%	60%	52%	45%
2023	88%	89%	89%	88%	84%	79%	73%	67%	60%	52%	45%
2022	89%	89%	88%	87%	83%	77%	71%	65%	57%	49%	42%
2021	88%	88%	88%	86%	83%	77%	71%	64%	57%	49%	43%
2020	88%	88%	87%	85%	81%	76%	70%	64%	56%	49%	43%
2019	88%	88%	87%	85%	81%	76%	70%	64%	56%	49%	43%
2018	88%	87%	86%	84%	80%	75%	69%	62%	55%	47%	42%
2017	88%	87%	86%	84%	81%	76%	71%	64%	57%	50%	43%
2016	87%	87%	85%	83%	80%	75%	69%	63%	56%	49%	43%
2015	88%	87%	85%	83%	80%	75%	70%	64%	57%	50%	43%
2014	87%	86%	84%	82%	79%	75%	70%	64%	57%	51%	45%
2013	85%	83%	80%	79%	76%	73%	68%	63%	56%	51%	44%
2012	85%	81%	78%	76%	74%	70%	65%	59%	53%	48%	41%
2011	84%	79%	76%	75%	73%	69%	64%	59%	52%	48%	40%
2010	82%	77%	75%	75%	73%	70%	66%	60%	54%	49%	41%
2009	77%	73%	72%	72%	71%	68%	64%	58%	53%	48%	40%
2008	73%	70%	70%	71%	69%	66%	62%	57%	52%	47%	39%
2007	67%	69%	72%	73%	72%	70%	68%	63%	59%	54%	44%
2006	61%	66%	70%	72%	71%	70%	67%	64%	59%	54%	44%
2005	57%	64%	69%	71%	70%	69%	67%	64%	59%	53%	43%

Source: Vanguard 2025.

Extreme equity allocations

The rising use of professionally managed allocations is also influencing extreme portfolio allocations. The percentage of participants with no allocation to equities has fallen by three-quarters, from 13% in 2006, when the Pension Protection Act of 2006 was passed, to 2% in 2024, an all-time low **(Figure 85)**. At the other extreme, the percentage of participants investing exclusively in equities has fallen from 19% to 5% over the same period.

The elimination of extreme equity allocations is a benefit of target-date funds. Participants who constructed their own portfolios tended to hold greater extremes in equity exposure than those with professionally managed allocations, including target-date funds, in 2024 **(Figure 86, Panel D)**.

Twenty-four percent of do-it-yourself investors held extreme portfolios (7% with no equities, 17% with only equities). Professionally managed investors generally do not hold extreme positions because these portfolios typically include both equity and fixed income assets.

Figure 85. Distribution of equity exposure

Vanguard defined contribution plans

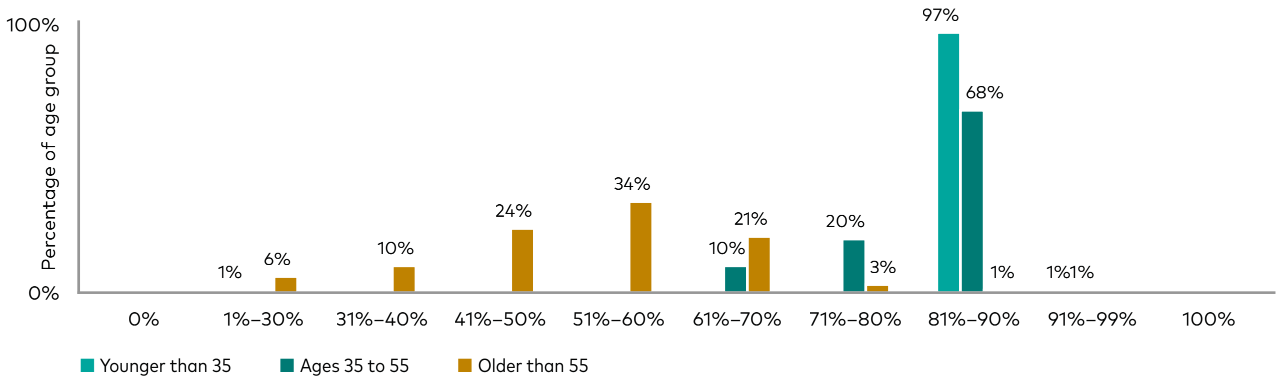
												Participant weighted	
		0%	1%–30%	31%–40%	41%–50%	51%–60%	61%–70%	71%–80%	81%–90%	91%–99%	100%	Average	Median
Percentage of contributions to equities, 2024		**2%**	**1%**	**1%**	**2%**	**5%**	**12%**	**11%**	**53%**	**8%**	**5%**	**80%**	**89%**
Percentage of account balance in equities	2024	2%	3%	2%	4%	6%	9%	11%	49%	9%	5%	78%	87%
	2023	3%	3%	2%	2%	6%	12%	11%	47%	9%	5%	78%	87%
	2022	3%	4%	1%	3%	6%	8%	16%	47%	8%	4%	77%	86%
	2021	3%	3%	1%	3%	6%	9%	17%	44%	9%	5%	77%	87%
	2020	3%	3%	2%	3%	7%	9%	12%	46%	10%	5%	76%	86%
	2019	3%	3%	4%	1%	7%	12%	13%	44%	8%	5%	76%	84%
	2018	3%	3%	4%	2%	6%	13%	13%	42%	8%	6%	75%	84%
	2017	3%	4%	3%	3%	6%	9%	18%	40%	9%	5%	75%	84%
	2016	4%	4%	4%	3%	6%	10%	16%	38%	9%	6%	74%	83%
	2015	5%	4%	2%	3%	7%	10%	12%	40%	10%	7%	74%	83%
	2014	5%	4%	3%	2%	8%	10%	13%	37%	10%	8%	74%	83%
	2013	6%	5%	6%	2%	6%	12%	12%	33%	10%	8%	72%	82%
	2012	7%	6%	5%	4%	7%	10%	15%	28%	9%	9%	69%	79%
	2011	8%	7%	5%	4%	7%	10%	14%	26%	9%	10%	68%	79%
	2010	9%	6%	3%	6%	6%	10%	12%	26%	9%	13%	68%	79%
	2009	11%	6%	3%	6%	7%	11%	11%	22%	9%	14%	66%	76%
	2008	11%	7%	4%	4%	9%	12%	11%	18%	8%	16%	65%	74%
	2007	11%	5%	2%	6%	5%	11%	11%	19%	13%	17%	68%	80%
	2006	13%	6%	3%	5%	5%	10%	11%	16%	12%	19%	68%	79%
	2005	13%	6%	3%	6%	6%	10%	9%	14%	12%	21%	67%	78%

Source: Vanguard 2025.

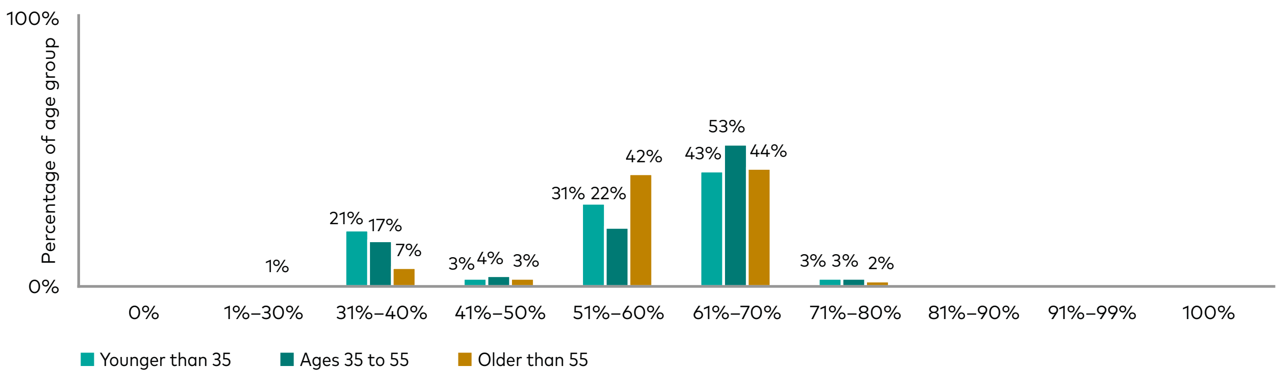
Figure 86. Distribution of equity exposure by investor type, 2024

Vanguard defined contribution plan participants

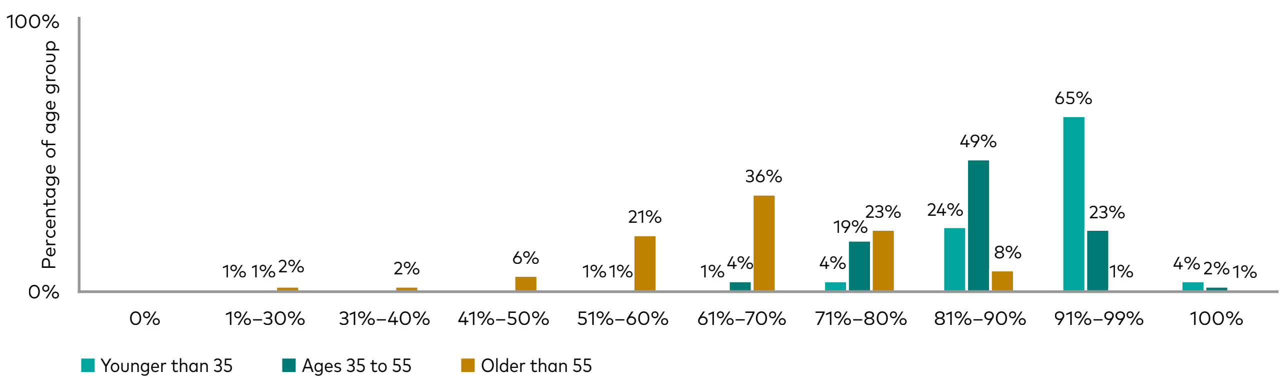
A. Single target-date fund participants (59% of all participants)



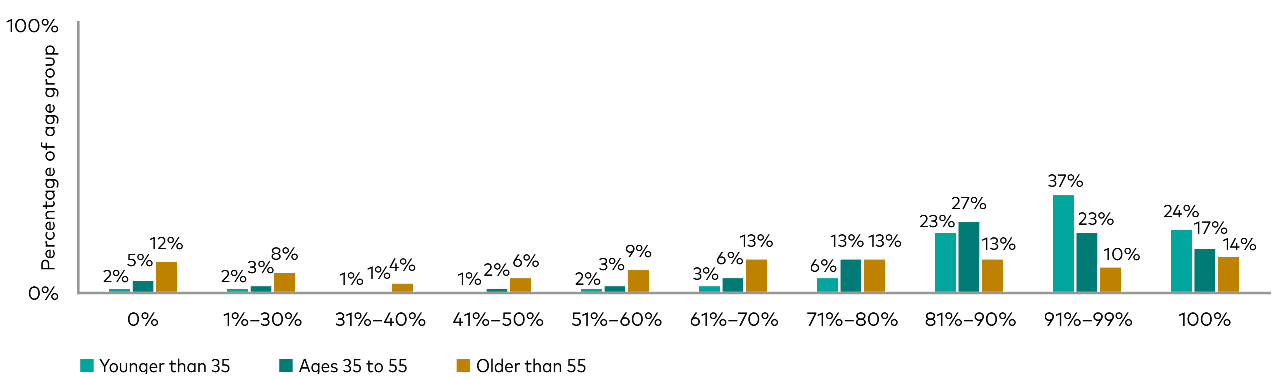
B. Single balanced fund participants (1% of all participants)



C. Managed account participants (7% of all participants)



D. All other participants (33% of all participants)



Source: Vanguard 2025.

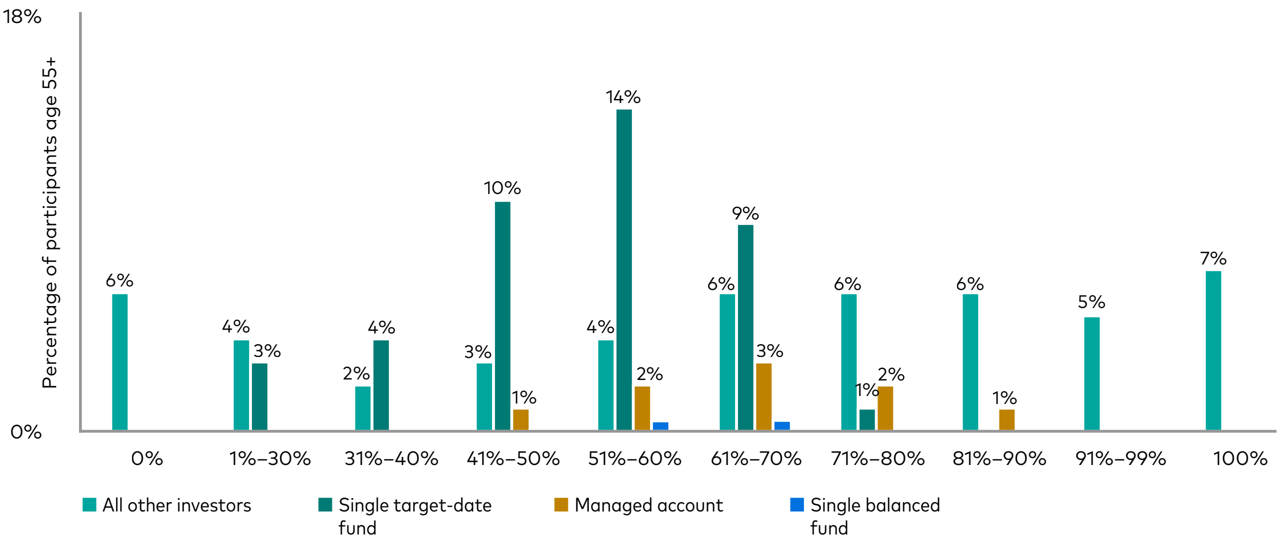
Among pure target-date investors, virtually all had equity allocations ranging from 51% to 90% of their portfolios in 2024. A large group of pure target-date investors had equity allocations in the 81%-to-90% range.

This reflects two facts: (1) automatic enrollment into target-date funds typically applies to new hires who are disproportionately younger than 40; and (2) in voluntary enrollment plans, a single target-date fund is a popular strategy among new hires. Among pure target-date investors, there is also age-appropriate variation in the equity allocation.

Older participants, who were perhaps preparing for or already in retirement, were most likely to construct their own portfolio in 2024 **(Figure 87)**. Forty-nine percent of participants 55 or older created their own allocations, with 4 in 10 using a single target-date fund and 9% using a managed account program. While older participants with professionally managed allocations had equity exposure between 40% and 80%, those who constructed their own portfolio had a wide dispersion of equity allocations, evenly distributed from 0% to 100%. These participants also had the highest balances.

Figure 87. Distribution of equity exposure by older participants, 2024

Vanguard defined contribution plan participants age 55+



	All other investors	Single target-date fund	Managed account	Single balanced fund
Percentage of population	**49%**	**41%**	**9%**	**1%**
Average balance	$421,659	$106,121	$298,044	$244,676
Median balance	$196,423	$32,314	$155,104	$113,820

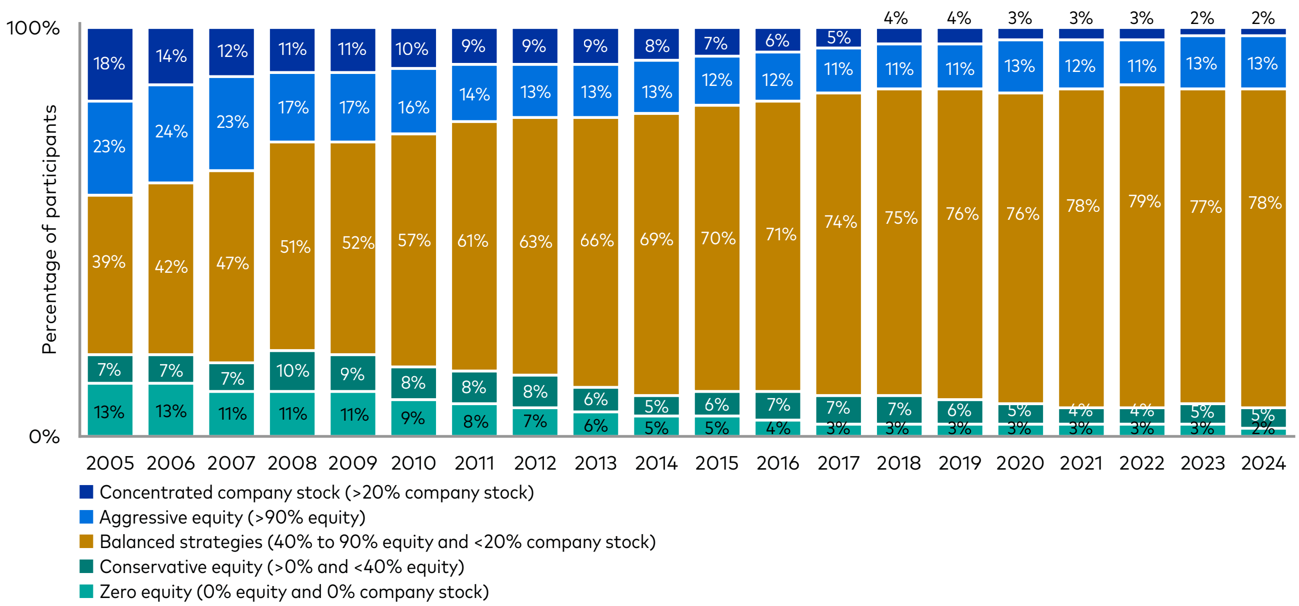
Source: Vanguard 2025.

This rising use of professionally managed allocations is also contributing to a reduction in portfolio construction errors. The fraction of participants holding broadly diversified portfolios rose from 39% in 2005 to 78% in 2024 **(Figure 88)**.

The percentage of participants holding concentrated company stock positions was one-ninth of the percentage in 2005. And there have been reductions in all other extreme portfolios.

Figure 88. Participant portfolio construction

Vanguard defined contribution plan participants



Source: Vanguard 2025.

Figure 89. Advice offered, 2024

Vanguard defined contribution plans

	Number of participants				
	All	**<500**	**500–999**	**1,000–4,999**	**5,000+**
Percentage of plans offering managed account advice	45%	24%	52%	62%	82%
Percentage of participants offered managed account advice	79%	30%	52%	65%	85%
Percentage of participants using managed account advice when offered	9%	9%	8%	8%	10%

Source: Vanguard 2025.

Advice

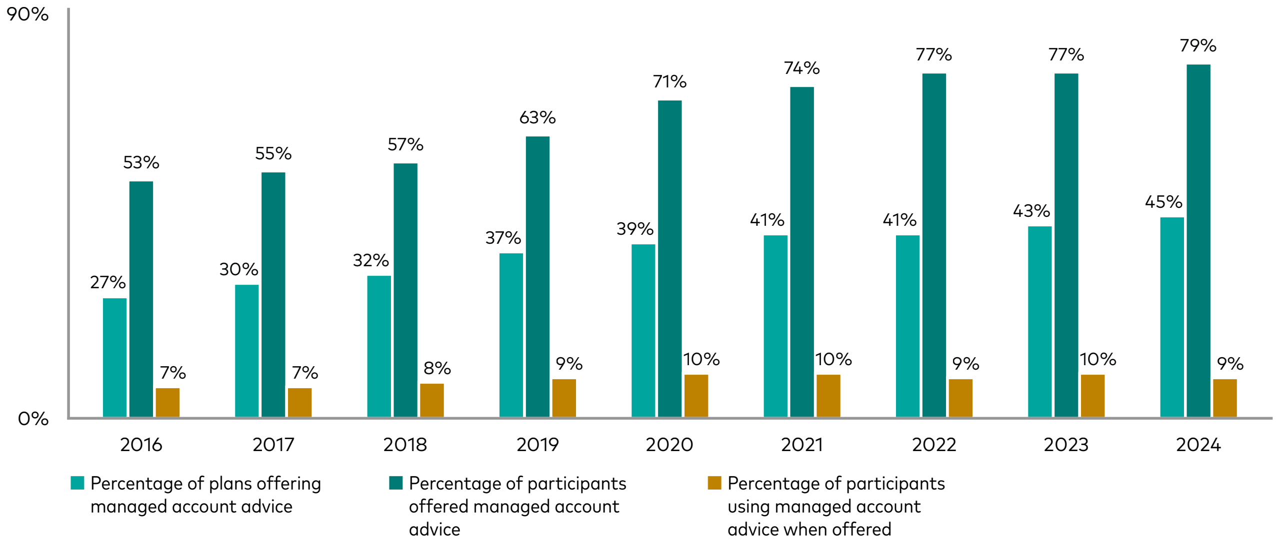
To address participant needs for assistance with investing and planning decisions, plan sponsors are increasingly offering managed account advice services.

Forty-five percent of Vanguard DC plans offered managed account advice in 2024. And with 8 in 10 larger plans offering it **(Figure 89)**, nearly 8 in 10 participants had access to managed account advice.

Balancing competing goals with retirement saving can be complicated. As a result, helping participants create holistic financial well-being has become a priority for plan sponsors. Since 2016, the percentage of plans offering a managed account advice program has grown, and in turn, the percentage of participants offered the service has increased by a similar amount **(Figure 90)**.

Figure 90. Advice offered trend

Vanguard defined contribution plans



Source: Vanguard 2025.

Company stock

Company stock is more likely to be offered as an investment option by a large plan—26% of Vanguard plans with 5,000 or more participants offered it in 2024, compared with 2% of plans with fewer than 500 participants. In some plans that offer company stock, participants can choose whether to invest their own contributions in this option.

Employer contributions—which may be 401(k) matching, profit-sharing, or ESOP contributions—are either directed to company stock by the employer, invested at the participant's discretion, or a combination of the two.

As of 2024, 8% of Vanguard DC plans offered company stock as an investment option. However, because large plans are more likely to offer company stock, 1 in 3 Vanguard DC participants had access to it in their employer's plan.

Among all Vanguard participants in 2024:

- 93% had no company stock investments—either because their employer did not offer it or because they chose not to invest in it.
- 5% had company stock holdings of 1% to 20% of their account balance.
- 2% had concentrated company stock positions exceeding 20% of their account balance.

Among Vanguard plans actively offering company stock, 92% had 20% or less of plan assets invested in the option **(Figure 91)**. The remaining 8% had concentration levels above 20%.

Figure 91. Company stock exposure for plans and participants

Vanguard defined contribution plans actively offering company stock

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Balance of plan in company stock—percentage of plans	1%–20%	82%	81%	81%	82%	86%	88%	88%	89%	93%	92%
	21%–40%	14%	16%	18%	16%	12%	11%	11%	9%	5%	7%
	41%–60%	4%	3%	1%	1%	1%	1%	1%	0%	0%	0%
	61%–80%	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%
	>80%	0%	0%	0%	1%	1%	0%	0%	1%	1%	0%
Balance in company stock—percentage of participants	0%	50%	55%	61%	64%	67%	65%	66%	67%	69%	70%
	1%–20%	22%	21%	20%	17%	18%	23%	22%	21%	19%	19%
	21%–40%	13%	12%	10%	8%	7%	6%	7%	6%	6%	6%
	41%–60%	8%	6%	5%	4%	3%	3%	2%	3%	3%	3%
	61%–80%	2%	2%	1%	2%	1%	1%	1%	1%	1%	1%
	>80%	5%	4%	3%	5%	4%	2%	2%	2%	2%	1%

Source: Vanguard 2025.

In 2024, 7 in 10 Vanguard participants that were offered company stock chose not to invest their contributions—or their employer's contributions—in the option. If they received employer stock contributions, they diversified these assets. At the other extreme, 11% of participants in plans actively offering company stock had more than 20% of their account balance invested in it, and 2% had more than 60% of their account balance in company stock.

The shift away from participant company stock holdings continued in 2024. The percentage of participants in plans with company stock and holding a concentrated position of more than 20% of their account balance in company stock fell from 28% in 2015 to 11% in 2024, and fewer plans are offering company stock.

Despite this shift, why do 1 in 9 participants in plans offering company stock continue to hold a concentrated position in it? One reason is that most participants view company stock as a safer investment than a diversified equity fund. Another is that some plan sponsors decide to make employer contributions in company stock. This implied endorsement often leads participants to invest more of their savings in the option.

The effect is evident in the average company stock allocation for plans making employer contributions in cash compared with those making employer contributions in company stock. In 2024, plans offering company stock as an investment option but making employer contributions in cash had an average of 7% of plan assets invested in company stock **(Figure 92)**. Meanwhile, plans offering company stock as an investment option and making employer contributions in the stock had an average of 18% of plan assets in company stock.

Figure 92. Impact of company stock employer contributions on asset allocation, 2024

Vanguard defined contribution plans

		All Vanguard 401(k) plans with an employer contribution		
	Vanguard defined contribution plans	Plans making employer contributions in cash	Plans offering company stock making employer contributions in cash	Plans offering company stock making an employer contribution in company stock
Percentage of plans	—	**94%**	**5%**	**1%**
Brokerage	1%	1%	<0.5%	1%
Company stock	2%	<0.5%	7%	18%
Diversified equity funds	41%	41%	43%	40%
Target-date funds	42%	43%	33%	30%
Other balanced funds	3%	4%	5%	<0.5%
Bond funds	6%	6%	6%	5%
Cash	5%	5%	6%	6%

Source: Vanguard 2025.

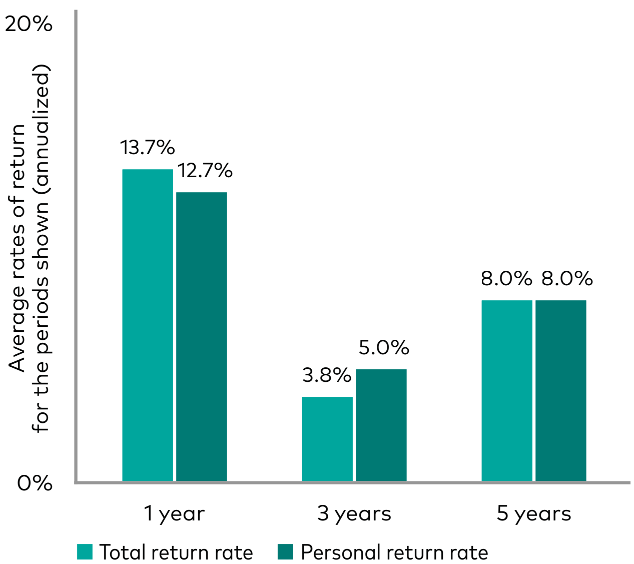
Investment returns

There are two categories of investment returns: total returns and personalized returns. Total returns reflect time-weighted investment performance and allow comparison with benchmark indexes. Personalized returns are dollar-weighted returns, reflecting account investment performance, adjusted for each participant's unique pattern of contributions, exchanges, and withdrawals. They are not directly comparable to time-weighted performance data for market indexes or mutual funds. Both return measures are influenced by market conditions; however, only total returns can be compared with published benchmark indexes.

Participant returns

Because of the positive returns in the equity and bond markets during 2024, average total and personal returns for DC participants were 13.7% and 12.7%, respectively, for the one-year period ended December 31, 2024 **(Figure 93)**. Reflecting positive equity markets, average personal returns for DC participants were 5.0% across the three-year period and 8.0% for the five-year period ended December 31, 2024. Five-year participant total returns also averaged 8.0% per year.

Figure 93. Participant rates of return, December 2024
Vanguard defined contribution plans



Market returns ended December 31, 2024	1 year	3 years	5 years
CRSP US Total Market Index	23.8%	7.9%	13.8%
Spliced Bloomberg USAgg Flt AdjIx	1.3%	–2.4%	–0.3%
FTSE Global All Cap ex US Index	5.5%	0.8%	4.4%

Source: Vanguard 2025.

Past performance is not a guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Distribution of returns

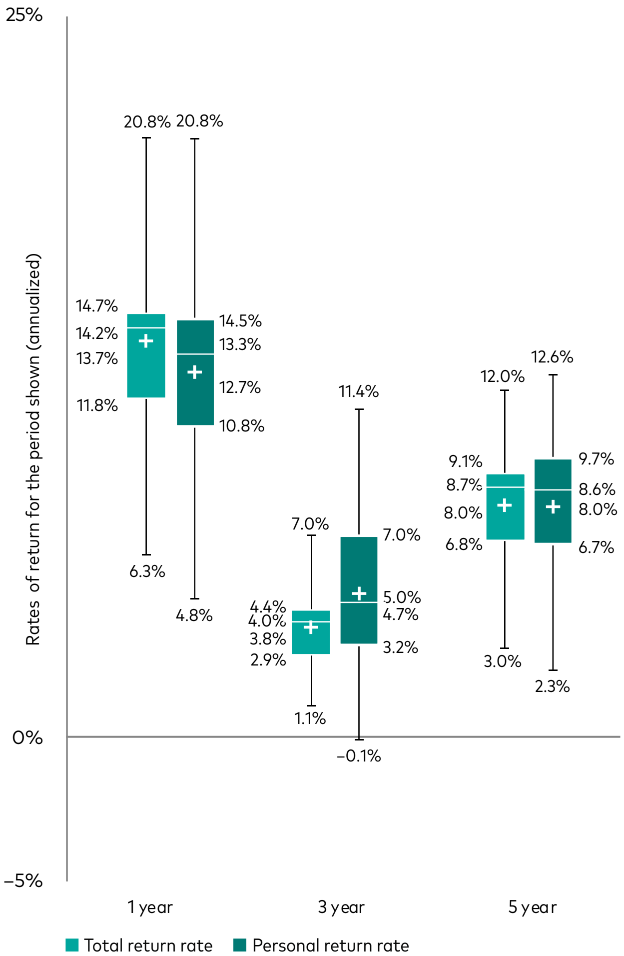
As of December 2024, five-year personalized annual returns were positive for nearly all Vanguard DC plan participants. There was a wide variation in those returns **(Figure 94)**. Participants in the 5th percentile had five-year personalized returns of 3.0% per year in 2024. At the other extreme, participants above the 95th percentile had five-year personalized returns greater than 12.0% per year. The variation in returns is largely due to the variation in participant asset allocations and their individual account holdings.

Participants with managed allocations—notably target-date funds and managed account advisory services—had less dispersion in outcomes. Total five-year returns for single target-date investors ranged from 4.8% for the 5th percentile to 9.1% for the 95th percentile, a difference of 4.3 percentage points **(Figure 95)**. For managed account participants, the 5th-to-95th percentile differences were 4.9 percentage points. The managed account is a customized portfolio approach, and thus results are, accordingly, more dispersed than with target-date funds.

By comparison, among all other participants, realized returns for those making their own choices ranged from 2.2% per year for the 5th percentile to 13.2% for the 95th percentile, a difference of 11 percentage points.

Figure 94. Variation in participant total and personal return rates, 2024

Vanguard defined contribution plans



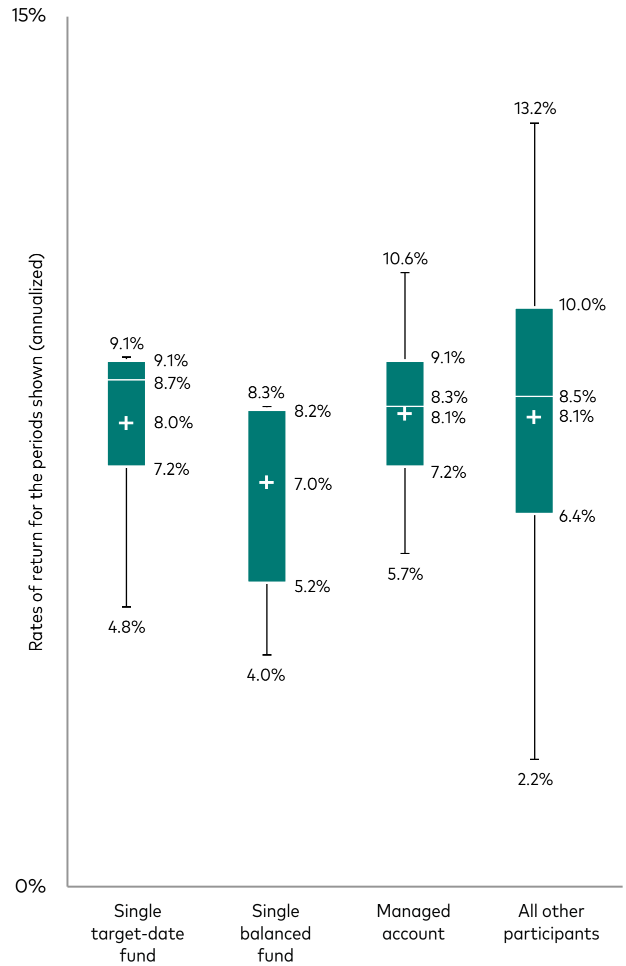
Note: Based on 4.0 million observations for 1 year; 2.9 million for 3 year; and 2.3 million for 5 year.

Source: Vanguard 2025.

Past performance is not a guarantee of future returns.

Figure 95. Distribution of five-year total returns by strategy, 2024

Vanguard defined contribution plans



Note: Based on 980,000 observations for single target-date fund investors; 16,000 for balanced fund investors; 86,000 for managed account investors; and 1.2 million for all other participants.

Source: Vanguard 2025.

How to read a box and whisker chart:

This box and whisker chart shows the range of outcomes. Plot values represent the 95th, 75th, 50th, 25th, and 5th percentile values. The average value is represented by a white + and the median value by a white line. An example of how to interpret the data in Figure 94 is as follows: For the five-year period, 5% of participants had total return rates (TRR) greater than 12.0%; 25% had TRRs greater than 9.1%; half had TRRs greater than 8.7%; 75% had TRRs greater than 6.8%; 95% had TRRs greater than 3.0%. The average five-year TRR was 8.0%.

Dispersion of outcomes

The outcomes for the different types of participants also were apparent when examining both return and risk outcomes in scatterplots. For ease of presentation, we created a random sample of 1,000 participants for each group of investors.

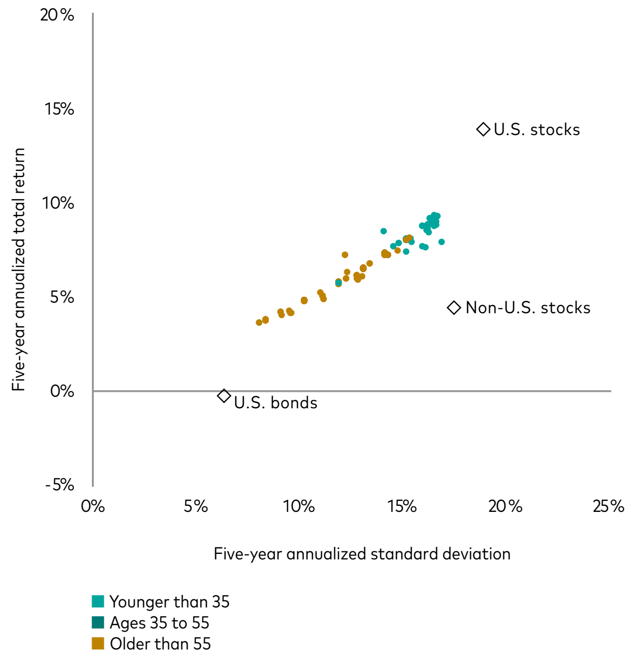
During the five-year period ended December 31, 2024, outcomes for single target-date participants were distributed among major market indexes **(Figure 96, Panel A)**, with an upward slope reflecting a positive equity risk premium. This is consistent with the fact that most of the target-date portfolios in our sample are a specific combination of indexed U.S. equities, international equities, U.S. bonds, and international bonds. In the target-date scatterplot, younger participants (represented by bright turquoise dots and in long-dated portfolios) are to the right of the chart; older participants (represented by dark yellow dots and in near-dated portfolios) are to the left. The figure includes about 1,000 observations. There appear to be far fewer because, while there are many observations in our sample, they are all invested in a limited set of target-date portfolios, meaning the range of portfolio outcomes is also limited. For example, if a plan offered 16 target-date options, then 1,000 participants invested solely in a single target-date fund would have 16 outcomes, not 1,000.

The results for single balanced fund investors reflect the fact that most balanced funds have similar equity allocations, typically around 35% to 65% of assets **(Figure 96, Panel B)**. Managed account investors were more dispersed, reflecting the customized nature of managed account advice **(Figure 96, Panel C)**. The greatest dispersion of risk/return outcomes was among participants making their own investment choices **(Figure 96, Panel D)**. Over time, because of the growing use of professionally managed allocations in DC plans, this population is expected to decline.

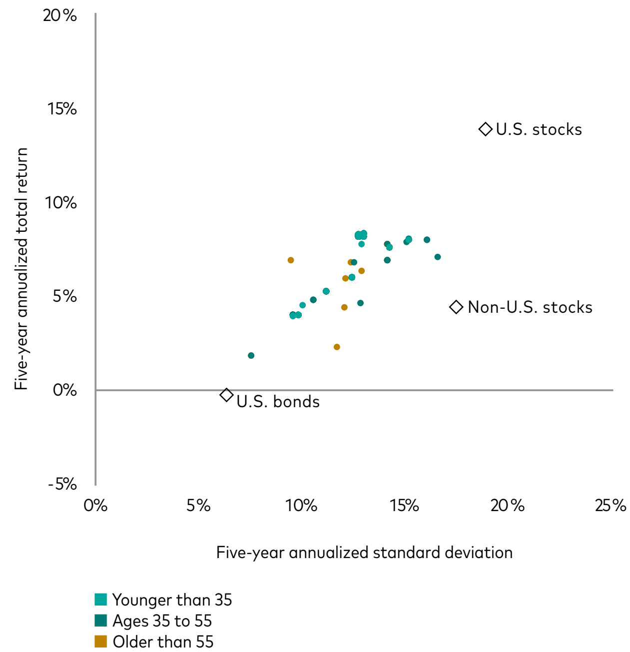
Figure 96. Risk and return characteristics, 2020–2024

Defined contribution plan participants for the five-year period ended December 31, 2024

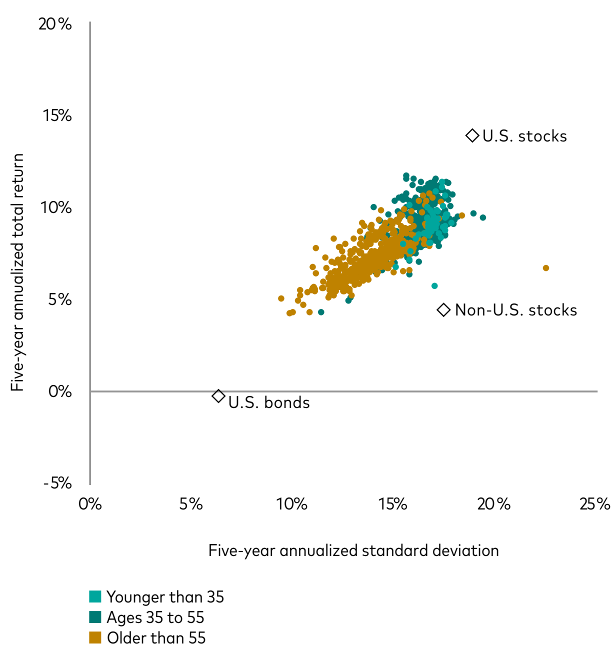
A. Single target-date participants



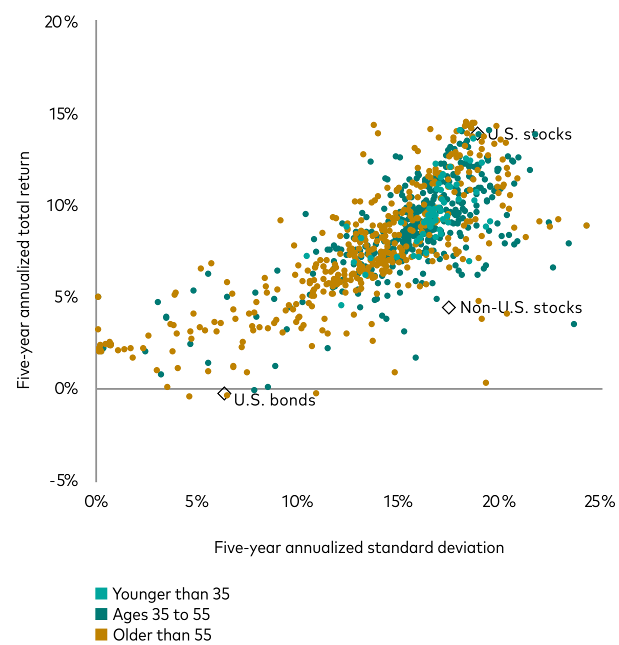
B. Single balanced fund participants



C. Managed account participants



D. All other participants



Note: Includes 1,000 random samples of participant accounts drawn from respective samples. Excludes 0.5% top and 0.5% bottom outliers for both risk and return, for a net sample of 980 observations.

Source: Vanguard 2025.

Past performance is no guarantee of future returns.

Trading activity

Participant trading or exchange activity is the movement of existing account assets from one plan investment option to another. This transaction is different from a contribution allocation decision, in which participants decide how future plan contributions should be invested. Exchange activity is a proxy for a participant's holding period for investments, as well as a measure of the participant's tolerance to short-term market volatility.

Exchange provisions

Daily trading is nearly universal for Vanguard DC plans, with almost all plan sponsors allowing it. While assets can be traded daily, Vanguard and other investment companies serving DC plans typically have "round-trip" restrictions designed to thwart the minority of individual participants looking to engage in active market-timing or day-trading.

Volume of exchanges

In 2024, only 12% of participants made at least one portfolio trade or exchange during the year, down from 20% in 2004 **(Figure 97)**.

It is important to note that nearly all participants using a managed account had exchanges. In a managed account, the advisor oversees multiple fund holdings in a typical participant's account. The trading activity reflects the advisor rebalancing the participant's portfolio (or, with those initially signing up for the service, portfolio changes needed to arrive at the target portfolio strategy).

When participants with a managed account were excluded, only 5% of participants initiated an exchange, a decrease of 5 percentage points from 2020, when trading activity increased because of market volatility related to COVID-19. Trading activity in 2024 remained at the lowest level in nearly two decades.

Another measure of trading is the volume of dollars traded. We measure dollar volume movements as a fraction of total recordkeeping assets to scale them to growth in assets and growth in the underlying recordkeeping business. In effect, the fraction of assets traded is a measure of portfolio turnover.

In 2024, traders exchanged the dollar equivalent of 9.2% of average DC recordkeeping assets at Vanguard. On a net basis, 5.8% of assets were shifted from equities to fixed income.

Since 2015, dollar-trading levels have generally remained stable, except for periods of high market volatility **(Figure 98)**. The most notable spike in dollars traded occurred in spring 2020 at the onset of the COVID-19 pandemic.

Figure 97. Participant trading summary

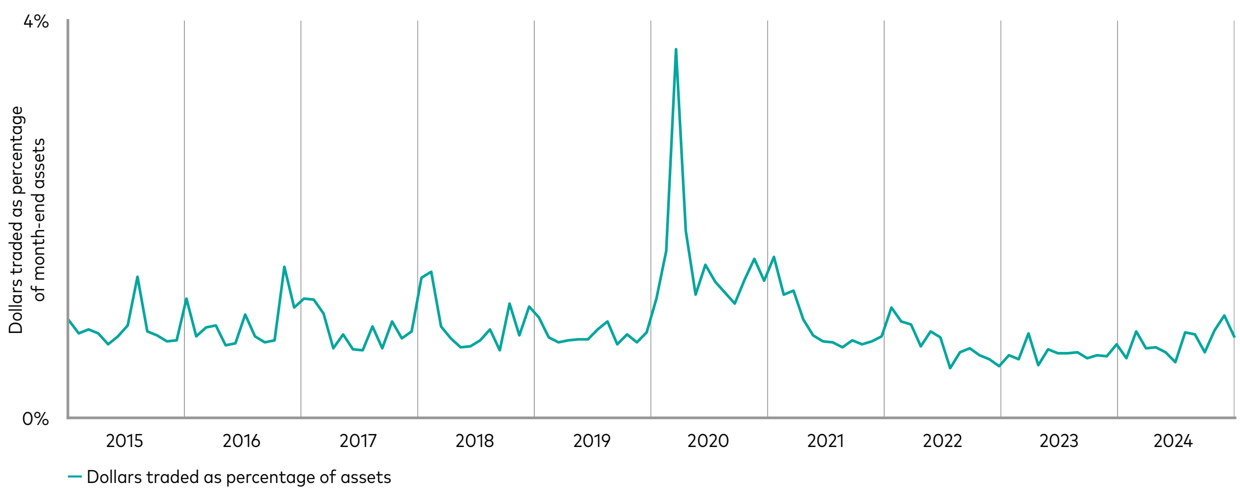
Vanguard defined contribution plans

	Percentage of participants		Percentage of average recordkeeping assets		Dollar flows (in billions)		S&P 500 Index volatility			
							Percentage of days			
	Percentage trading including managed account investors	Percentage with participant-directed exchanges	Percentage traded	Percentage moved to equities (fixed income)	Dollars traded	Dollars moved to equities (fixed income)	Up 3% or more	Down 3% or more	Up 1% or more	Down 1% or more
2024	12%	5%	9.2%	–5.8%	$55.8	–$3.3	0.0%	0.0%	12%	8%
2023	11%	5%	7.9%	–0.2%	$46.8	–$1.4	0.0%	0.0%	14%	11%
2022	12%	6%	9.1%	–0.9%	$53.0	–$5.0	1.6%	3.2%	23%	25%
2021	15%	8%	11.2%	–0.3%	$72.0	–$2.2	0.0%	0.0%	13%	8%
2020	16%	10%	19.3%	–3.0%	$102.4	–$16.2	4.8%	6.3%	25%	18%
2019	12%	7%	10.0%	–1.3%	$50.7	–$7.0	0.4%	0.0%	9%	6%
2018	12%	8%	11.6%	–1.1%	$56.3	–$5.6	0.4%	2.0%	13%	13%
2017	12%	8%	10.6%	–0.3%	$48.6	–$1.5	0.0%	0.0%	2%	2%
2016	12%	8%	11.4%	–1.5%	$44.7	–$6.0	0.4%	0.4%	10%	9%
2015	13%	9%	10.7%	–0.8%	$40.9	–$3.0	0.4%	0.8%	17%	12%
2014	14%	10%	11.6%	–0.6%	$41.8	–$2.3	0.0%	0.0%	8%	8%
2013	13%	10%	14.0%	0.2%	$44.8	$0.5	0.0%	0.0%	9%	7%
2012	12%	9%	12.6%	–1.7%	$36.2	–$4.9	0.0%	0.0%	12%	8%
2011	11%	10%	14.8%	–2.5%	$40.6	–$6.9	2.4%	2.4%	19%	18%
2010	12%	10%	13.4%	–1.1%	$32.5	–$2.8	1.2%	2.0%	15%	14%
2009	13%	11%	14.1%	–0.6%	$29.0	–$1.2	4.4%	4.4%	25%	21%
2008	16%	14%	16.6%	–3.9%	$39.7	–$9.3	9.1%	7.5%	24%	29%
2007	15%	14%	14.7%	–1.5%	$36.2	–$3.7	0.4%	0.0%	12%	13%
2006	14%	13%	12.7%	–0.6%	$27.0	–$1.3	0.0%	0.0%	6%	5%
2005	19%	18%	13.0%	–0.7%	$23.6	–$1.3	0.0%	0.0%	6%	6%
2004	20%	20%	14.6%	–0.2%	$22.5	–$0.3	0.0%	0.0%	8%	8%

Source: Vanguard 2025.

Figure 98. Trading activity, January 2015–December 2024

Vanguard defined contribution plan participants



Source: Vanguard 2025.

Direction of money movement

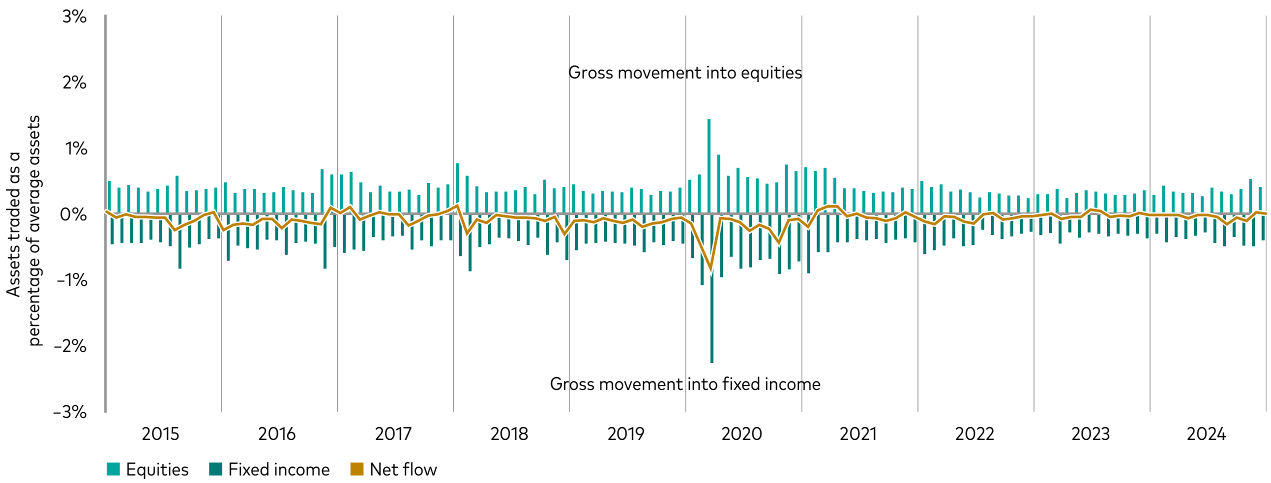
Summary statistics may sometimes portend that all participants trade in one direction. However, in any given month, participants who trade are moving meaningful dollar amounts both in and out of equities **(Figure 99)**. Even in volatile markets, as some traders shift their portfolios toward fixed income assets, others shift toward equities.

During the past decade, the net movement of money among participants trading in their accounts has been generally toward fixed income investments. Nonetheless, even at the height of market volatility, there were significant gross flows toward equities among some participants. The growing reliance on single-fund investment programs, such as target-date funds, has likely contributed to lower trading levels by participants.

Figure 99. Direction of money movement, January 2015–December 2024

Vanguard defined contribution plan participants

Money movement as a percentage of average assets



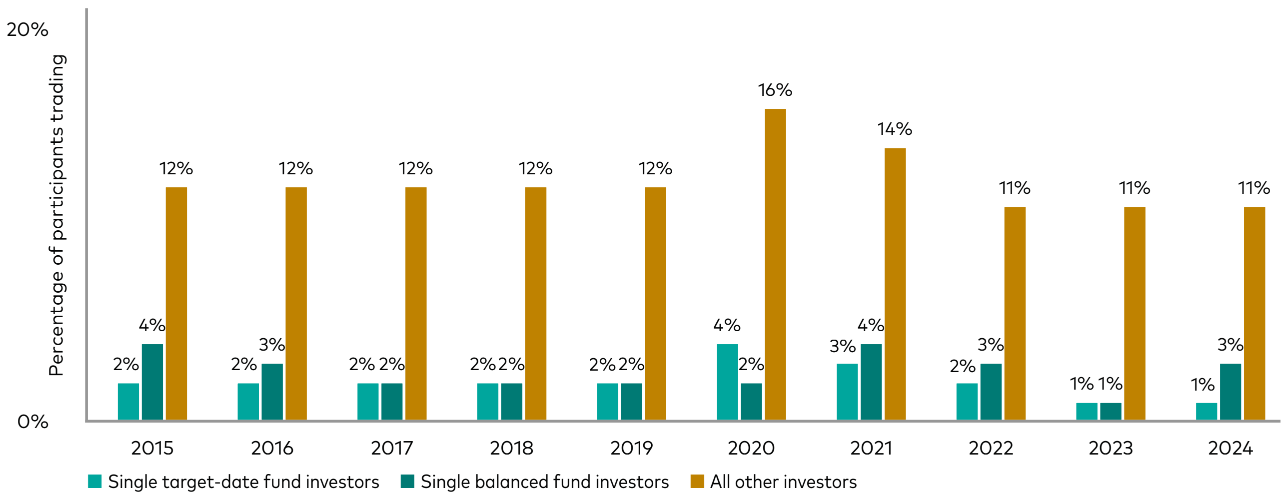
Source: Vanguard 2025.

Participants who are pure target-date fund investors not only benefit from continuous rebalancing but are also far less likely to trade compared with all other investors. In 2024, only 1% of all pure target-date fund investors made an exchange, a rate significantly lower than that of all other investors **(Figure 100)**.

Women traded less frequently than men **(Figure 101)**. Participants holding only target-date funds traded very infrequently, and women were more likely than men to hold a single target-date fund.

Figure 100. Participant trading by investor type

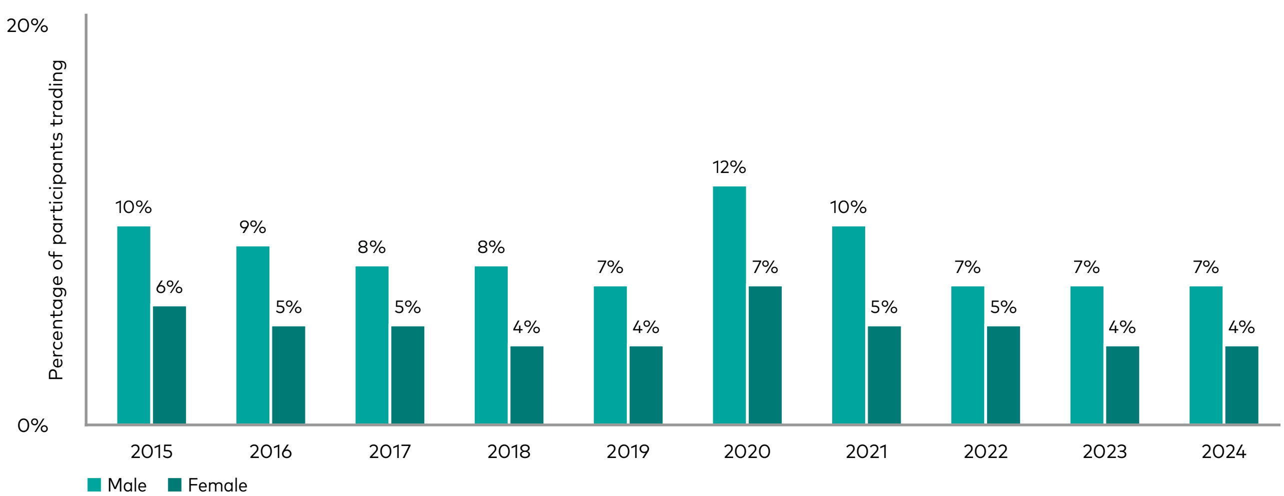
Vanguard defined contribution plan participants



Source: Vanguard 2025.

Figure 101. Participant trading by gender

Vanguard defined contribution plan participants



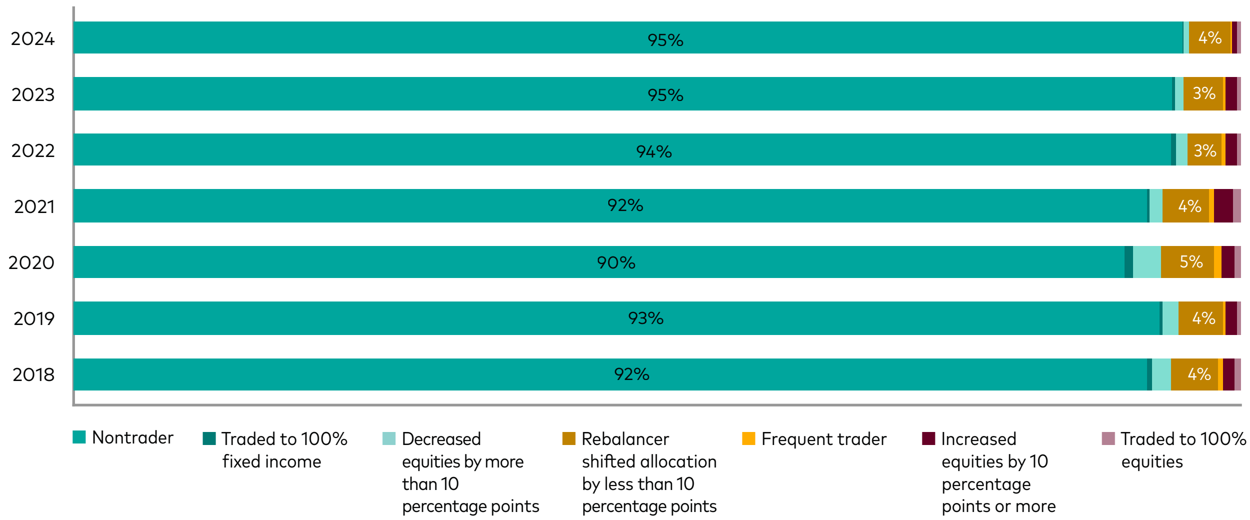
Source: Vanguard 2025.

Types of trading activity

The kinds of exchanges varied among participants who traded in their accounts in 2024. Ninety-five percent of nonmanaged account participants did not make an exchange, but of those who did, the most common action was rebalancing of their account **(Figure 102)**.

Figure 102. Participant trading decisions

Vanguard defined contribution plan participants (nonadvised)



Source: Vanguard 2025.

Section 3: Accessing plan assets

Participants can access their plan assets either by taking a loan or a withdrawal while they are working or through a withdrawal or a rollover when they change jobs or retire.

Plan loans

Plan loans allow DC plan participants to access their plan savings before retirement without incurring income taxes or tax penalties. If permitted by the plan, participants can borrow up to 50% of their balance (up to a maximum of $50,000) from their DC plan account. Loans are more common in plans accepting employee contributions and less common in employer-funded DC plans, such as money purchase or profit-sharing plans.

Offering loans appears to beneficially affect retirement savings, raising contribution rates above what they would otherwise be. Yet loans come with risks. Cash that has been borrowed earns fixed income rather than equity market returns. And participants who leave their employer usually must repay any loan balance immediately—or risk paying taxes as well as a penalty and incurring a reduction in retirement savings by the amount of the loan outstanding.

Loan availability

Loans are widely offered by employee-contributory DC plans. In 2024, 80% of Vanguard DC plans permitted participants to borrow from their plan, and 91% of active participants had access to a loan option **(Figure 103)**. Loan availability depends on plan size. Large plans tend to offer loans; small plans often do not. Loans are expensive to administer, and loan origination and maintenance fees are increasing. With loan fees, sponsors can allocate costs directly to those participants incurring loan-related expenses. Most plans allow participants to have only one loan outstanding. In 2024, 52% of Vanguard DC plans offering loans permitted one loan at a time. Forty percent of plans allowed two loans, and 8% of plans allowed three or more.

Figure 103. Plan loans, 2024

Vanguard defined contribution plans

Percentage of plans offering loans	80%
Percentage of participants in plans offering loans	91%
Plans offering loans *(number of loans permitted)*	
1 loan	52%
2 loans	40%
3 or more loans	8%
Plans imposing a loan waiting period	
Waiting period after a loan is paid off before a new loan may be issued	3%
Waiting period after a loan is issued before another loan is permitted	2%
Interest rate	
Prime	13%
Prime plus 1%	73%
Prime plus 2%	11%
Prime plus other rates	3%
Plans permitting terminated participants to continue loan repayment	44%

Source: Vanguard 2025.

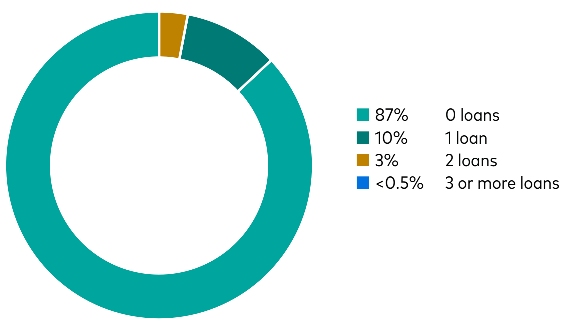
Some plan sponsors impose loan-issuance waiting periods to discourage repetitive loans. In 2024, 3% of plans required a waiting period—most commonly one month—after a loan was paid off before a new loan could be taken by the participant. Two percent of plans imposed a waiting period—most commonly one year—after loan issuance before another loan could be taken. Finally, 44% of plans permitted participants terminating with an outstanding loan to continue repayment.

Loan use by participant demographics

Thirteen percent of participants had a loan outstanding at year-end 2024 **(Figure 104)**.[2] On average, the outstanding loan account balance was 8% of the participant's account balance, excluding the loan, and the average participant had borrowed about $11,067 **(Figure 105)**. Outstanding loans are typically excluded from measures of plan and participant assets because these assets have, in effect, been withdrawn from the plan and are not currently available as a retirement resource.

Figure 104. Participant loan use, 2024

Vanguard defined contribution plans offering loans



Source: Vanguard 2025.

Loans are sometimes criticized as a form of revolving credit for younger, lower-income workers. While that may be partly true, loan use was highest among participants in their prime working years in 2024, with 19% of workers ages 45 to 54 having loans. Men and women used loans at similar rates.

Income appears to have a greater influence than age on loan use. In 2024, about 1 in 4 participants with a household income between $50,000 and $99,999 had a loan, while 13% of participants with an income of more than $150,000 had one. This difference reflects liquidity constraints among those with low wealth and income—that is, higher-income households have less of a need to borrow.

Participants with an account balance below $10,000 were less likely to have a loan, yet they borrowed the largest percentage of their account balance. Eight percent of this group had a loan, but the loan accounted for 36% of their account balance, on average.

In 2024, participants with no loans outstanding had balances that were 16% higher than those with loans. Older, longer-tenured, higher-income participants with loans had saved less for retirement than participants without loans who shared those demographics. However, younger, newly hired, lower-income, lower-balance participants with loans had saved more for retirement than participants without loans in the same demographics. These differences in part reflect the interplay of demographic differences in terms of age, income, and tenure between borrowers and nonborrowers.

Thirteen percent of participants who earned between $15,000 and $29,999 in 2024 had a loan outstanding. However, earlier in this report, we noted that participation rates were lowest among this group, with 49% of these workers joining their plan. Arguably, participants who earned between $15,000 and $29,999 but had borrowed from their retirement savings (6% of these workers) are better off than those who earned between $15,000 and $29,999 and did not participate in their employer's plan **(Figure 106)**.

Loan use by industry group

Loan use varied significantly by industry sector in 2024 **(Figure 107)**. Participants in the business, professional, and nonprofit group used loans at a lower rate than other participants.

2 Our analysis of the percentage of participants with loans considers all participants with an account balance in plans offering loans. Some of these participants no longer work for the plan sponsor and are not eligible for a new loan. Some participants with loans also no longer work for the plan sponsor but are repaying loans. Loan use would likely be about 6 percentage points higher if based solely on active employees.

Figure 105. Participant loan demographics, 2024

Vanguard defined contribution plans offering loans

		Participants with loans					Participants with no loans
		Percentage of participants with loans	Percentage of account balance in loans	Average loan amount	Average account balance	Total average account balance including loans	Average account balance
All		**13%**	**8%**	**$11,067**	**$122,117**	**$133,184**	**$154,735**
Income	<$15,000	8%	14%	$3,602	$22,767	$26,368	$21,737
	$15,000–$29,999	13%	16%	$3,595	$18,482	$22,077	$20,406
	$30,000–$49,999	21%	15%	$4,903	$28,002	$32,905	$27,163
	$50,000–$74,999	28%	12%	$7,957	$58,602	$66,559	$64,316
	$75,000–$99,999	26%	10%	$11,349	$101,929	$113,278	$112,964
	$100,000–$149,999	21%	8%	$15,049	$169,619	$184,668	$195,702
	$150,000+	13%	6%	$19,764	$319,494	$339,258	$386,867
	Terminated	1%	8%	$11,352	$128,381	$139,733	$159,073
Age	<25	3%	20%	$3,080	$12,479	$15,559	$6,842
	25–34	9%	16%	$7,039	$36,110	$43,149	$44,253
	35–44	15%	11%	$10,901	$84,156	$95,057	$109,611
	45–54	19%	8%	$12,773	$151,890	$164,663	$202,160
	55–64	14%	6%	$12,509	$205,341	$217,851	$288,140
	65+	4%	5%	$10,512	$184,142	$194,654	$309,181
Gender	Female	13%	9%	$10,268	$103,763	$114,030	$132,616
	Male	14%	8%	$11,786	$140,128	$151,914	$180,856
Job tenure (years)	0–1	4%	15%	$5,012	$27,639	$32,651	$14,971
	2–3	12%	17%	$6,098	$29,961	$36,059	$47,211
	4–6	14%	15%	$8,891	$51,935	$60,825	$87,036
	7–9	17%	12%	$11,058	$77,716	$88,773	$125,600
	10+	16%	7%	$14,196	$202,814	$217,009	$317,351
Account balance	<$10,000	8%	36%	$2,864	$5,056	$7,919	$3,026
	$10,000–$24,999	16%	25%	$5,767	$16,857	$22,624	$16,662
	$25,000–$49,999	17%	21%	$9,812	$36,197	$46,009	$36,167
	$50,000–$99,999	16%	16%	$13,684	$71,905	$85,589	$72,254
	$100,000–$149,999	15%	12%	$16,011	$122,843	$138,854	$123,067
	$150,000–$199,999	15%	9%	$17,049	$173,270	$190,319	$173,542
	$200,000–$249,999	14%	7%	$17,789	$223,372	$241,161	$223,853
	$250,000+	10%	3%	$19,122	$530,159	$549,281	$670,617

Source: Vanguard 2025.

Figure 106. Participation and loans, 2024

All employees earning between $15,000 and $29,999

Source: Vanguard 2025.

Figure 107. Participant loans by industry sector, 2024

Vanguard defined contribution plans offering loans

		Participants with loans					Participants with no loans
		Percentage of participants with loans	Percentage of account balance in loan	Average loan amount	Average account balance	Total average account balance including loans	Average account balance
All		**13%**	**8%**	**$11,067**	**$122,117**	**$133,184**	**$154,735**
Industry group	Agriculture, mining, and construction	16%	7%	$14,238	$181,670	$195,909	$241,863
	Transportation, utilities, and communications	16%	9%	$9,868	$98,434	$108,302	$111,923
	Manufacturing	16%	8%	$9,983	$119,092	$129,075	$177,533
	Wholesale and retail trade	15%	10%	$10,033	$93,949	$103,983	$137,185
	Finance, insurance, and real estate	13%	7%	$12,308	$156,098	$168,407	$240,044
	Education and health	13%	10%	$11,333	$106,528	$117,860	$128,350
	Media, entertainment, and leisure	9%	9%	$13,665	$142,951	$156,616	$234,625
	Business, professional, and nonprofit	8%	8%	$11,893	$146,018	$157,911	$183,576

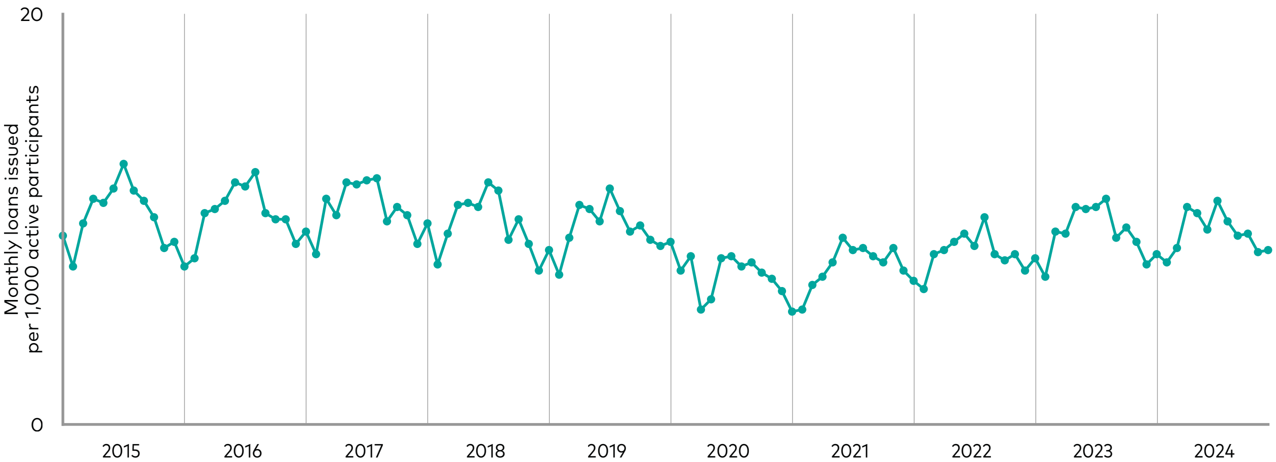
Source: Vanguard 2025.

Trends in new loan issuance

Among Vanguard plans, the fraction of participants taking loans from their DC plans has generally declined since 2015 **(Figure 108)**. In addition, for reasons not well understood, there appears to be a pronounced seasonality to taking loans, with borrowing typically peaking in the summer months. Throughout 2024, overall loan initiations were in line with those in 2023 and remained below the pre-pandemic rate.

Figure 108. Loan origination trend

Vanguard defined contribution active participants in plans offering loans



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Monthly average (per 1,000 participants)	10.2	10.2	10.5	9.8	9.6	7.4	7.6	8.3	9.3	9.3
Annual increase (decrease) in loans issued per 1,000 participants	(7%)	0%	3%	(7%)	(2%)	(22%)	3%	9%	12%	0%

Source: Vanguard 2025.

Plan withdrawals

Plan withdrawals allow participants to access their plan savings before a job change or retirement. Withdrawals are optional plan provisions and availability varies from plan to plan. They can be broadly classified into two categories—hardship and nonhardship withdrawals.

Hardship withdrawals allow participants to access a portion of their savings when they have a demonstrated financial hardship, such as receipt of an eviction or home foreclosure notice, but they may also be used for such purposes as a college education, medical expenses, or the purchase of a primary residence.

Nonhardship withdrawals include both post-age-59½ withdrawals and other withdrawals. Post-age-59½ withdrawals allow participants age 59½ or older to access their savings while they are working and are exempt from the 10% penalty on premature distributions. Some plans may also allow participants to withdraw employer profit-sharing contributions or after-tax contributions or to roll over assets while they are working.

Among all Vanguard DC plans in 2024, 94% allowed hardship withdrawals and 89% allowed plan withdrawals for participants age 59½ or older **(Figure 109)**. Of participants permitted to take each type of withdrawal, 4.8% took a hardship withdrawal and 4.5% took a nonhardship withdrawal **(Figure 110)**.

Figure 109. Plan withdrawals, 2024

Vanguard defined contribution plans

Percentage of plans offering	
Hardship withdrawals	94%
Withdrawals after age 59½	89%

Source: Vanguard 2025.

Figure 110. Participant use of plan withdrawals

Vanguard defined contribution plans

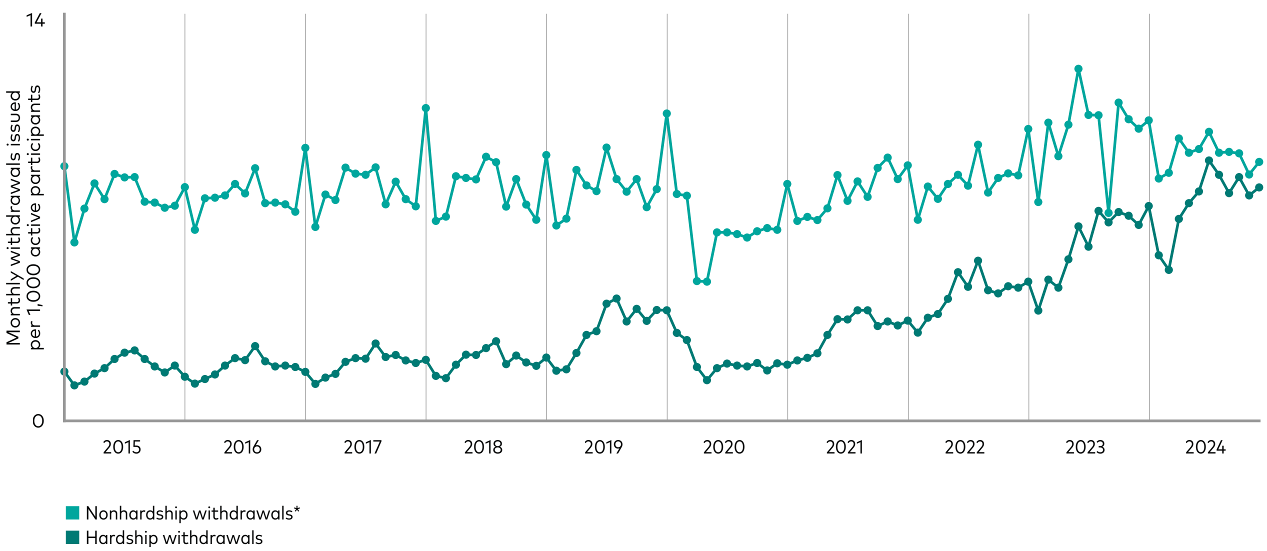
	2020	2021	2022	2023	2024
Hardship withdrawals	1.7%	2.1%	2.8%	3.6%	4.8%
Nonhardship withdrawals	3.4%	4.0%	3.6%	4.0%	4.5%
Coronavirus distributions	5.7%	—	—	—	—

Source: Vanguard 2025.

From 2015 to 2019, the rate of new nonhardship withdrawals, such as post-age-59½ in-service or other withdrawals, was relatively consistent **(Figure 111).** The nonhardship withdrawal rate decreased in 2020, in part because of the availability of coronavirus-related distributions (CRDs), which were provided for in March 2020 when Congress passed the CARES Act. Incorporated within the bill were several provisions, including CRDs, that provided flexibility for retirement savers. Individuals affected by COVID-19 were able to withdraw up to $100,000 from their retirement plan penalty-free until December 30, 2020. In addition, the income tax due on these distributions could be spread over a three-year period, and investors had three years to return the funds to their accounts. As the availability of CRDs expired in 2020, nonhardship withdrawal activity increased in subsequent years but declined slightly in 2024.

Figure 111. In-service withdrawal trend

Vanguard defined contribution active participants in plans offering in-service withdrawals



		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Monthly average per 1,000 active participants	Nonhardship withdrawals	7.9	7.8	8.2	8.3	8.2	6.9	8.0	8.4	10.0	9.4
	Hardship withdrawals	1.9	1.9	2.0	2.1	3.1	2.2	3.0	4.3	6.0	7.6
Annual increase (decrease) per 1,000 active participants	Nonhardship withdrawals	(1%)	(1%)	5%	1%	(1%)	(16%)	16%	5%	20%	(6%)
	Hardship withdrawals	(5%)	0%	5%	5%	48%	(29%)	38%	42%	39%	27%

*Coronavirus-related distributions are excluded from this figure.

Source: Vanguard 2025.

From 2014 to 2018, the new hardship withdrawal rate remained relatively consistent while holding at a low absolute level. But in 2019, hardship withdrawal activity increased by nearly 50%. The Bipartisan Budget Act of 2019 introduced changes to hardship withdrawal provisions. These changes were designed to ease restrictions for participants who needed to access their qualified retirement plan assets because of an immediate financial need.

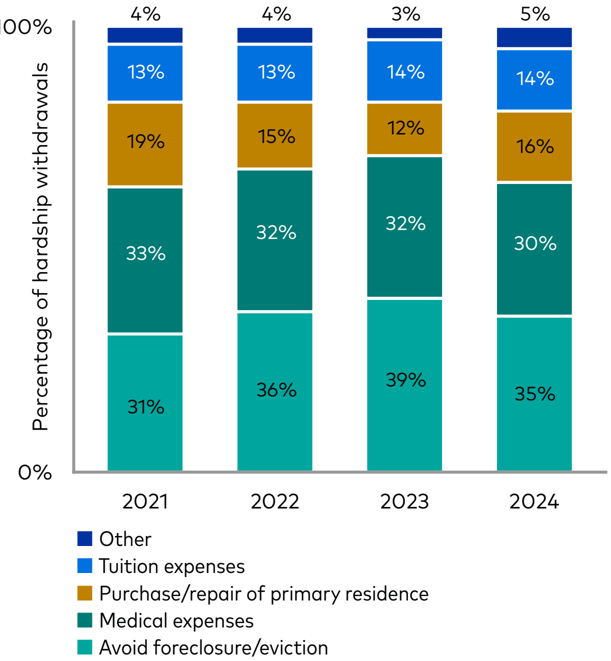
In 2020, the frequency of hardship withdrawals decreased by 16%. We speculate that the favorable treatment associated with CRDs led participants to use that withdrawal option if they were eligible and their plan permitted it. In 2021, overall hardship withdrawal activity reverted to pre-pandemic levels from 2019, and in 2024, hardship withdrawal activity increased to a new high.

Given that it is now easier to request a hardship withdrawal and that automatic enrollment is helping more workers save for retirement, especially lower-income workers, a modest increase is not surprising.

In 2024, 35% of hardship withdrawals were used to avoid a home foreclosure or eviction, which remains the most common reason for taking a hardship withdrawal **(Figure 112)**. The second most common reason was medical expenses, as 3 in 10 hardship withdrawals were initiated for this purpose. Additionally, during the second half of 2024, there was a notable increase in hardship withdrawals used for home repair and FEMA disaster-relief purposes, which may have been attributable to weather-related catastrophes.

Figure 112. Trend in hardship withdrawal reasons

Vanguard defined contribution plans



Source: Vanguard 2025.

Plan distributions and rollovers

When changing jobs or retiring, DC plan participants have the option of preserving their retirement savings (by retaining savings in the plan or rolling it over to an IRA or another DC plan) or taking a cash lump sum (and spending or investing it). If they choose to roll over their savings to an IRA or another qualified retirement plan, participants avoid paying taxes on the accumulated balance. If participants spend the lump-sum distribution or invest it in a taxable account, they incur a possible income tax liability (and a 10% penalty if they are younger than 59½).

Leakage from the retirement system—the spending of plan savings before retirement—is a concern for the future retirement security of participants. In the short run, they incur taxes and possible penalties on any amounts they spend. In the long run, because of the lost opportunity for compounded earnings, participants significantly increase the amount they need to save during the remainder of their working years.

Upon a participant's separation from service, plan sponsors have the option to distribute the former employee's vested account balance without additional consent if that balance is below a statutory limit of $5,000. The optional automatic cash-out increase provision of SECURE 2.0 raised that limit from $5,000 to $7,000, effective for distributions made after December 31, 2023.

Plan distributions between $1,000 and $5,000 in some plans and between $1,000 and $7,000 in other plans are generally rolled over automatically to an IRA unless the participant elects otherwise.

Balances of less than $1,000 may be distributed to the terminated participant. Most plans have adopted these provisions. Two percent of plans allowed participants with a balance of less than $1,000 to remain in the plan in 2024 **(Figure 113)**. In some cases, the sponsor may allow participants to retain a balance of $1,000 or more in the plan—13% of plans permitted these balances to remain in the plan.

Figure 113. Frequency of automatic distributions, 2024

Vanguard defined contribution plans

		Number of participants				
		All	**<500**	**500–999**	**1,000–4,999**	**5,000+**
Percentage of plans	Remain in plan (no automatic distribution)	2%	2%	1%	2%	2%
	Automatic cash-out if balance is <$1,000, remain in plan if balance is higher	12%	12%	8%	13%	20%
	Automatic cash-out if balance is <$1,000, roll over if balance is between $1,000 and $5,000	29%	34%	23%	22%	30%
	Automatic cash-out if balance is <$1,000, roll over if between $1,000 and $7,000	57%	52%	68%	63%	48%
Percentage of participants offered	Remain in plan (no automatic distribution)	2%	2%	1%	2%	1%
	Automatic cash-out if balance is <$1,000, remain in plan if balance is higher	18%	11%	8%	13%	21%
	Automatic cash-out if balance is <$1,000, roll over if balance is between $1,000 and $5,000	26%	28%	22%	21%	27%
	Automatic cash-out if balance is <$1,000, roll over if between $1,000 and $7,000	54%	59%	69%	64%	51%

Note: This analysis excludes approximately 70 403(b) plans and approximately 285,000 participants in those plans. Most 403(b) plan sponsors retain the right to execute these automatic distributions within their plan documents. However, because of the multiprovider environment many 403(b) plans operate within, and the coordination required to process these distributions, most 403(b) plan sponsors do not process these distributions.

Source: Vanguard 2025.

Most sponsors permitted indefinite deferral of savings, meaning that participant balances could remain in the employer plan if they were above the distribution threshold. However, about 2% of sponsors required terminated participants to leave the plan by ages 65 or 70 **(Figure 114)**.

Sixty-eight percent of sponsors allowed participants to establish installment payments, and 43% of plans permitted terminated participants to take partial ad hoc cash distributions in 2024, up from 32% in 2019.[3] Seventy-eight percent of participants were offered the option of taking a partial ad hoc distribution in 2024. If a plan does not offer ad hoc distributions, it requires any terminated participant seeking to use any part of their retirement savings to withdraw or roll over the entire account balance. When it offers an ad hoc distribution feature, a plan can be used directly as a flexible source of income and withdrawals.

Figure 114. Distribution options, 2024

Vanguard defined contribution plans

		Number of participants				
		All	**<500**	**500–999**	**1,000–4,999**	**5,000+**
Percentage of plans	Deferral	100%	100%	100%	100%	100%
	Deferral only to age 65	2%	3%	4%	2%	1%
	Deferral only to age 70	<0.5%	0%	1%	0%	1%
	Installments other than RMDs	68%	60%	70%	71%	88%
	Ad hoc partial distributions	43%	26%	43%	58%	76%
Percentage of participants offered	Deferral	100%	100%	100%	100%	100%
	Deferral only to age 65	1%	3%	4%	2%	<0.5%
	Deferral only to age 70	4%	0%	1%	0%	4%
	Installments other than RMDs	88%	64%	70%	73%	93%
	Ad hoc partial distributions	78%	31%	44%	61%	86%

Source: Vanguard 2025.

Participant and asset flows

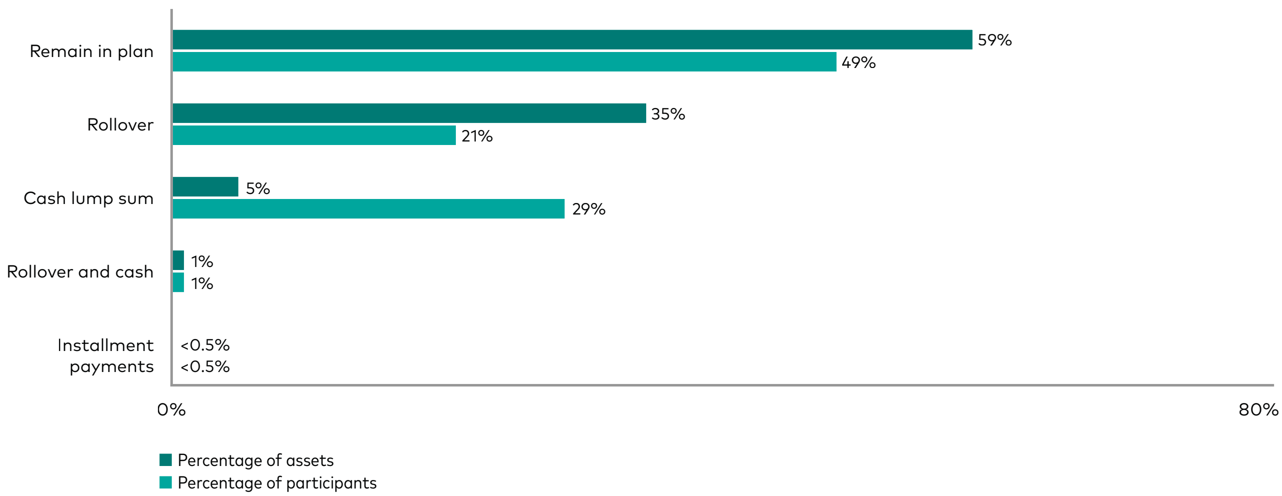
Plan distributions are somewhat common when participants change jobs or retire, and they represent a large portion of total plan and participant assets. In 2024, 12% of participants left their employer and were eligible for a distribution. Their assets totaled 6% of Vanguard recordkeeping assets. Seven in 10 of these participants preserved their assets, either retained in the prior employer's plan, rolled over to an IRA, or rolled over to the new employer's plan **(Figure 115)**.

3 For a comprehensive analysis of distributions and the effect ad hoc distribution features have on participant behavior, see Jeffrey W. Clark and Joseph C. Walsh, ***Retirement Distribution Decisions Among DC Participants.*** Vanguard, February 2023.

Figure 115. Plan distributions, 2024

Vanguard defined contribution plans

Participants with termination dates in 2024



Source: Vanguard 2025.

In 2024, 29% of participants took a cash distribution, but 94% of the assets available for distribution were preserved for retirement.

The percentage of participants choosing to take cash and presumably spending their savings has remained stable over time **(Figure 116)**.

Figure 116. Trends in distribution of plan assets

Vanguard defined contribution plans

Participants with termination dates in the given year

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage of participants choosing	Remain in plan	51%	50%	51%	48%	46%	49%	52%	51%	48%	49%
	Rollover	20%	19%	18%	18%	18%	19%	18%	16%	18%	21%
	Installment payments	<0.5%	<0.5%	<0.5%	<0.5%	1%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%
	Participants preserving assets	71%	69%	69%	66%	65%	68%	70%	67%	66%	70%
	Cash lump sum	28%	30%	30%	33%	34%	31%	29%	32%	33%	29%
	Rollover and cash	1%	1%	1%	1%	1%	1%	1%	<0.5%	<0.5%	<0.5%
Percentage of assets available for distribution	Remain in plan	56%	59%	61%	56%	60%	63%	61%	61%	61%	59%
	Rollover	37%	35%	34%	37%	34%	32%	34%	33%	33%	35%
	Installment payments	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%
	Assets preserved for retirement	93%	94%	95%	93%	94%	95%	95%	94%	94%	94%
	Cash lump sum	5%	5%	4%	6%	5%	4%	4%	5%	5%	5%
	Rollover and cash	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%

Source: Vanguard 2025.

Determinants of distribution behavior

Age has a significant impact on distribution behavior. In 2024, younger participants were more likely than older participants to remain in the plan, while older participants were more likely to roll their assets out of the plan. But most assets available for distribution were preserved for retirement by younger and older participants alike. Only 27% of participants in their 20s chose to cash out their plan assets, in line with those in their 70s **(Figure 117)**.

Figure 117. Plan distribution behavior by age, 2024

Vanguard defined contribution plans

Participants with termination dates in 2024

		20s	30s	40s	50s	60s	70s	Total
Percentage of participants choosing	Remain in plan	52%	50%	48%	47%	42%	29%	49%
	Rollover	21%	17%	18%	23%	34%	32%	21%
	Installment payments	0%	0%	0%	<0.5%	1%	12%	<0.5%
	Participants preserving assets	73%	67%	66%	70%	77%	73%	70%
	Cash lump sum	27%	32%	33%	29%	22%	26%	29%
	Rollover and cash	<0.5%	<0.5%	1%	1%	1%	1%	1%
Percentage of assets available for distribution	Remain in plan	69%	70%	67%	61%	51%	40%	59%
	Rollover	18%	20%	24%	33%	46%	55%	35%
	Installment payments	0%	0%	0%	<0.5%	<0.5%	1%	<0.5%
	Assets preserved for retirement	87%	90%	91%	94%	97%	96%	94%
	Cash lump sum	12%	9%	8%	5%	2%	4%	5%
	Rollover and cash	<0.5%	<0.5%	1%	1%	1%	<0.5%	1%

Source: Vanguard 2025.

In terms of assets, 87% of assets owned by participants in their 20s and 96% of assets owned by participants in their 70s were preserved. Account balances also had a significant impact on distribution behavior. Participants with smaller account balances were less likely to preserve their assets for retirement. Two in 3 participants with balances of less than $1,000 kept their balance in a tax-deferred account **(Figure 118)**. However, once balances reached $100,000, 9 in 10 participants chose to preserve their assets.

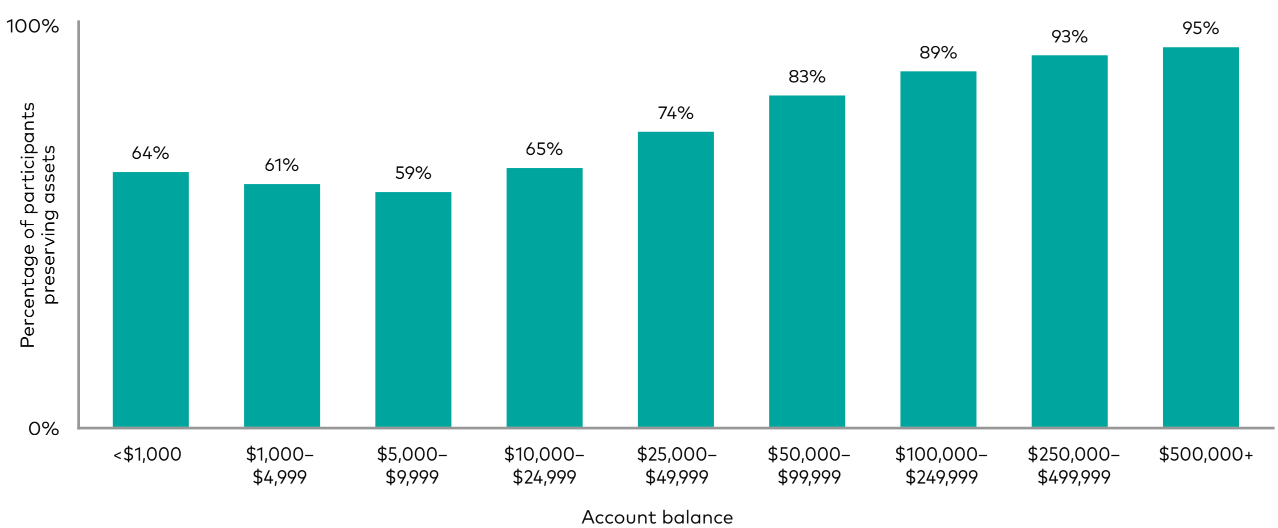
A more nuanced view emerges when you consider both age and account balance. At most asset levels, younger participants were more likely to preserve their assets in 2024 **(Figure 119)**. While participants in their 40s did overwhelmingly preserve their assets for retirement, at some asset levels they are slightly more likely than most other age groups to cash out their DC plan when changing jobs or retiring.

Our analysis thus far reflects the behavior of individuals who terminated employment in a given year, either by changing jobs or retiring. But it is also true that participants who terminated in previous years retain the right to withdraw their plan assets from their prior employer's plan at any time and roll over or spend the money.

Figure 118. Plan distribution behavior by account balance, 2024

Vanguard defined contribution plans

Participants with termination dates in 2024

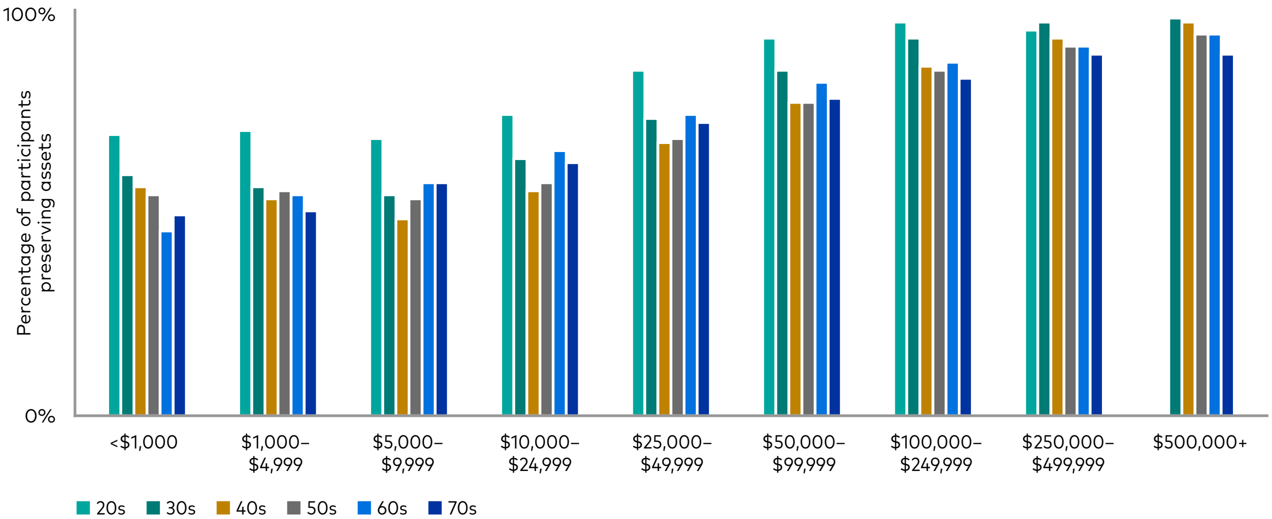


Source: Vanguard 2025.

Figure 119. Plan distribution behavior by age and account balance, 2024

Vanguard defined contribution plans

Participants with termination dates in 2024



Source: Vanguard 2025.

A more optimistic picture of plan distribution behavior emerges if we analyze the total plan assets available for distribution at any given time. During 2024, more than a quarter of all Vanguard qualified plan participants could have taken their plan account as a cash distribution because they had separated from service in the current year or prior years. However, just 17% of participants eligible for a cash distribution took one, while the vast majority (83%) continued to preserve their plan assets for retirement **(Figure 120)**. In terms of assets, 97% of all plan assets available for distribution were preserved—either rolled over to an IRA or other qualified plan or left in the former employer's plan. Only 3% of assets were distributed in cash.

Figure 120. Alternative view of distribution of plan assets

Vanguard defined contribution plans

All terminated participants with access to plan savings in the given year

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage of participants choosing	Remain in plan	69%	67%	68%	65%	63%	67%	67%	66%	66%	62%
	Rollover	13%	12%	12%	12%	13%	13%	12%	11%	12%	17%
	Installment payments	3%	3%	4%	4%	4%	3%	4%	4%	4%	4%
	Participants preserving assets	85%	82%	84%	81%	80%	83%	83%	81%	82%	83%
	Cash lump sum	14%	17%	15%	18%	19%	17%	17%	19%	18%	17%
	Rollover and cash	1%	1%	1%	1%	1%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%
Percentage of assets available for distribution	Remain in plan	77%	78%	80%	76%	78%	82%	81%	80%	80%	78%
	Rollover	19%	18%	17%	19%	17%	15%	16%	16%	16%	18%
	Installment payments	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
	Assets preserved for retirement	97%	97%	98%	96%	96%	98%	98%	97%	97%	97%
	Cash lump sum	2%	2%	1%	3%	3%	2%	2%	3%	3%	3%
	Rollover and cash	1%	1%	1%	1%	1%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%

Source: Vanguard 2025.

Access methods

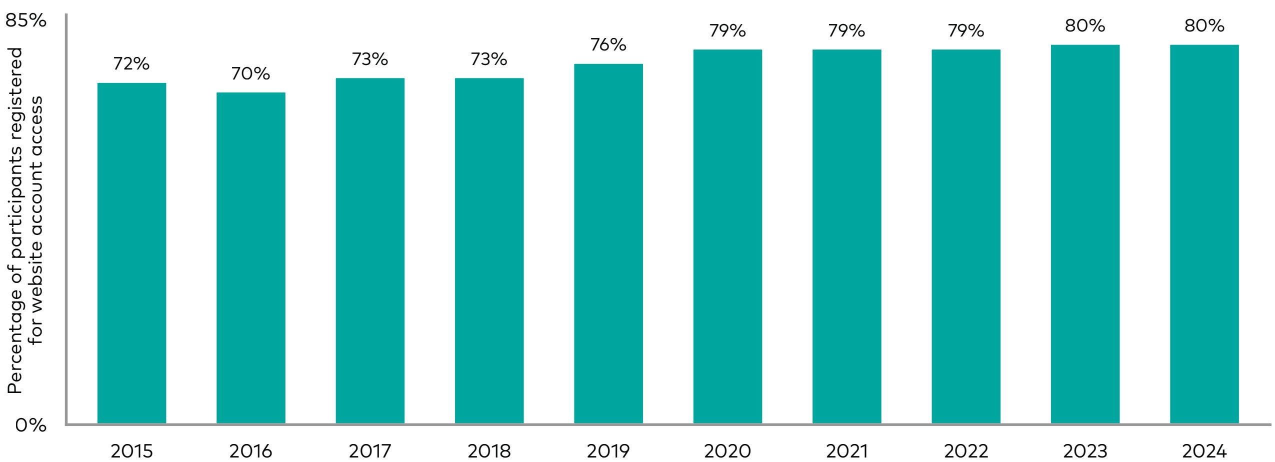
Within Vanguard DC plans, a variety of services have evolved to foster participant control of plan savings and to facilitate savings, investment, and withdrawal decisions—including telephone associates, websites, and mobile applications. Participant access to retirement accounts is quite varied, ranging from those who do not contact their provider at all in a given year to those who do so multiple times a month.

Types of account access

Participants typically access their retirement plan through 1 of 3 channels: toll-free phone calls to telephone associates, a mobile application, or the website. As of 2024, 80% of participants had website access, up from 72% in 2015 **(Figure 121)**. Obtaining account information via the website is the most common form of accessing retirement accounts, as 51% of all participants used the website, a percentage that has remained relatively stable over the past several years **(Figure 122)**. Thirty-four percent of participants now access their retirement account via a mobile application, up from 8% in 2014. And 20% of participants accessed Vanguard via the toll-free phone number, a proportion that has remained consistent over the past 10 years.

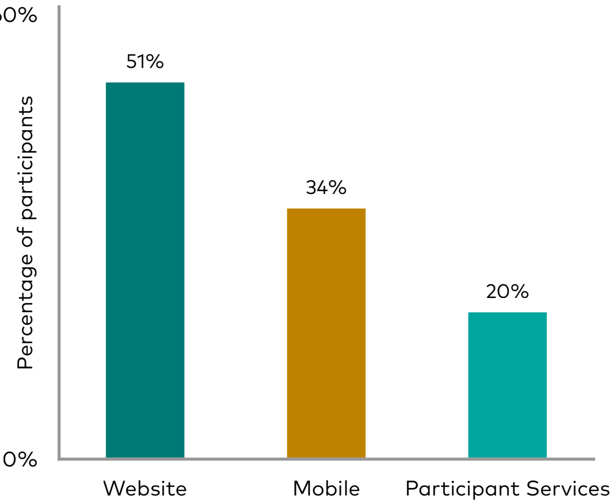
Figure 121. Website access trend

Vanguard defined contribution plans



Source: Vanguard 2025.

Figure 122. Account access methods, 2024
Vanguard defined contribution plans



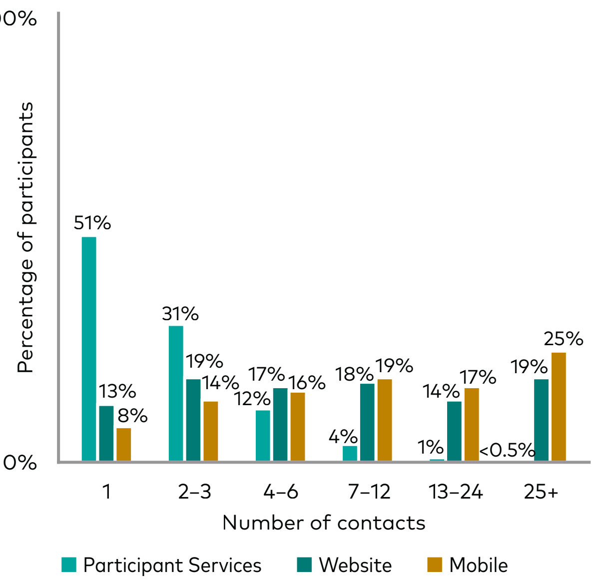
Source: Vanguard 2025.

Frequency of account access

While the website was the most common method of accessing retirement accounts, those that used the mobile application visited more frequently. In 2024, 25% of mobile users accessed their account 25 or more times **(Figure 123)**. Furthermore, 42% of mobile users accessed their account more than once a month, compared with 33% of website visitors. More than half of participants who directly called Vanguard accessed their account information by phone only once, and 82% of participants who called by phone did so only three or fewer times.

Account balances were a strong influence on contact behavior. The larger a participant's balance, the more likely they were to be proactive in obtaining information about their Vanguard plan. Participants with account balances of more than $100,000 contacted Vanguard about 35% more often than those with balances of less than $100,000.

Figure 123. Account access methods, 2024
Vanguard defined contribution plans



Source: Vanguard 2025.

Methodology

The Vanguard data included in this report is drawn from several sources.

Defined contribution clients

This universe consists of more than 1,400 qualified plans and nearly 5 million participants for which Vanguard directly provides recordkeeping services. Unless otherwise noted, all references to "Vanguard" are to this universe, and all data is as of December 31, 2024.

Vanguard participation and deferral rates

Data on participation and deferral rates is drawn from a subset of Vanguard recordkeeping clients for whom we perform nondiscrimination testing. Selected plan design features are also derived from this data. For the 2024 analysis, the subset is composed of plans that complete their testing by March and represents approximately one-third of the clients for whom we perform testing. Plans that complete their testing by March generally have lower participation rates and generally include plans with concerns related to passing testing. When all plans have completed their testing by the end of 2024, the participation rates typically improve. Plan design features derived from this data also will most likely improve.

Based on the trends experienced over previous years, we have estimated participation and deferral rates for 2024. The estimations use a combination of linear extrapolation and subjective estimation. The same approach is applied to plan design features derived from this data. We will continue to restate these results in the following year based on the final compliance testing results.

The 2023 restated analysis includes approximately 900 plans and 2.8 million participants and eligible nonparticipants. Almost all of these plans are 401(k) or paired 401(k)/profit-sharing plans. Income data used in participation and deferral rate analyses also comes from this subset of plans.

Industry benchmark data supplemental to *How America Saves 2025*

Industry benchmarking based on the data behind *How America Saves 2025* is available for the following industries on **institutional.vanguard.com**:

- Ambulatory health care services
- Architecture and engineering
- Construction
- Finance
- Information
- Insurance
- Legal services
- Manufacturing
- Mining, quarrying, and oil and gas extraction
- Professional, scientific, and technical services
- Retail trade
- Technology
- Transportation and warehousing
- Unions
- Utilities
- Wholesale trade

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