Retirement Insights

Guide to Retirement

2023

J.P.Morgan
ASSET MANAGEMENT

Page reference

Retirement Landscape
3. The retirement equation
4. Life expectancy probabilities
5. Life expectancy probabilities for same sex couples
6. Changes in lifestyle
7. Older Americans in the workforce
8. Managing expectations of ability to work
9. Access to employer-sponsored retirement benefits
10. SECURE 2.0: broadening access to more people and increasing savings
11. SECURE 2.0: new tax implications
12. Social Security timing trade-offs
13. Claiming Social Security: decision tree
14. Maximizing Social Security benefits: maximum earner
15. Social Security benefit claiming considerations

Saving
16. Retirement savings checkpoints: household income ≤$90k
17. Retirement savings checkpoints: household income ≥$100k
18. Income replacement needs vary by household income
19. Annual savings needed if starting today: household income ≤$90k
20. Annual savings needed if starting today: household income ≥$100k
21. Historical annual savings rate
22. Benefit of saving and investing early
23. Evaluate a Roth at different life stages
24. Maximizing an HSA for health care expenses
25. Diversified sources of retirement funding
26. "The Prosperous Retirement": theoretical spending profile

Spending
27. Changes in spending: all households with $250k-$750k investable wealth
28. Changes in spending: partially and fully retired households with $250k-$750k investable wealth
29. Changes in spending: all households with $1m-$3m investable wealth
30. Changes in spending: partially and fully retired households with $1m-$3m investable wealth
31. Spending and inflation
32. The 4% rule: projected outcomes vs. historical experience
33. Dollar cost ravaging: timing risk of withdrawals
34. Mitigating dollar cost ravaging: dynamic spending
35. Health care costs for retirees before age 65
36. Three steps for Medicare coverage
37. 65 and working: should I sign up for Medicare?
38. Rising health care costs in retirement
39. 2023 monthly Medicare surcharges
40. Disability incidence increases with age
41. Long-term care planning
42. Long-term care planning options

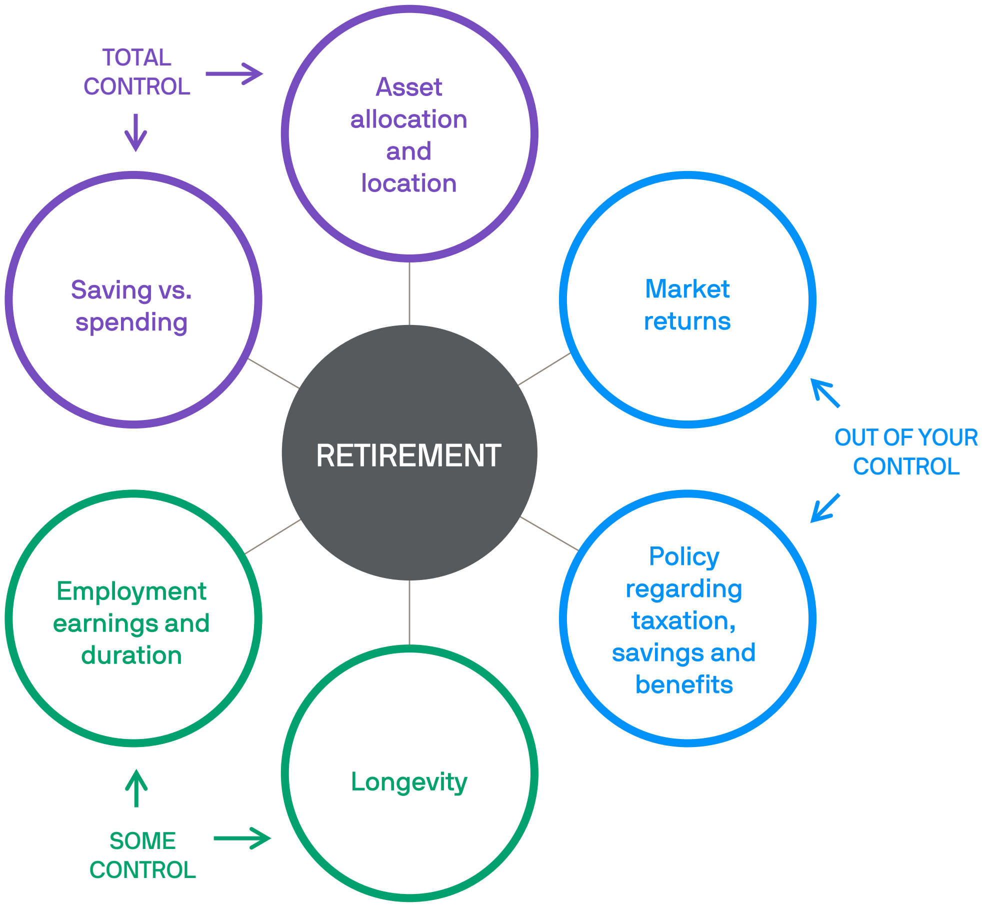
Investing
43. Goals-based wealth management
44. Structuring a portfolio to match investor goals in retirement
45. Align your portfolio with your goals
46. Impact of being out of the market

Defined Contribution
47. Tax implications for retirement savings by account type
48. Prioritizing long-term retirement savings
49. Annual emergency reserves
50. The benefits of auto-escalation
51. The toxic effect of loans and withdrawals

Disclosures
52. 2023 disclosures

J.P.Morgan
ASSET MANAGEMENT

The retirement equation



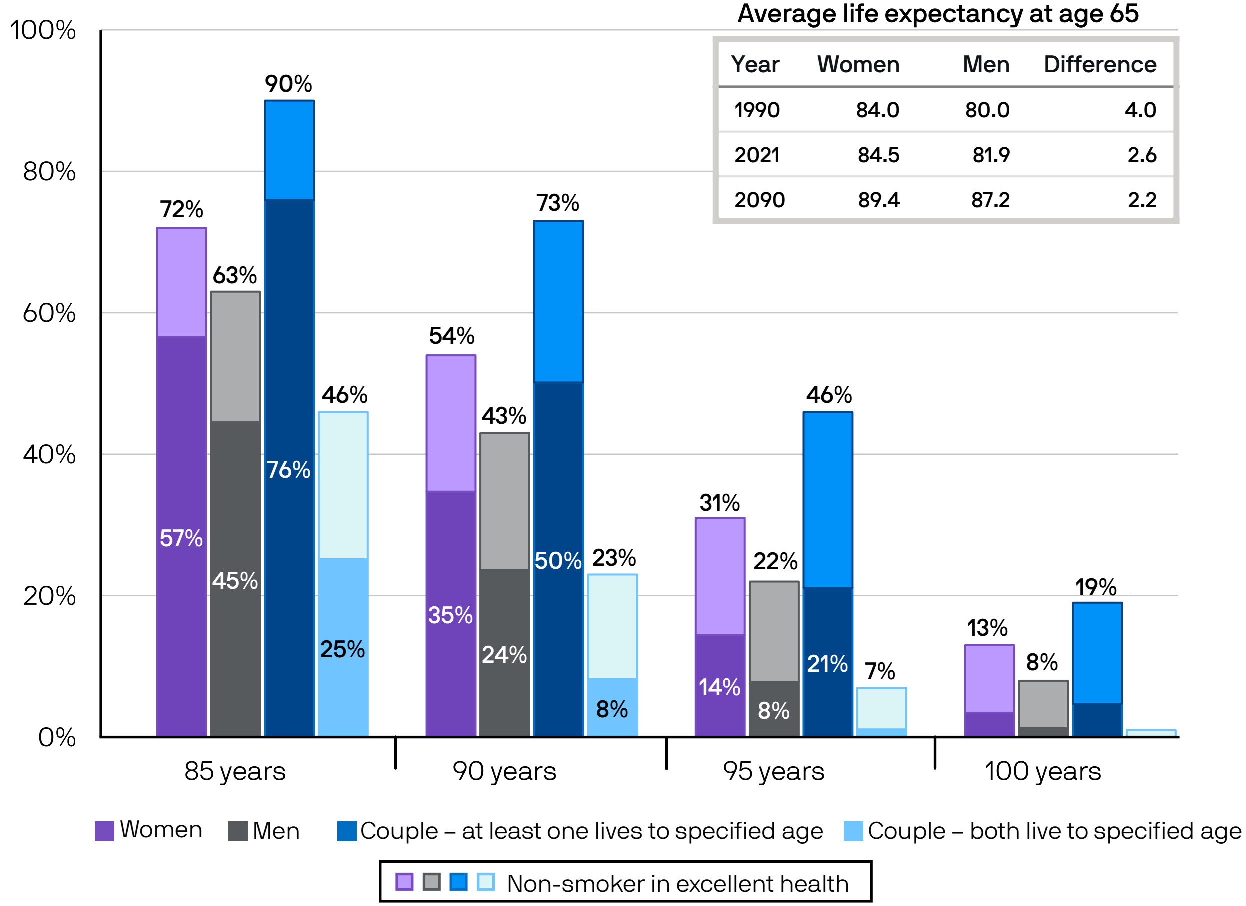
A sound retirement plan

Make the most of the things that you can control but be sure to evaluate factors that are somewhat or completely out of your control within your comprehensive retirement plan.

Source: The Importance of Being Earnest, J.P. Morgan Asset Management, 2013.

Life expectancy probabilities

If you're age 65 today, the probability of living to a specific age or beyond



Average life expectancy at age 65

Year	Women	Men	Difference
1990	84.0	80.0	4.0
2021	84.5	81.9	2.6
2090	89.4	87.2	2.2

Plan for longevity

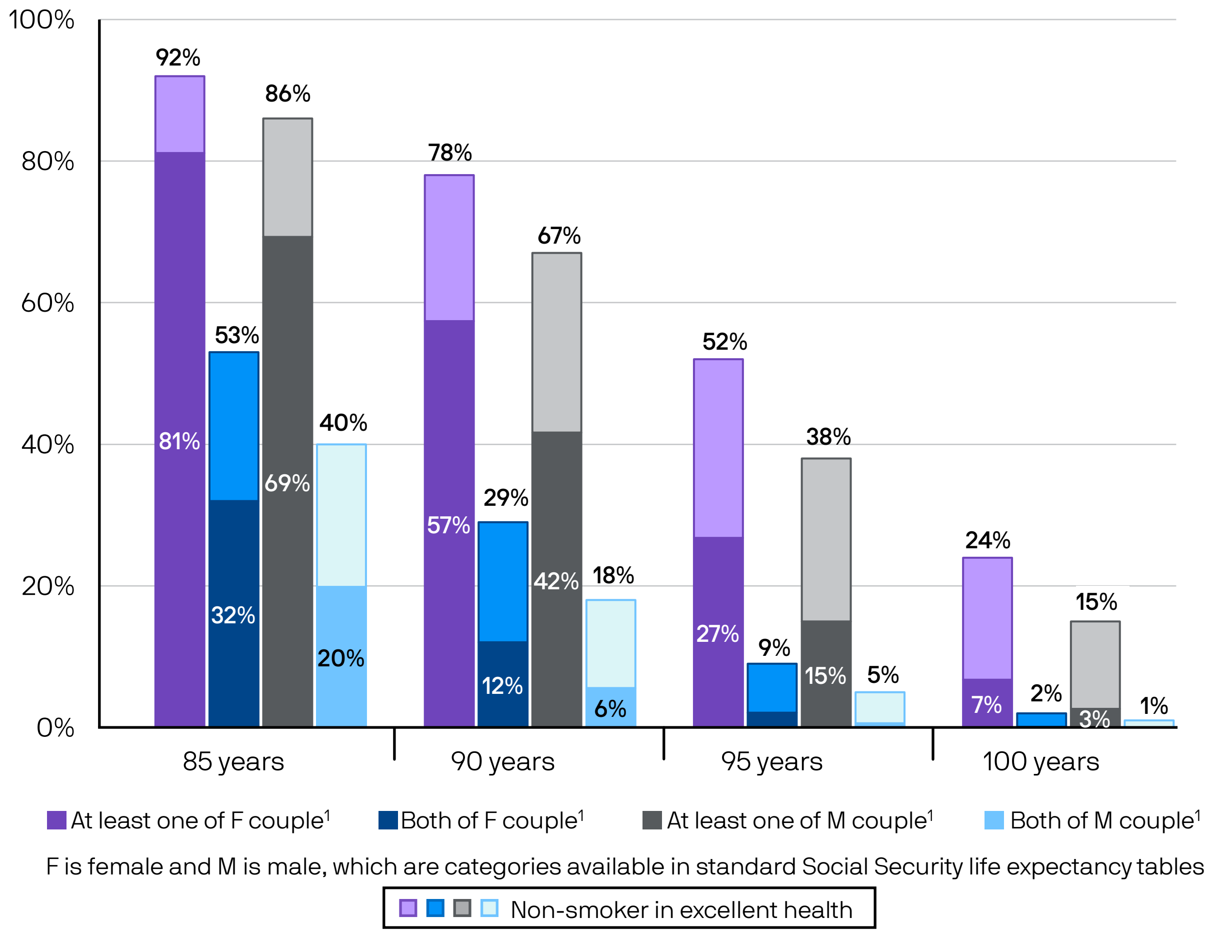
Average life expectancy is a mid-point not an end-point. You may need to plan on the probability of living much longer – perhaps 35 years in retirement – particularly if you are a non-smoker in excellent health.

Investing a portion of your portfolio for growth is important to maintain your purchasing power over time.

Source (chart): Social Security Administration, Period Life Table, 2019 (published in the 2022 OASDI Trustees Report); American Academy of Actuaries and Society of Actuaries, Actuaries Longevity Illustrator, http://www.longevityillustrator.org/ (accessed September 29, 2022), J.P. Morgan Asset Management. Source text: Social Security Administration 2022 OASDI Trustees Report.

Life expectancy probabilities for same sex couples

If you're age 65 today, the probability of living to a specific age or beyond



Plan for longevity

The longer-term trend is increasing life expectancy. This is magnified for female same-sex couples.

Average life expectancy is a mid-point not an end-point. You may need to plan on the probability of living much longer – perhaps 35 years in retirement – particularly if you are a non-smoker in excellent health.

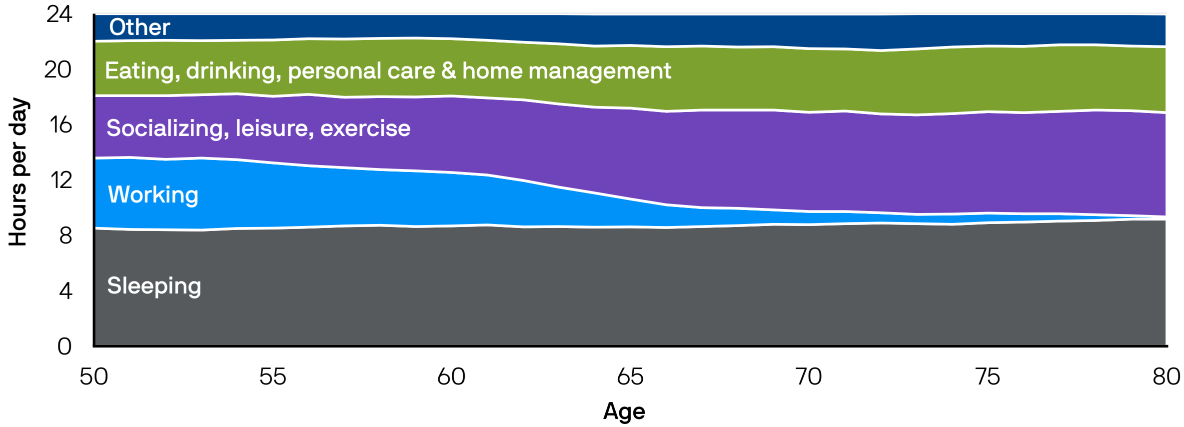
Investing a portion of your portfolio for growth is important to maintain your purchasing power over time.

[1]Sex assigned at birth.
Source (chart): Social Security Administration, Period Life Table, 2019 (published in the 2022 OASDI Trustees Report); American Academy of Actuaries and Society of Actuaries, Actuaries Longevity Illustrator, http://www.longevityillustrator.org/ (accessed September 29, 2022), J.P. Morgan Asset Management. Source text: Social Security Administration 2022 OASDI Trustees Report.

J.P.Morgan ASSET MANAGEMENT

Changes in lifestyle

Daily hours spent by activity per age



An individual who "PUSHES" tends to age well:

Has a sense of **P**urpose

Uses time to work, help others, go to events and/or participate in activities

Socializes with friends & family; spends time with others

Practices **H**ealthy behaviors

Expresses gratitude

Focuses on **S**trengths and abilities

Spend time planning your time

Retirement offers the gift of time to do the things that matter most to you.

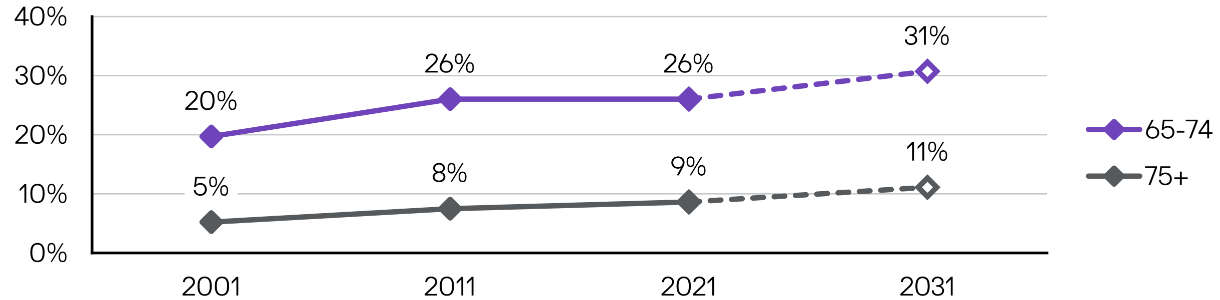
While our happiest years may be in retirement, the transition is not always a walk on the beach. Do your homework in advance to know what you are retiring to, not just what you are retiring from.

To make the most of your retirement years, be sure to prioritize what "PUSHES" you to age well.

Source (top chart): Bureau of Labor Statistics American Time Use Survey 2019, J.P. Morgan Asset Management analysis. Values include individuals who do and do not participate in the activities. Values are averaged across rolling five-year age groups. Each category includes time spent traveling to and from the activity if applicable. Excluded 2020 and 2021 due to pandemic impact.
Source (bottom chart): J.P. Morgan Asset Management analysis; PNAS.org, Vol 116, No. 4, Leading a Meaningful Life at Older Ages, January 22, 2019, Volume 8, Article 517226; Frontiers in Medicine, Fostering Well-being in the Elderly, April 2021, The Gerontologist Vol. 53, No. 6, 939–949; Perceptions of Successful Aging Among Diverse Elders with Late-Life Disability, December 11, 2012.

Older Americans in the workforce

Percentage of people in the civilian labor force 2001-2031

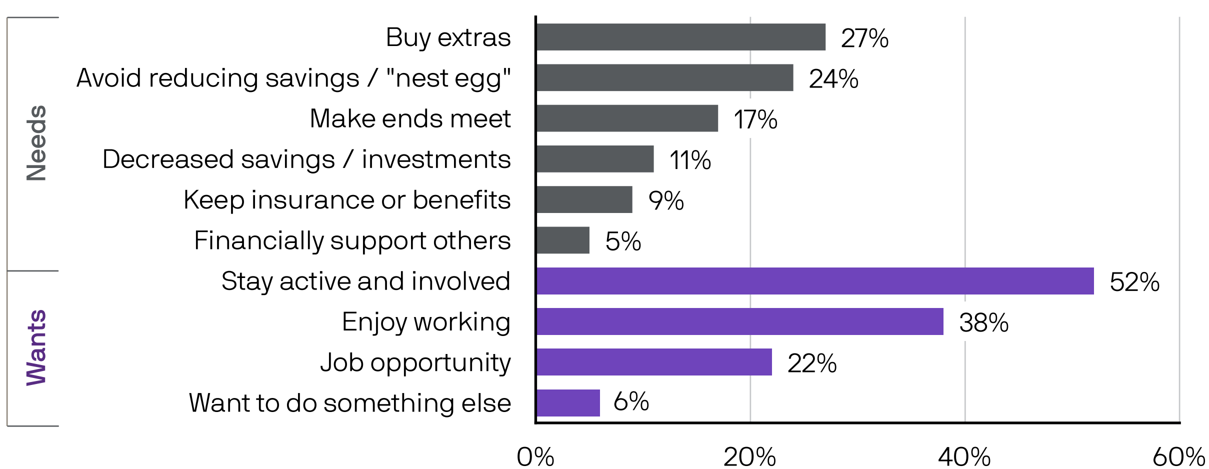


	2001	2011	2021	2031
Total civilian population 65+	34m	40m	56m	72m

It's still off to work I go

More people are working later in life, motivated by the desire to do so.

Major reasons people work in retirement



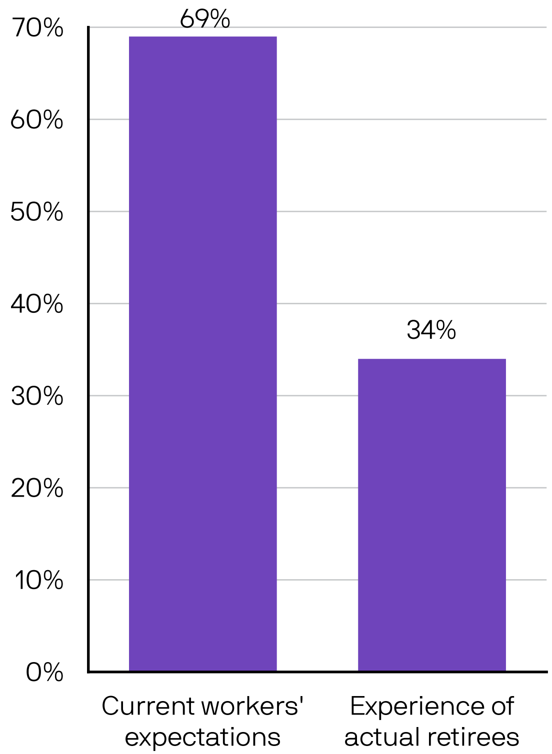
Source (top chart): Bureau of Labor Statistics, Employment Projections, Table 3.2 and Table 3.3. Actual data to 2021 and projection to 2031. Civilian population age 65+ is non-institutionalized population.
Source (bottom chart): Employee Benefit Research Institute, Mathew Greenwald & Associates, Inc., 2021 Retirement Confidence Survey.
Latest available data as of December 31, 2022. Individuals may have given more than one answer.

J.P.Morgan ASSET MANAGEMENT

Managing expectations of ability to work

Expectations of workers vs. retirees

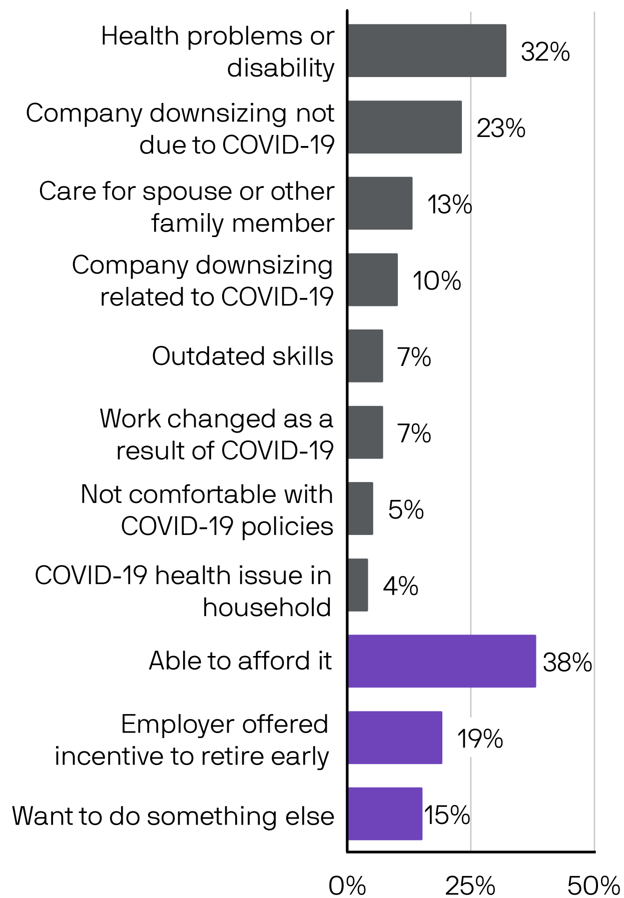
To retire at age 65 or older



Median retirement age:

Expected:	65
Actual:	62

Reasons for retiring earlier than planned



Early Retirement

You may not have complete control over when you retire, so you should consider having a back-up plan including:

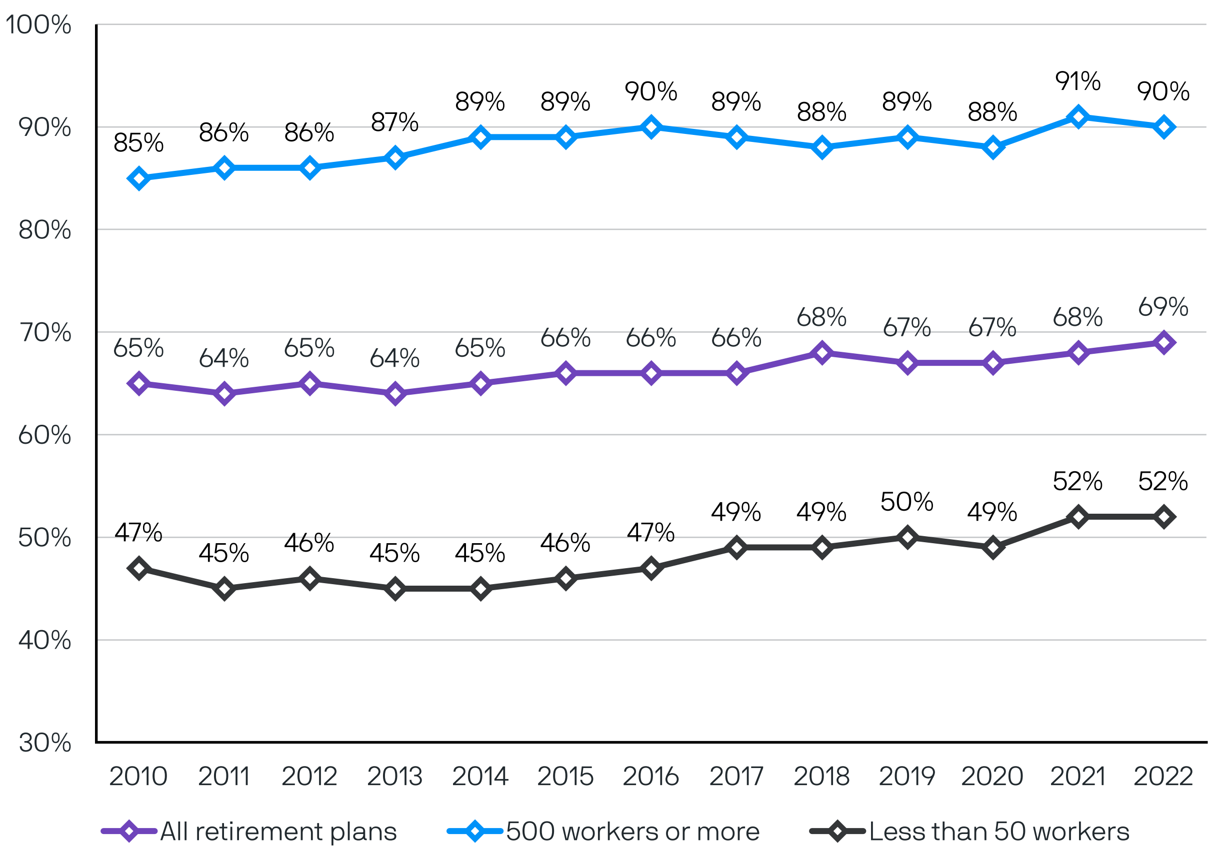
- Disability insurance
- Saving for financial freedom and the ability to weather changing circumstances

Source: Employee Benefit Research Institute, Mathew Greenwald & Associates, Inc., 2022 Retirement Confidence Survey. Individuals may have given more than one answer. Latest available data as of December 31, 2022.

J.P.Morgan ASSET MANAGEMENT

Access to employer-sponsored retirement benefits

Percent of private industry workers with access to retirement benefits 2010-2022



Small business opportunity

People are more likely to save for retirement when they have access to an employer-sponsored retirement plan[1]. Legislation such as state-specific mandates and SECURE 2.0 aim to broaden access for those who work for smaller companies.

Source: U.S. Bureau of Labor Statistics, National Compensation Survey.
[1]Among workers offered a retirement savings plan such as a 401(k), etc., 81% say they are currently saving vs. 40% of those not offered a retirement savings plan. Source: 2022 Retirement Confidence Survey, Employee Benefit Research Institute and Greenwald Research.

SECURE 2.0 Act of 2022: broadening access to more people and increasing savings

KEY THEME	DETAILS	EFFECTIVE
Encourage **small businesses** to create retirement plans through increased tax credits	Tax credit for 50% of startup cost up to $5,000 per year for three years[1]	2023
	Tax credit for employer contribution of up to $1,000 per employee for five years[2]	
Emergency savings accounts in defined contribution plans to build strong financial foundation	Maximum account value of $2,500[3] (after-tax contributions; tax-free distributions)	2024
Help manage **student loan** debt burden	Employers will be allowed to make matching contributions to the plans for participants paying student loans	2024
Allow **greater savings** in retirement plans	New plans will be required to auto enroll at a starting rate of at least 3% and auto escalate to at least 10% but no more than 15%	2025
	Increased catch-up amount for individuals aged 60-63 by 50% more than the regular catch-up limit in employer-sponsored plans	
	Replace the Saver's Credit with the Saver's Match equal to 50% of plan or IRA contributions, up to $2,000	2027

[1]For employers with 100 or fewer employees. For employers with 50 or fewer employees, the 50% startup cost limit is 100%.
[2]For employers with up to 50 employees that make plan contributions on behalf of employees whose wages do not exceed $100,000. The credit amount will be phased out for employers with between 51 and 100 employees.
[3]Contributions that exceed $2,500 will spill over to the long-term retirement savings portion of the plan. Employers may automatically enroll participants at a rate of up to 3% of pay.
This list of provisions is not detailed or exhaustive.
Source: SECURE 2.0 Act of 2022. J.P. Morgan analysis. https://am.jpmorgan.com/us/en/asset-management/adv/insights/retirement-insights/defined-contribution/secure-2-0/. Not intended to be tax advice. Consult your tax professional.

J.P.Morgan
ASSET MANAGEMENT

SECURE 2.0 Act of 2022: new tax implications

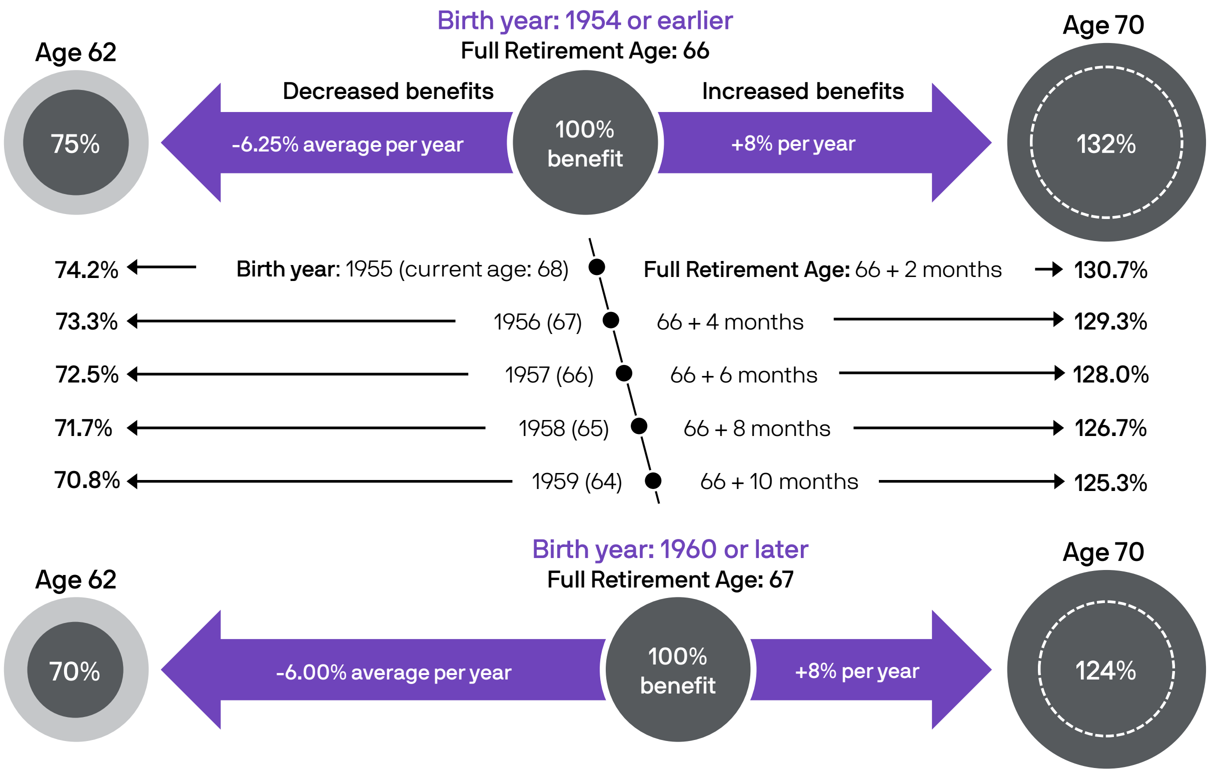
KEY THEME	DETAILS	EFFECTIVE
Increase the **starting age for required minimum distributions** (RMDs) from 72 to 75 over the next 10 years – *Deferring RMDs may increase taxes and Medicare surcharges late in life*	RMD starting age of 73 for individuals who reach age 72 after 2022	2023
	RMD starting age of 75 for individuals who reach age 74 after 2032	
Greater **importance of Roth** in employer-sponsored retirement plans	Permit employer matching contributions on a Roth basis	Dec 29, 2022
	Require catch-up contributions to be made on an after-tax Roth basis for highly paid employees[1]	2024
	Exempt in-plan Roth accounts from lifetime RMDs	
Enhance **qualifying longevity annuity contracts** (QLAC) – *Lifetime income starting late in life may help fund possible long-term care needs*	Allows up to $200,000 to be used to purchase a QLAC and delay required minimum distribution as late as age 85 when annuity payments commence	Dec 29, 2022
Permit **rollovers from 529** accounts to Roth IRAs	Allow rollovers from 529 Plans that have been open for 15 years to Roth IRAs (subject to a $35,000 lifetime limit and the annual IRA contribution limit)	2024

[1]Employees with wages in excess of $145,000 for the prior calendar year must make their catch-up contributions to a Roth account.
This list of provisions is not detailed or exhaustive.
Source: SECURE 2.0 Act of 2022. J.P. Morgan analysis. https://am.jpmorgan.com/us/en/asset-management/adv/insights/retirement-insights/defined-contribution/secure-2-0/. Not intended to be tax advice. Consult your tax professional.

Social Security timing trade-offs

Benefits differ by birth year and claim age

Full Retirement Age (FRA) = 100% benefit



Cost of living increase for benefits received in 2023	8.7%
Average cost of living adjustment (1985-2023)	2.8%

Understand the trade-offs

Deciding when to claim benefits will have a permanent impact on the benefit you receive. Claiming before your full retirement age can significantly reduce your benefit, while delaying increases it.

In 2017, full retirement age began transitioning from 66 to 67 by adding two months each year for six years. This makes claiming early even more of a benefit reduction.

For illustrative purposes only. The Social Security Amendments Act of 1983 increased FRA from 65 to 67 over a 40-year period. The first phase of transition increased FRA from 65 to 66 for individuals turning 62 between 2000 and 2005. After an 11-year hiatus, the transition from 66 to 67 (2017-2022) is complete. This material should be regarded as educational information on Social Security and is not intended to provide specific advice. If you have questions regarding your particular situation, you should contact the Social Security Administration and/or your legal or tax professional.

Source: Social Security Administration, J.P. Morgan Asset Management.

Claiming Social Security: decision tree

START HERE

Are you working?

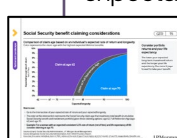
Y → **Delay claiming, particularly if you are subject to the earnings test**

N → Do you have other sources of income?

- N → **Consider claiming your benefit**
- Y → Do you prefer receiving a smaller benefit earlier vs. waiting for a larger benefit?
  - Y → ! You may want to take your benefit, but understand what you may be leaving on the table at older ages

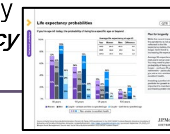
    

    GTR 14: Maximizing Social Security benefits
  - N → Do you want to claim your benefit to preserve your investment portfolio?
    - Y → ! Evaluate which claiming age results in the highest lifetime benefit based on your expected rate of return and life expectancy

      GTR 15: Social Security benefit claiming considerations
    - N → Age 77+ Do you expect to live beyond age 77?
      - N → **Consider taking your benefit as early as age 62** (Age 62)
      - Y → Age 81+ Do you expect to live beyond age 81?
        - N → **Consider taking benefit at Full Retirement Age*** (Age 67)
        - Y → **Consider waiting to age 70 to take your benefit** (Age 70)

! Weigh the odds of living to various ages and consider health status & family history of longevity



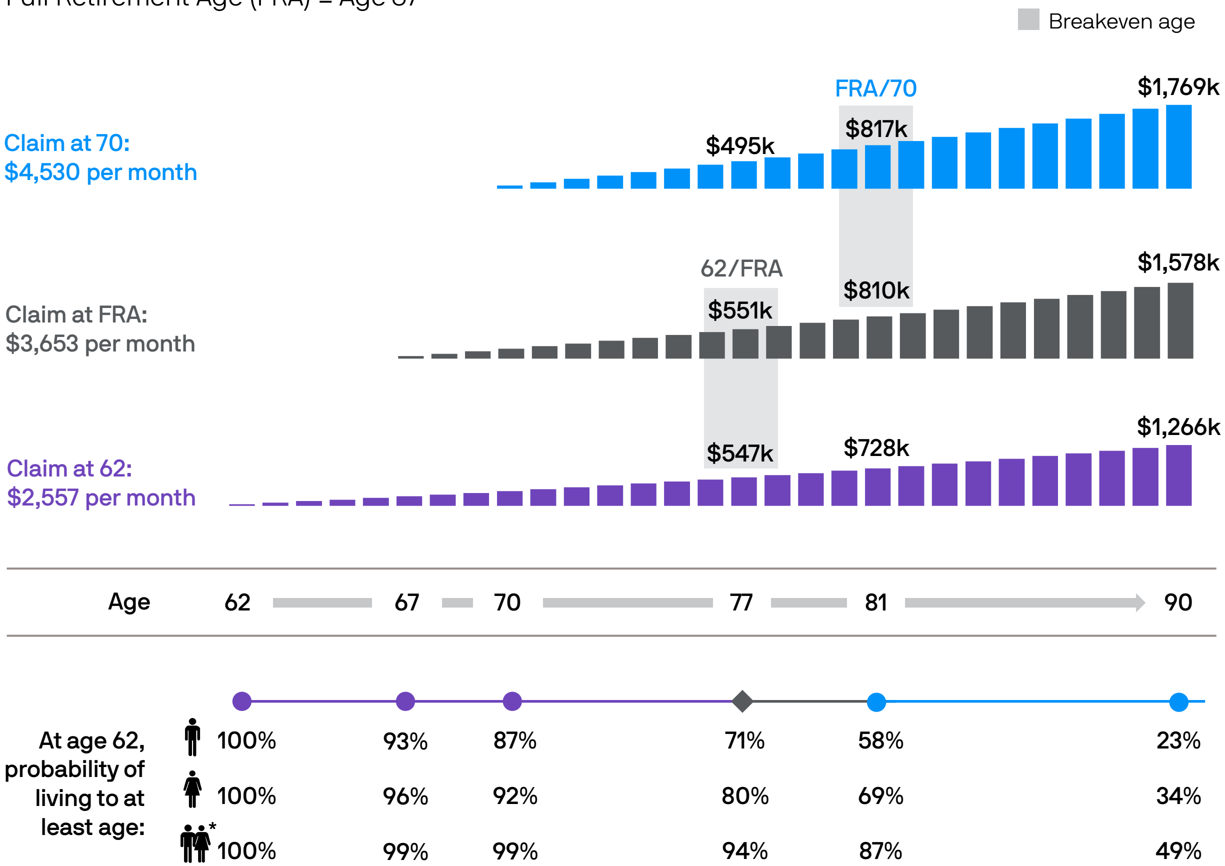
GTR 4 and 5: Life expectancy probabilities

Source: Social Security Administration, J.P. Morgan Asset Management. This material should be regarded as educational information on Social Security and is not intended to provide specific advice. If you have questions regarding your particular situation, you should contact the Social Security Administration and/or your legal or tax professionals.
*Full Retirement Age (FRA) of 67 is for individuals born 1960 or later. This decision tree is also appropriate for other FRAs.

Maximizing Social Security benefits: maximum earner

Cumulative individual maximum benefit by claim age

Full Retirement Age (FRA) = Age 67



Planning opportunity

Delaying benefits means increased Social Security income later in life, but your portfolio may need to bridge the gap and provide income until delayed benefits are received.

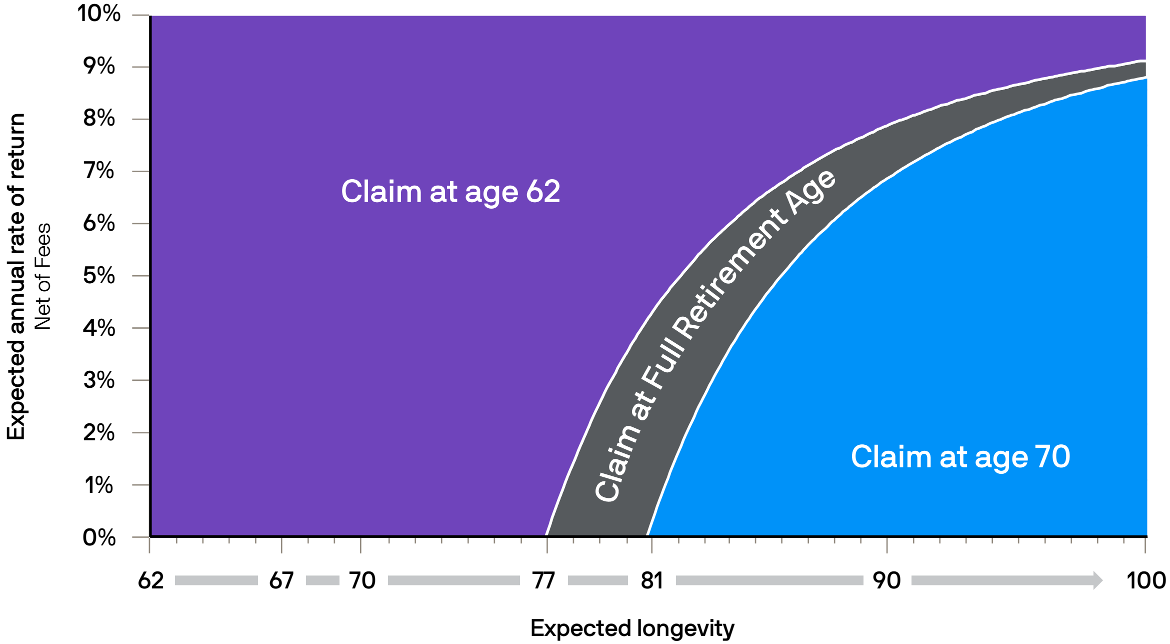
Source: Social Security Administration, J.P. Morgan Asset Management.

*Couple assumes at least one lives to the specified age or beyond. Breakeven assumes the same individual, born in 1961, earns the maximum wage base each year ($160,200 in 2023), retires at the end of age 61 and claims at 62 & 1 month, 67 and 70, respectively. Benefits are assumed to increase each year based on the Social Security Administration 2022 OASDI Trustee's Report intermediate estimates (annual benefit increase of 2.4% in 2024 and thereafter). Monthly amounts with the cost-of-living adjustments (not shown on the chart) are: $4,116 at FRA and $5,481 at age 70. Exact breakeven ages are 76 years & 9 months and 80 years & 7 months.

Social Security benefit claiming considerations

Comparison of claim age based on an individual's expected rate of return and longevity

Color represents the claim age with the highest expected lifetime benefits



Consider portfolio returns and your life expectancy

The lower your expected long-term investment return and the longer your life expectancy, the more it pays to wait to take your benefit.

How to use:

- Go to the intersection of your expected rate of return and your expected longevity.
- The color at this intersection represents the Social Security claim age that maximizes total wealth (cumulative Social Security benefit and investment portfolio) given three claiming options: age 62, Full Retirement Age (age 67) and age 70.
- **Example: For a woman with an expected consistent 5.5% rate of return (net of fees) and life expectancy of 88: consider claiming at age 70.**

Source (chart): Social Security Administration, J.P. Morgan Asset Management.
Source (longevity): Social Security Administration 2022 OASDI Trustees Report.
Assumes the same individual, born in 1961, retires at the end of age 61 and claims at 62 & 1 month, 67 and 70, respectively. Benefits are assumed to increase each year based on the Social Security Administration 2022 OASDI Trustee's Report intermediate estimates (annual benefit increase of 2.4% in 2024 and thereafter). Analysis is based on a maximum earner (all earnings profiles yield similar results). Expected rate of return is deterministic, in nominal terms, and net of fees.

Retirement savings checkpoints

Household income ≤$90k
Annual savings rate: 5%

Current age	$30,000	$40,000	$50,000	$60,000	$70,000	$80,000	$90,000
	Checkpoint (x current household income)						
25	See "Annual savings needed" on slide 19* for guidance		0.1	0.3	0.5	0.6	0.8
30		0.2	0.5	0.7	1.0	1.1	1.3
35		0.6	0.9	1.1	1.5	1.6	1.9
40	0.3	1.0	1.4	1.6	2.1	2.3	2.5
45	0.6	1.5	2.0	2.3	2.8	3.0	3.3
50	1.0	2.1	2.6	2.9	3.6	3.8	4.2
55	1.5	2.7	3.3	3.7	4.5	4.8	5.2
60	2.0	3.4	4.1	4.5	5.3	5.7	6.2
65	2.3	3.8	4.5	5.0	5.8	6.2	6.7

(Column headers are grouped under "Current household income".)

This analysis assumes you would like to maintain an equivalent lifestyle in retirement.
Household income is assumed to be gross income (before taxes and savings).

How to use:

- Go to the intersection of your current age and your closest current household income.
- Multiply your current household income by the checkpoint shown. This is the amount you should have saved today, assuming you continue contributions of 5% going forward.
- **Example: For a 40-year-old with a household income of $50,000: $50,000 x 1.4 = $70,000**

Model assumptions

Annual gross savings rate:
5%

Pre-retirement portfolio:
60/40 diversified portfolio

Post-retirement portfolio:
40/60 diversified portfolio

Inflation rate: **2.5%**

Retirement age:

- Primary earner: **65**
- Spouse: **63**

Years in retirement: **35**

*Households age 25 earning $40k or below and households age 30-35 earning $30k may need to save less than the 5% annual savings rate assumed in this analysis. If they were to save 5% annually going forward they would not need to have current assets to be on track. They should refer to the annual savings rate they need to be saving today found on slide 19. This chart is for illustrative purposes only and must not be relied upon to make investment decisions. J.P. Morgan Asset Management's (JPMAM) model is based on proprietary Long-Term Capital Market Assumptions returns, and an 80% confidence level. Portfolios are described as equity/bond percentages (e.g., a 40/60 portfolio is 40% equities and 60% bonds). Assumptions include household income replacement rates shown on slide 18. Consult with a financial professional for a more personalized assessment. Allocations, assumptions and expected returns are not meant to represent JPMAM performance. Given the complex risk/reward trade-offs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations. References to future returns for either asset allocation strategies or asset classes are not promises or even estimates of actual returns a client portfolio may achieve.

Retirement savings checkpoints

Household income ≥$100k
Annual savings rate: 10%

Current age	Current household income: $100,000	$125,000	$150,000	$175,000	$200,000	$250,000	$300,000
	Checkpoint (x current household income)						
25	0.1	0.4	0.6	0.8	0.9	1.1	1.3
30	0.7	1.1	1.3	1.5	1.7	1.9	2.1
35	1.5	2.0	2.2	2.5	2.7	3.0	3.2
40	2.5	3.0	3.3	3.6	3.8	4.2	4.5
45	3.5	4.2	4.5	4.9	5.2	5.6	5.9
50	4.7	5.5	5.9	6.3	6.6	7.1	7.5
55	6.0	6.9	7.4	7.9	8.3	8.8	9.3
60	7.4	8.4	8.9	9.5	9.9	10.5	11.1
65	8.3	9.3	9.9	10.5	10.9	11.6	12.2

This analysis assumes you would like to maintain an equivalent lifestyle in retirement.
Household income is assumed to be gross income (before taxes and savings).

How to use:

- Go to the intersection of your current age and your closest current household income.
- Multiply your current household income by the checkpoint shown. This is the amount you should have saved today, assuming you continue contributions of 10% going forward.
- **Example: For a 40-year-old with a household income of $100,000: $100,000 x 2.5 = $250,000**

Model assumptions

Annual gross savings rate: **10%**

Pre-retirement portfolio: **60/40 diversified portfolio**

Post-retirement portfolio: **40/60 diversified portfolio**

Inflation rate: **2.5%**

Retirement age:

- Primary earner: **65**
- Spouse: **63**

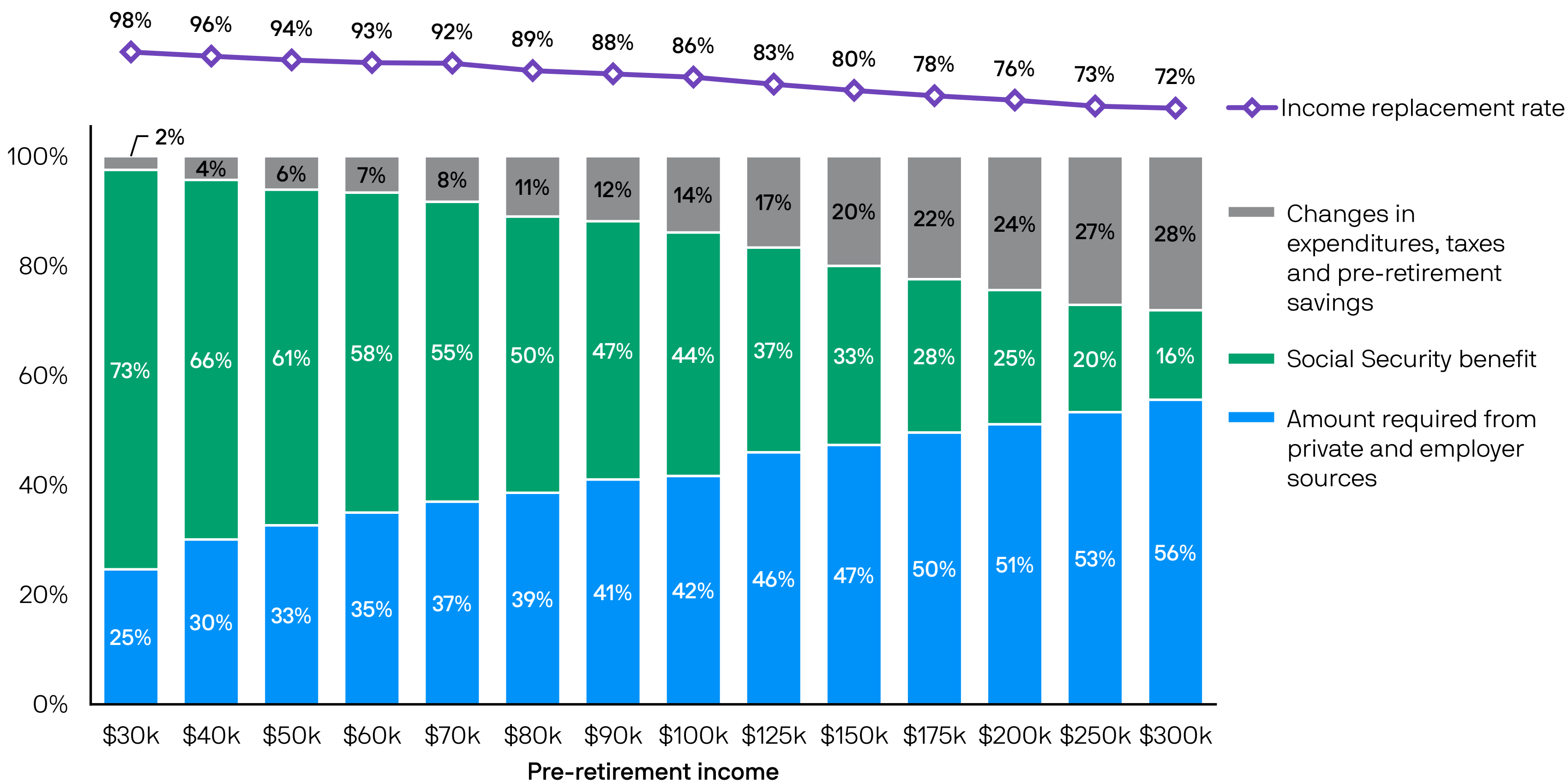
Years in retirement: **35**

This chart is for illustrative purposes only and must not be relied upon to make investment decisions. J.P. Morgan Asset Management's (JPMAM) model is based on proprietary Long-Term Capital Market Assumptions returns, and an 80% confidence level. Portfolios are described as equity/bond percentages (e.g., a 40/60 portfolio is 40% equities and 60% bonds). Assumptions include household income replacement rates shown on slide 18. Consult with a financial professional for a more personalized assessment. Allocations, assumptions and expected returns are not meant to represent JPMAM performance. Given the complex risk/reward trade-offs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations. References to future returns for either asset allocation strategies or asset classes are not promises or even estimates of actual returns a client portfolio may achieve.

Saving

Income replacement needs vary by household income

Replacement rate detail by household income



Source: J.P. Morgan Asset Management analysis, 2021. Household income replacement rates are derived from an inflation-adjusted analysis of: Consumer Expenditure Survey (BLS) data (2016-2019) for income and longitudinal Chase data (2013-2020) for spending. Chase data includes internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, cash, credit and debit card, and electronic payment transactions from January 1, 2013 to December 31, 2020. Additional information on J.P. Morgan Asset Management's data privacy standards available at https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/gtr-privdisc/. Social Security benefits uses modified scaled earnings in 2021 for a single wage earner at age 65 and a spousal benefit at age 63. The income replacement needs may be lower for households in which both spouses are working and the second spouse's individual benefits are greater than their spousal benefit. Single household income replacement needs may vary as spending is typically less than a two-spouse household; however, the loss of the Social Security spousal benefit may offset the spending reduction. Percentages and values may not sum due to rounding.

J.P.Morgan
ASSET MANAGEMENT

Annual savings needed if starting today

Household income ≤$90k

Current age	Current household income: $30,000	$40,000	$50,000	$60,000	$70,000	$80,000	$90,000
	Savings rate (x current household income)						
25	3%	5%	6%	6%	7%	8%	8%
30	4%	6%	7%	8%	9%	10%	11%
35	5%	8%	10%	11%	12%	13%	14%
40	6%	11%	13%	14%	16%	17%	19%
45	9%	15%	18%	19%	23%	24%	26%
50	13%	21%	25%	28%	33%	35%	38%

Values assume you would like to maintain an equivalent lifestyle in retirement.
Household income is assumed to be gross income (before taxes and savings).

How to use:

- Go to the intersection of your current age and your closest current household income.
- This is the percentage of your current household income to contribute annually going forward if you have $0 saved for retirement today.
- **Example: A 40-year-old with household income of $50,000 and $0 saved for retirement today may need to save 13% every year until retirement.**

Model assumptions

Pre-retirement portfolio:
60/40 diversified portfolio

Post-retirement portfolio:
40/60 diversified portfolio

Inflation rate: **2.5%**

Retirement age:

- Primary earner: **65**
- Spouse: **63**

Years in retirement: **35**

This chart is for illustrative purposes only and must not be relied upon to make investment decisions. J.P. Morgan Asset Management's (JPMAM) model is based on proprietary Long-Term Capital Market Assumptions returns, and an 80% confidence level. Portfolios are described as equity/bond percentages (e.g., a 40/60 portfolio is 40% equities and 60% bonds). Assumptions include household income replacement rates shown on slide 18. Consult with a financial professional for a more personalized assessment. Allocations, assumptions and expected returns are not meant to represent JPMAM performance. Given the complex risk/reward trade-offs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations. References to future returns for either asset allocation strategies or asset classes are not promises or even estimates of actual returns a client portfolio may achieve.

Annual savings needed if starting today

Current age	Current household income: $100,000	$125,000	$150,000	$175,000	$200,000	$250,000	$300,000
	Savings rate (x current household income)						
25	10%	12%	12%	13%	14%	15%	15%
30	13%	15%	16%	17%	18%	19%	20%
35	18%	20%	21%	23%	23%	25%	26%
40	23%	26%	28%	30%	31%	33%	34%
45	33%	37%	39%	41%	43%	46%	48%
50	47%	53%	56%	60%	62%	66%	69%

Values assume you would like to maintain an equivalent lifestyle in retirement. Household income is assumed to be gross income (before taxes and savings).

How to use:

- Go to the intersection of your current age and your closest current household income.
- This is the percentage of your current household income to contribute annually going forward if you have $0 saved for retirement today.
- **Example: A 40-year-old with household income of $100,000 and $0 saved for retirement today may need to save 23% every year until retirement.**

Model assumptions

Pre-retirement portfolio:
60/40 diversified portfolio

Post-retirement portfolio:
40/60 diversified portfolio

Inflation rate: **2.5%**

Retirement age:

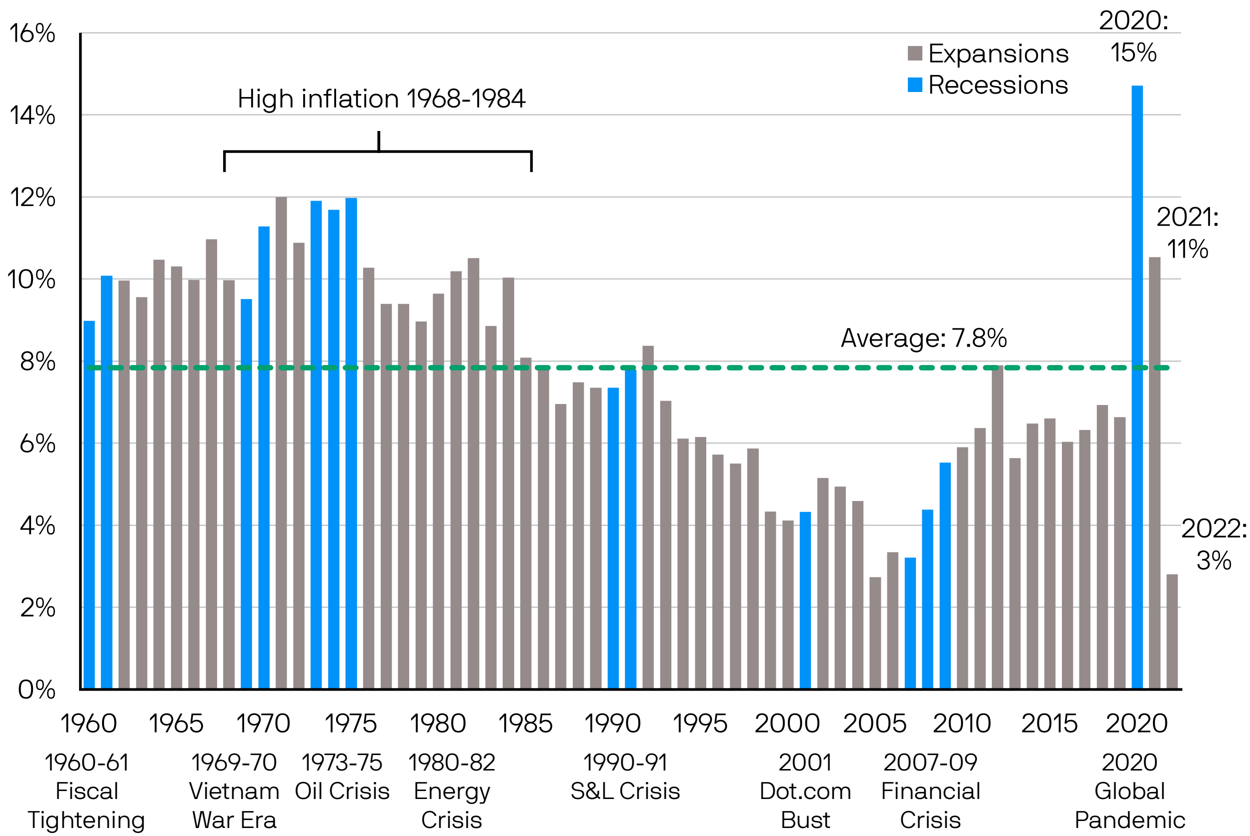
- Primary earner: **65**
- Spouse: **63**

Years in retirement: **35**

This chart is for illustrative purposes only and must not be relied upon to make investment decisions. J.P. Morgan Asset Management's (JPMAM) model is based on proprietary Long-Term Capital Market Assumptions returns, and an 80% confidence level. Portfolios are described as equity/bond percentages (e.g., a 40/60 portfolio is 40% equities and 60% bonds). Assumptions include household income replacement rates shown on slide 18. Consult with a financial professional for a more personalized assessment. Allocations, assumptions and expected returns are not meant to represent JPMAM performance. Given the complex risk/reward trade-offs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations. References to future returns for either asset allocation strategies or asset classes are not promises or even estimates of actual returns a client portfolio may achieve.

Historical annual savings rate

Personal savings rate
Annual, % of gross income



Beware the wealth effect

During economic expansions when the value of stocks and homes increases, Americans tend to save less than during recessions.

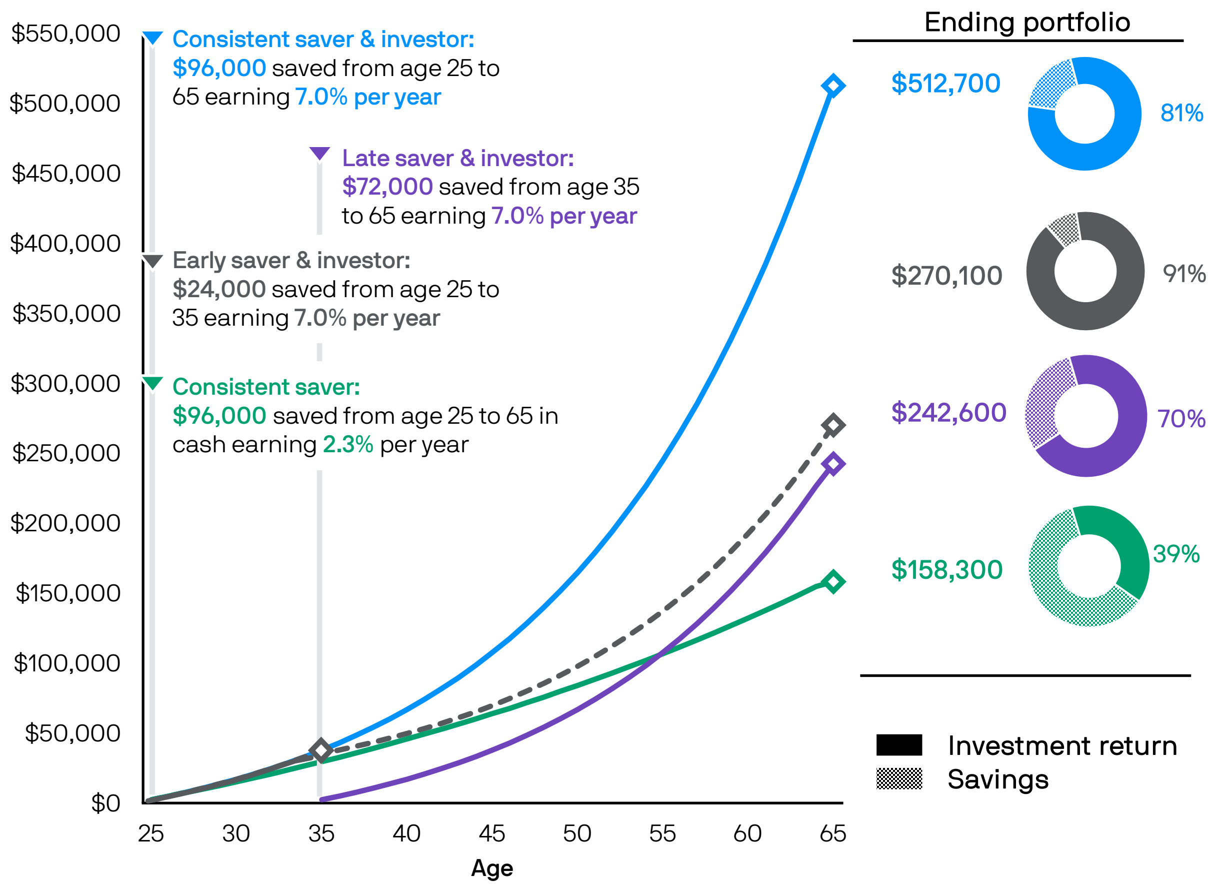
Government help through the pandemic boosted savings rates to record levels, but in 2022 the savings rate plummeted to the lowest level since 2005 due to greater spending and higher prices from record inflation.

On average, Americans are saving well below the 10%-15% consistent annual savings rate required to successfully fund retirement.*

*Recommended savings rates are based on J.P. Morgan Asset Management's analysis of median and affluent households.
Source: Bureau of Economic Analysis, National Bureau of Economic Research, J.P. Morgan Asset Management, as of December 31, 2022. Personal savings rate is calculated as personal savings (after-tax income minus personal outlays) divided by gross income. Employer and employee contributions to retirement funds are included in after-tax income but not in personal outlays, and thus are implicitly included in personal savings.

Benefit of saving and investing early

Account growth of $200 invested/saved monthly



Saving fundamentals

Saving early and often, and investing what you save, are some of the keys to a successful retirement due to the power of long-term compounding.

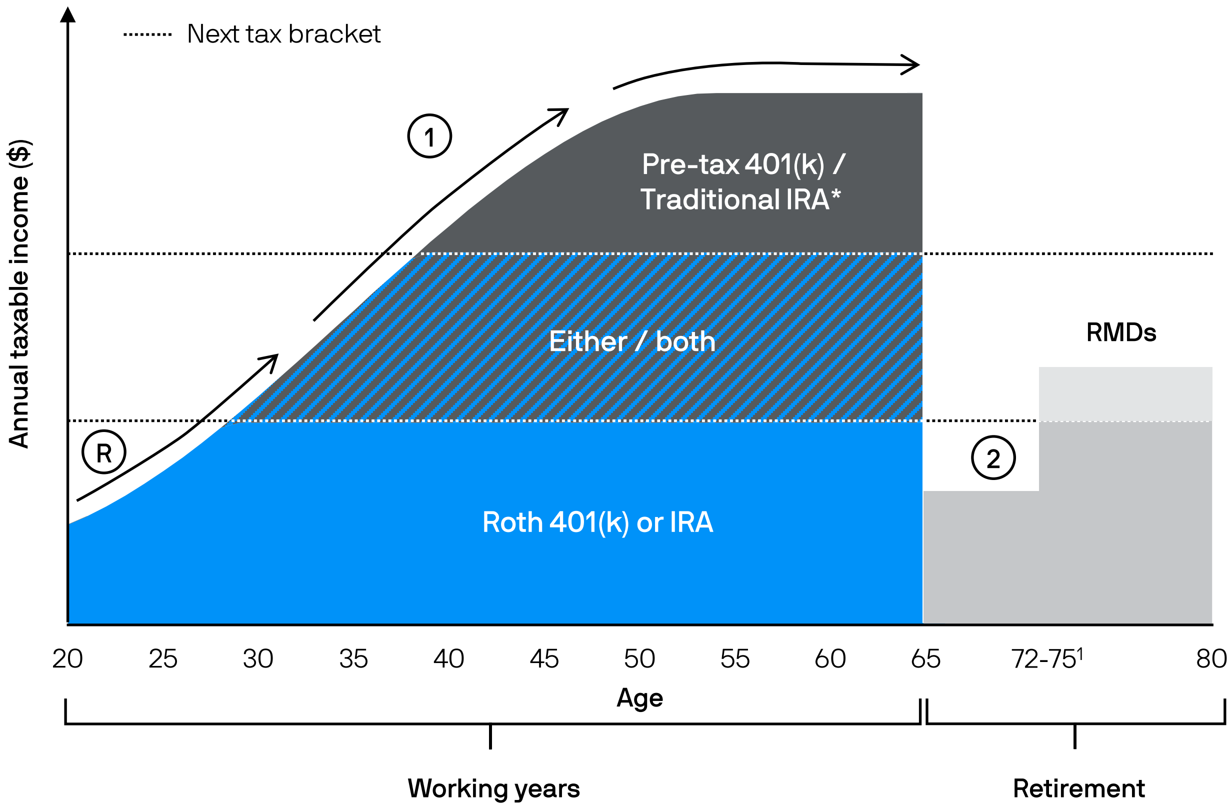
The above example is for illustrative purposes only and not indicative of any investment.
Source: J.P. Morgan Asset Management, Long-Term Capital Market Assumptions. Compounding is the increasing value of assets due to investment return earned on both principal and prior investment gains.

J.P.Morgan ASSET MANAGEMENT

Evaluate a Roth at different life stages

Changes in lifetime taxable income

Hypothetical wage curve



Tax diversification

Managing taxes over a lifetime requires balancing your current and future tax pictures. Make income tax diversification a priority to have more flexibility and control in retirement.

Rule (R): Contributing to a Roth early in your career and shifting as your income increases.

1. Roth 401(k) contributions in peak earning years if wealth is concentrated in tax-deferred accounts.

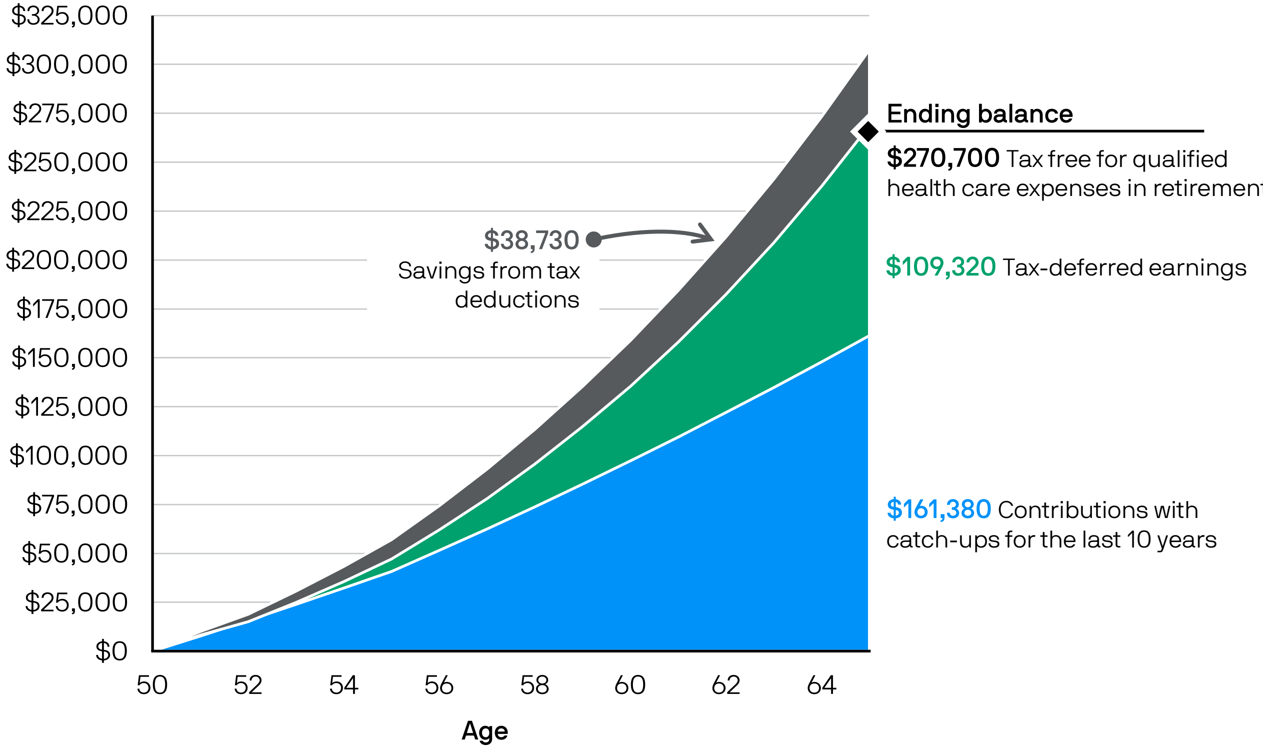
2. Proactive Roth conversions in lower income retirement years if RMDs[1] are likely to push you into a higher bracket.

*If eligible to make a deductible contribution (based on your MAGI = Modified Adjusted Gross Income).
[1]SECURE 2.0 increased the starting age for RMD (Required Minimum Distributions) from 72 to 75 over the next 10 years. See slide 11 for more details. The illustration reflects savings options into Traditional and Roth IRA accounts, as well as into pre-tax and Roth 401(k) accounts. RMDs are typically due no later than April 1 following the year the owner turns their distribution age (72-75) and are calculated every year based on the year-end retirement account value and the owner/plan participant's life expectancy using the IRS Uniform or Joint Life Expectancy Table. If the employer contributions are pre-tax, they are subject to tax upon distribution.
The above example is for illustrative purposes only.
Source: J.P. Morgan Asset Management.

Maximizing an HSA for health care expenses

Health Savings Accounts (HSAs) are triple tax advantaged[1]

Maximum family contribution with catch-ups, 7% return and 24% marginal tax rate



Make the most of it

Investing your HSA contributions for the long term and paying for current health care expenses out of income or short-term savings can provide significant tax-free funds for health care expenses in retirement.

$270,700 would provide about 14 years of qualified Medicare-related health care expenses for a couple.

[1]Must have a qualifying high-deductible health plan to make contributions. Funds in the HSA may be withdrawn tax free for qualified medical expenses unless a credit or deduction for medical expenses is claimed. After age 65 funds also may be withdrawn for any reason and taxed as ordinary income without penalty. Some health insurance premiums may be qualified expenses such as COBRA coverage, coverage while receiving state or federal unemployment compensation, Medicare Part B and D premiums and qualified long-term care (LTC) insurance premiums up to certain limits but excludes Medigap/Medicare supplement policies and most hybrid products that combine LTC with annuities and life insurance. See IRS Publications 969 and 502. This is not intended to be individual tax advice; consult a tax professional.

The above example is for illustrative purposes only and not indicative of any investment. 2023 family contribution limit of $7,750 is adjusted for inflation of 2.5% for 15 years with catch-up contributions of $1,000 per person starting at age 55 in 2028. Does not include account fees. Present value of illustrated HSA is $185,520. Estimated savings from tax deductions at a 37% marginal rate are $59,710. Assumes cash or income used for health care expenses is not withdrawn from an account with a tax liability. Assumes $2,000 was held in a cash account and not earning a return. Individual 2023 contribution limit is $3,850.

Diversified sources of retirement funding

Account type	Investment earnings/ withdrawals	Included when calculating whether: Income taxes owed?	Social Security % taxed? Medicare surcharges?
Health Savings Account	Tax-free withdrawals (for qualified health care expenses)[1]		
Roth 401(k)/IRA	Tax-free withdrawals[2]		
Taxable Account	Tax-exempt interest		☑
	Ordinary dividends Taxable interest	☑	☑
	Qualified dividends	☑	☑
	Realized capital gains	☑	☑
Pre-tax 401(k)/ Traditional IRA	Taxable withdrawals (ordinary income)	☑	☑

Retirement funding sources are not created equal

Investment earnings and withdrawals from tax-advantaged accounts are important sources to fund retirement spending needs.

When building a retirement income plan, be aware of sources that may be used to determine:

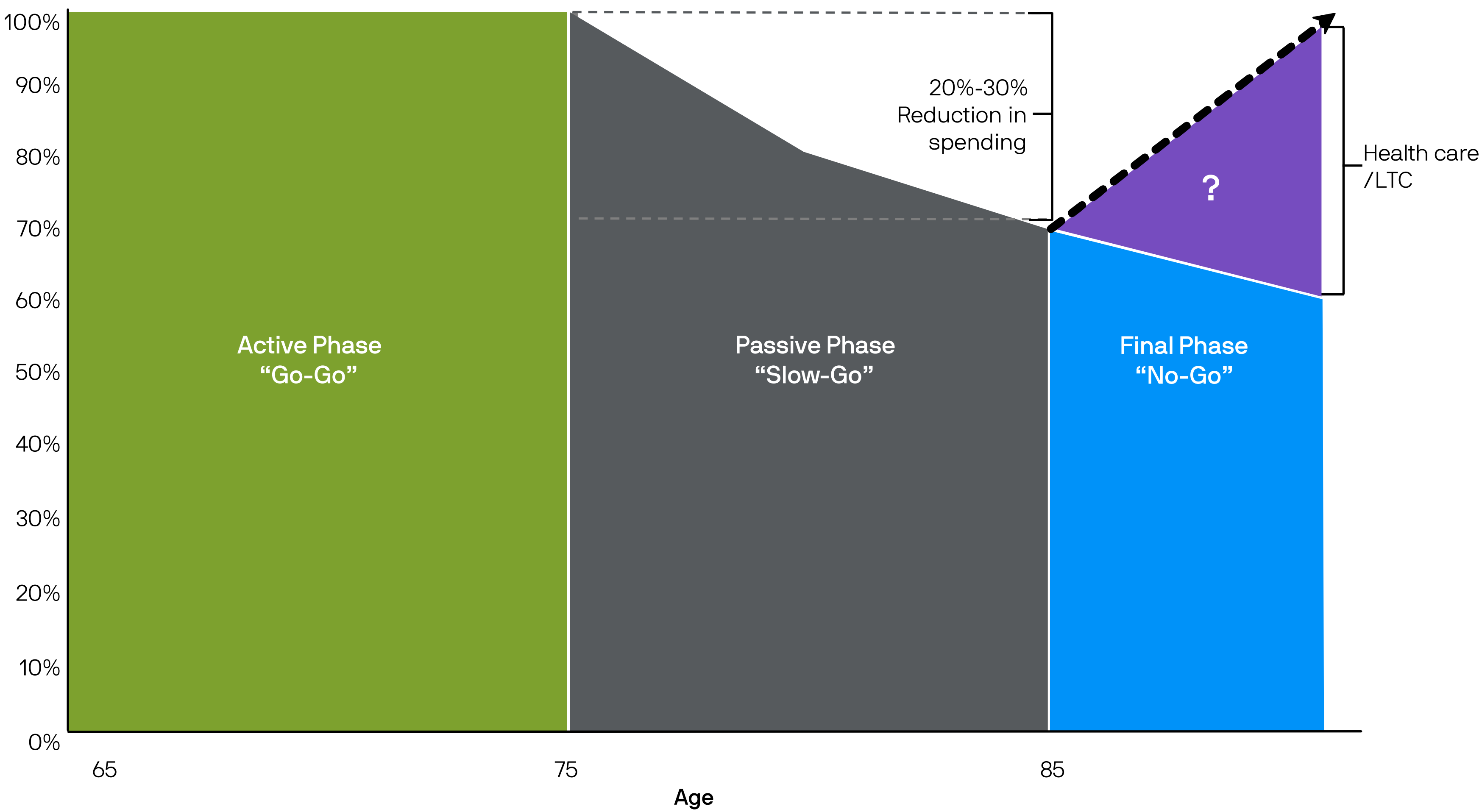
- Income taxes
- How much Social Security benefit is subject to tax
- Additional required Medicare premiums

Qualified withdrawals from Roth or Health Savings Accounts can provide tax-free funding that will not result in reduction of government benefits.

This is not intended to be individual tax advice; consult your tax professional.
[1]Must have a qualifying high-deductible health plan to make contributions. Funds in the HSA may be withdrawn tax free for qualified medical expenses unless a credit or deduction for medical expenses is claimed. After age 65 funds also may be withdrawn at ordinary income tax rates without penalty for any reason.
[2]Subject to 5-year Roth account holding period and age requirements.
Source: J.P. Morgan Asset Management.

"The Prosperous Retirement": theoretical spending profile

Percentage of pre-retirement spending



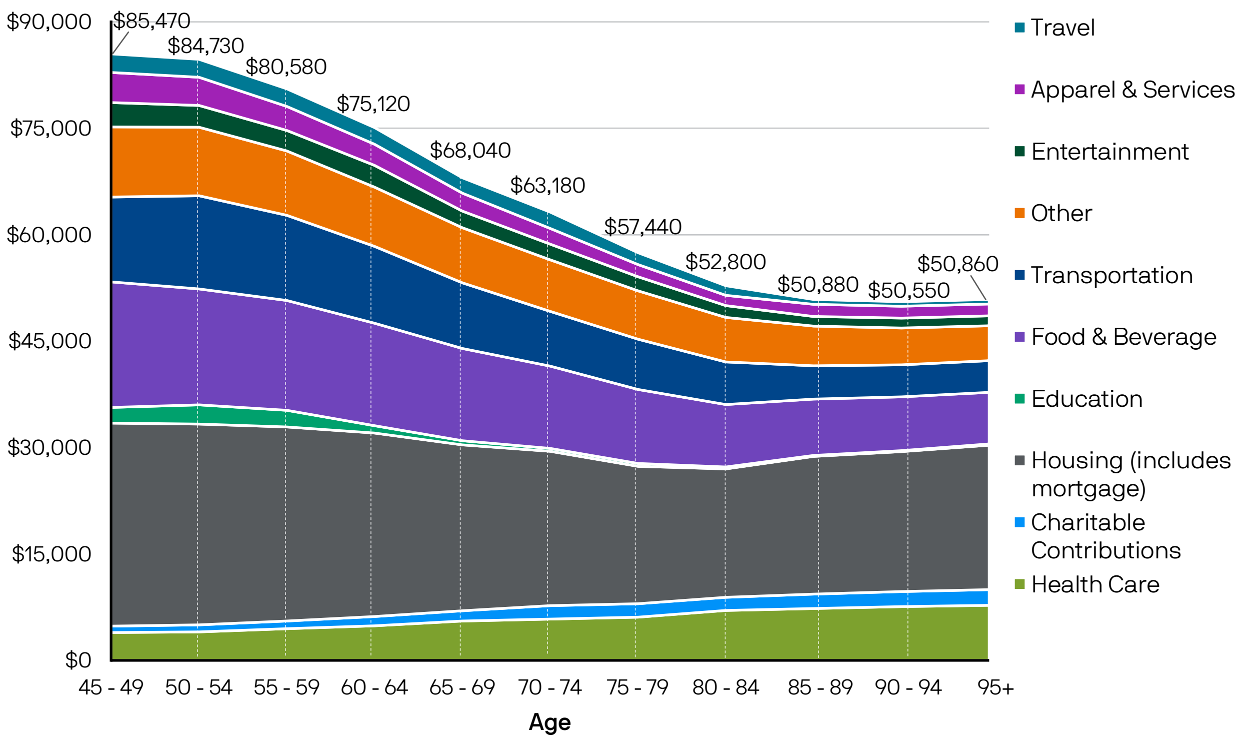
Source: The Prosperous Retirement: Guide to the New Reality, Michael K. Stein, CFP, 1998. pp. 16-18.

Spending

Changes in spending

All households
$250k - $750k investable wealth

Annual average household spending by age



What to expect

Average spending is highest at midlife. Those at older ages tend to spend less on all categories except health care and charitable contributions.

Those who live to the oldest ages may have costs related to long-term care, which may increase health care and housing costs.

On average, total spending is relatively flat later in life for those with estimated assets of $250k - $750k.

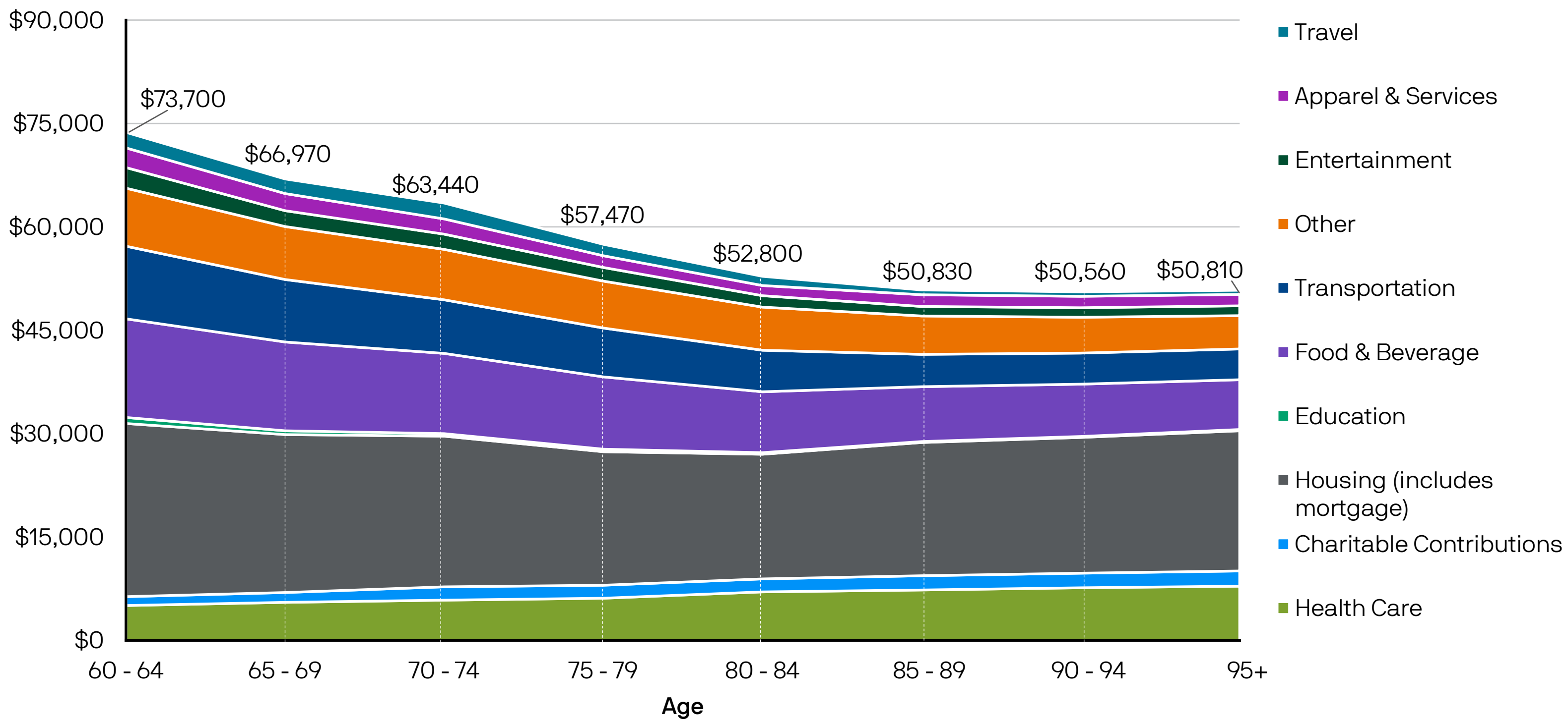
Source: J.P. Morgan Asset Management, based on internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, credit and debit card and electronic payment transactions from January 1, 2017 to November 30, 2022. Check and cash distribution: 2019 CE Survey; J.P. Morgan Asset Management analysis. Information that would have allowed identification of specific customers was removed prior to the analysis. Other includes: tax payments, insurance, gambling, personal care and uncategorized items. Asset estimates for de-identified and aggregated households supplied by IXI, an Equifax Company; estimates include all financial assets except employer-sponsored plans and do not include home equity. Additional information on J.P. Morgan Asset Management's data privacy standards available at https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/gtr-privdisc/.

Spending

Changes in spending

Partially and fully retired households
$250k - $750k investable wealth

Annual average household spending by age



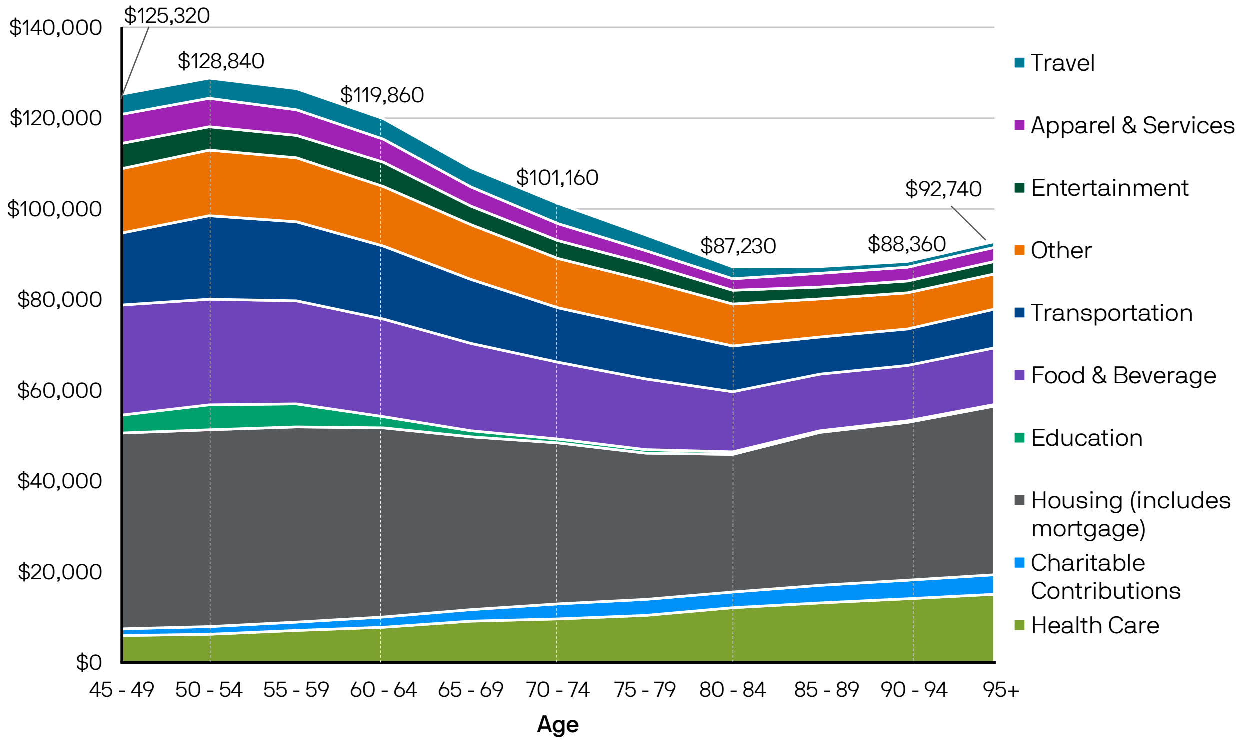
Source: J.P. Morgan Asset Management, based on internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, credit and debit card and electronic payment transactions from January 1, 2017 to November 30, 2022. Check and cash distribution: 2019 CE Survey; J.P. Morgan Asset Management analysis. Information that would have allowed identification of specific customers was removed prior to the analysis. Other includes: tax payments, insurance, gambling, personal care and uncategorized items. Asset estimates for de-identified and aggregated households supplied by IXI, an Equifax Company; estimates include all financial assets except employer-sponsored plans and do not include home equity. Additional information on J.P. Morgan Asset Management's data privacy standards available at https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/gtr-privdisc/. Retired households receive retirement income only, including Social Security, pension and/or annuity payments. Partially retired households receive both retirement income and labor income.

J.P.Morgan ASSET MANAGEMENT

Changes in spending

All households
$1m - $3m investable wealth

Annual average household spending by age



What to expect

Average spending is highest at midlife. Those at older ages tend to spend less on all categories except health care and charitable contributions.

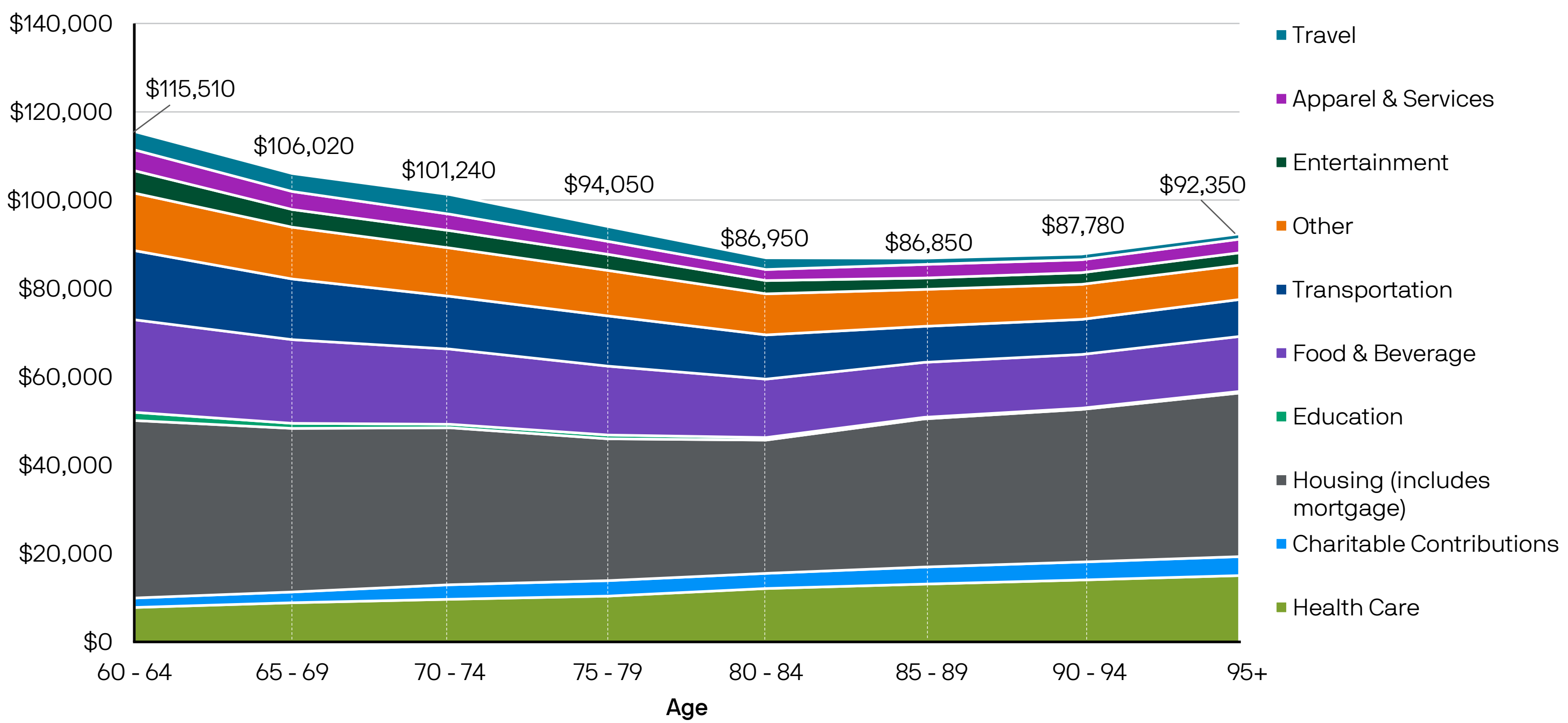
Those who live to the oldest ages may have costs related to long-term care, which may increase health care and housing costs.

Source: J.P. Morgan Asset Management, based on internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, credit and debit card and electronic payment transactions from January 1, 2017 to November 30, 2022. Check and cash distribution: 2019 CE Survey; J.P. Morgan Asset Management analysis. Information that would have allowed identification of specific customers was removed prior to the analysis. Other includes: tax payments, insurance, gambling, personal care and uncategorized items. Asset estimates for de-identified and aggregated households supplied by IXI, an Equifax Company; estimates include all financial assets except employer-sponsored plans and do not include home equity. Additional information on J.P. Morgan Asset Management's data privacy standards available at https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/gtr-privdisc/.

Changes in spending

Partially and fully retired households
$1m - $3m investable wealth

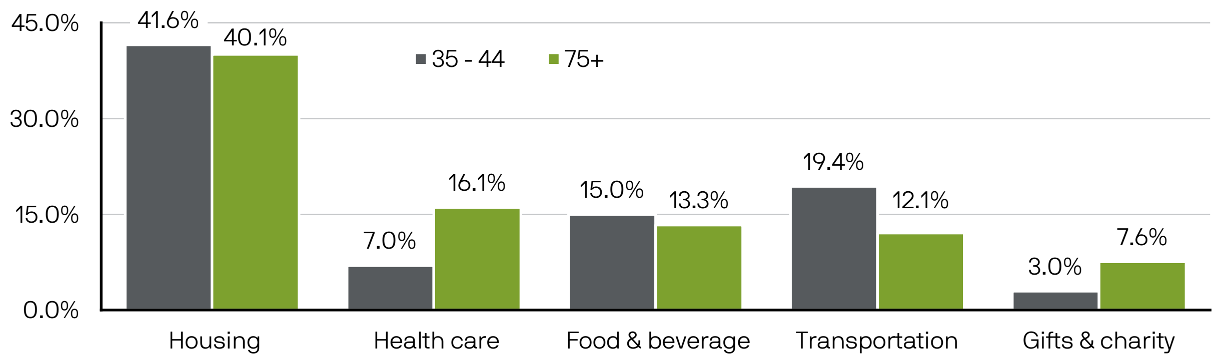
Annual average household spending by age



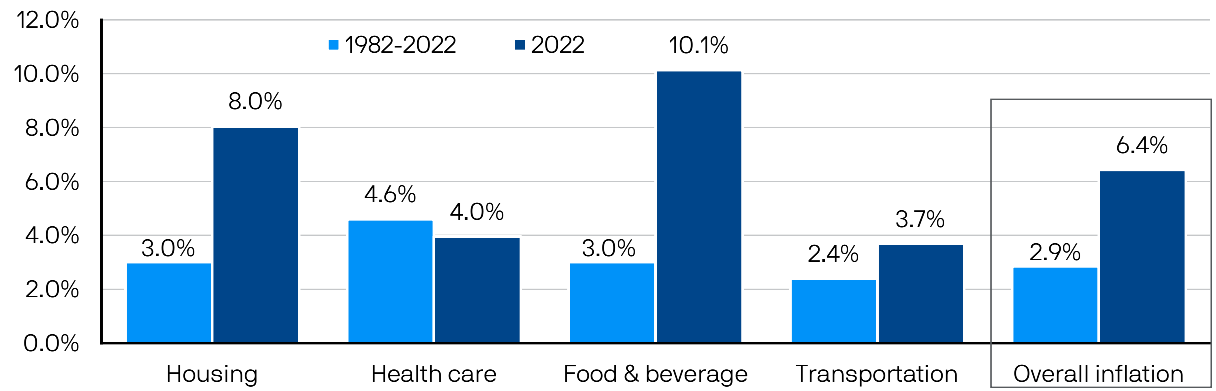
Source: J.P. Morgan Asset Management, based on internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, credit and debit card and electronic payment transactions from January 1, 2017 to November 30, 2022. Check and cash distribution: 2019 CE Survey; J.P. Morgan Asset Management analysis. Information that would have allowed identification of specific customers was removed prior to the analysis. Other includes: tax payments, insurance, gambling, personal care and uncategorized items. Asset estimates for de-identified and aggregated households supplied by IXI, an Equifax Company; estimates include all financial assets except employer-sponsored plans and do not include home equity. Additional information on J.P. Morgan Asset Management's data privacy standards available at https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/gtr-privdisc/. Retired households receive retirement income only, including Social Security, pension and/or annuity payments. Partially retired households receive both retirement income and labor income.

Spending and inflation

Average annual spending by age and category 2017-2021



Annual average inflation by spending category



Take a long-term view

Households may benefit from a long-term view of inflation and how spending may change over time.

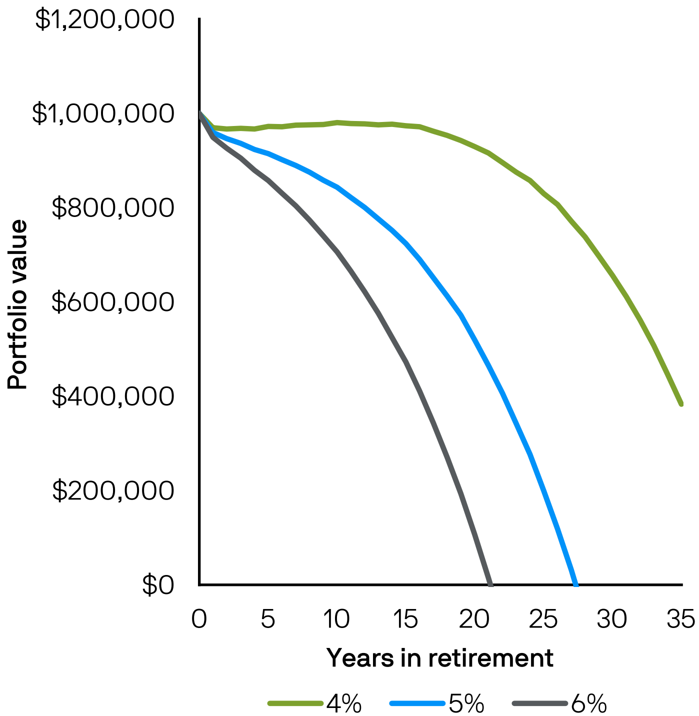
As a percentage of their spending, older households purchase more health care and gifts, but less food and transportation.

The spending categories shown are 89% of spending for households age 75+.

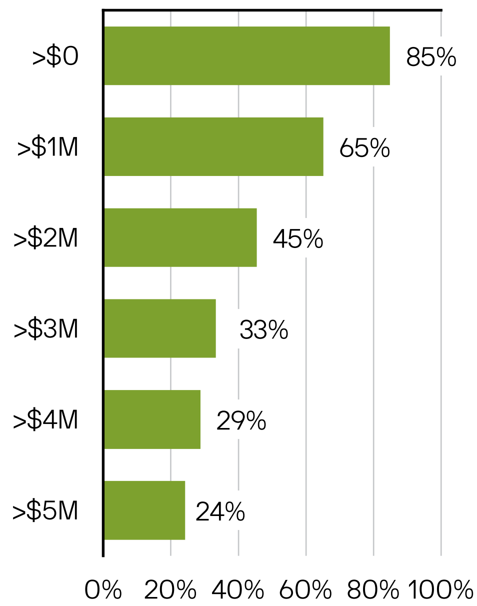
Source (top chart): Bureau of Labor Statistics (BLS), 2017-2021 annual average Consumer Expenditure Survey, adjusted to December 2022 dollars. Housing inflation includes imputed rent (the amount a household would pay to rent the house they own). Housing spending includes mortgage payments, rent, property taxes, maintenance, utilities and furnishings. Those who own their home outright or have low fixed mortgages may have a hedge against inflation. Additional spending categories for age 35 - 44 and 75+, respectively: entertainment 6% and 4%; other 4% and 4%; apparel 3% and 2%; education 2% and 1%.
Source (bottom chart): BLS, Consumer Price Index (all urban consumers, seasonally adjusted), J.P. Morgan Asset Management.

The 4% rule: projected outcomes vs. historical experience

40/60 portfolio at various initial withdrawal rates
Projected nominal outcomes, 80th percentile



Historical ending wealth at 4% initial withdrawal rate (1928-2022)
66 rolling 30-year periods



Good in theory, poor in practice

The 4% rule is the maximum initial withdrawal percentage that has a high likelihood of not running out of money after 30 years. With current life expectancies, a 35-year view is more appropriate.

The outcomes are sensitive to forward-looking return assumptions and the rule is not guidance on how to efficiently use your wealth.

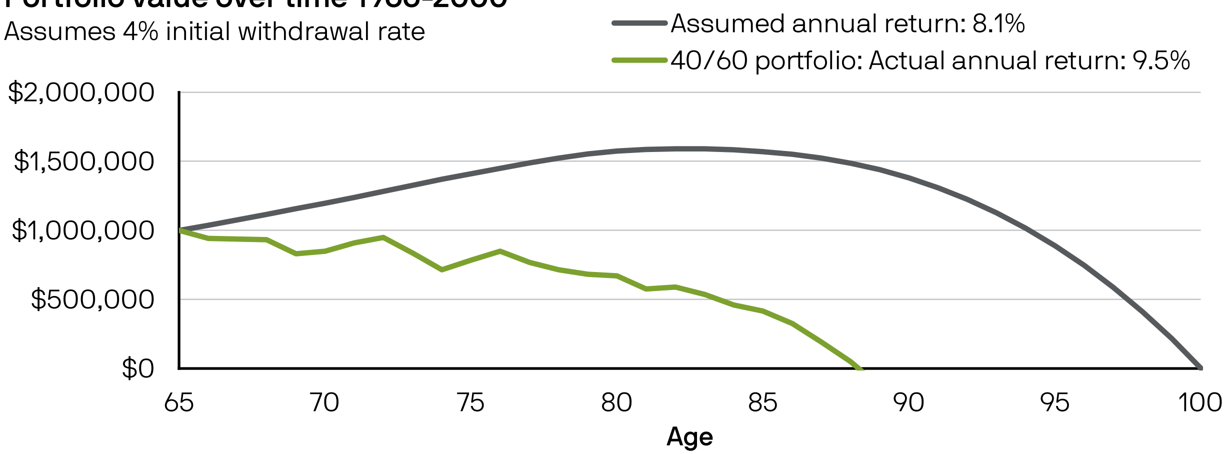
You may want to consider a dynamic approach that adjusts over time to more effectively use your retirement savings.

These charts are for illustrative purposes only and must not be used, or relied upon, to make investment decisions. Portfolios are described as equity/bond percentages (e.g., a 40/60 portfolio is 40% equities and 60% bonds).
Right chart: The portfolio returns for the historical analysis are calculated based on 40% S&P 500 Total Return and 60% Bloomberg U.S. Aggregate Total Return. Each portfolio's starting value is set at $1,000,000. Withdrawals are increased annually by CPI (CPI NSA Index). Ending wealth at the end of each 30-year rolling period is in nominal terms.
Left chart: The hypothetical portfolio assumes All Country World Equity and U.S. Aggregate Bonds. J.P. Morgan Asset Management's (JPMAM) model is based on proprietary Long-Term Capital Market Assumptions equilibrium returns. The resulting projections include only the benchmark return associated with the portfolio and do not include alpha from the underlying product strategies within each asset class. The yearly withdrawal amount is set as a fixed percentage of the initial amount of $1,000,000 and is then inflation adjusted over the period (2.5%). Allocations, assumptions and expected returns are not meant to represent JPMAM performance. Given the complex risk/reward trade-offs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations. References to future returns for either asset allocation strategies or asset classes are not promises or even estimates of actual returns a client portfolio may achieve.

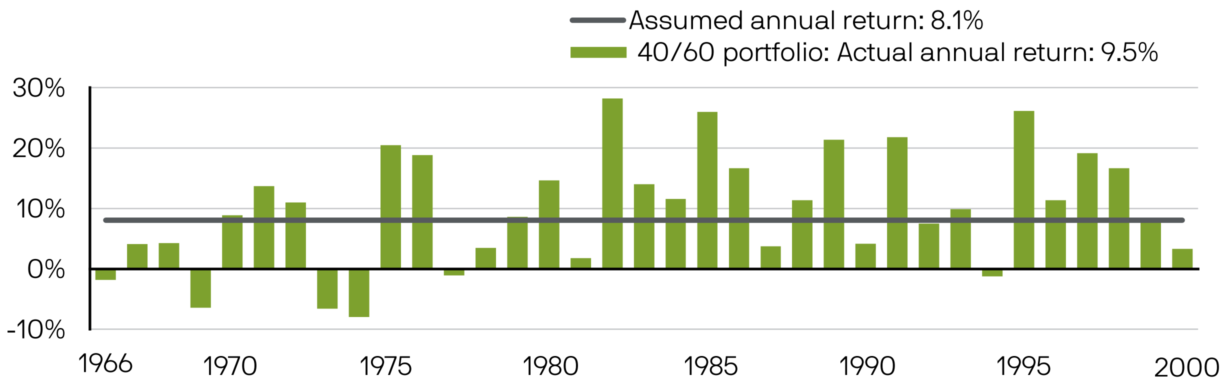
Dollar cost ravaging: timing risk of withdrawals

Portfolio value over time 1966-2000

Assumes 4% initial withdrawal rate



Rate of return: actual vs. average 1966-2000



Sequence of return risk

People retiring today are facing market headwinds. Experience from the late 1960s with rising inflation and rising interest rate offer relevant insights.[1]

Withdrawing assets in such a market early in retirement can ravage a portfolio. Consider investment solutions that incorporate downside protection such as:

- Greater diversification among non-correlated asset classes
- Investments that use options strategies for defensive purposes
- Annuities with guarantees and/or protection features

Assumptions (top chart): Retire at age 65 with $1,000,000 and withdraw 4% of the initial portfolio value ($40,000). Withdrawal amount increased by historical inflation (CPI-U) each year. Returns are based on a hypothetical portfolio, which is assumed to be invested 40% in the S&P 500 Total Return Index and 60% in the Bloomberg Capital U.S. Aggregate Index. The assumptions are presented for illustrative purposes only. They must not be used, or relied upon, to make investment decisions. There is no direct correlation between a hypothetical investment and the anticipated future return of an index. Past performance does not guarantee future results.

[1] Annual inflation (CPI-U) increased from 2.4% in 1996 to 6.3% in 1970; 10-year U.S. Treasury rate increased from 4.93% in 1966 to 7.35% in 1970.

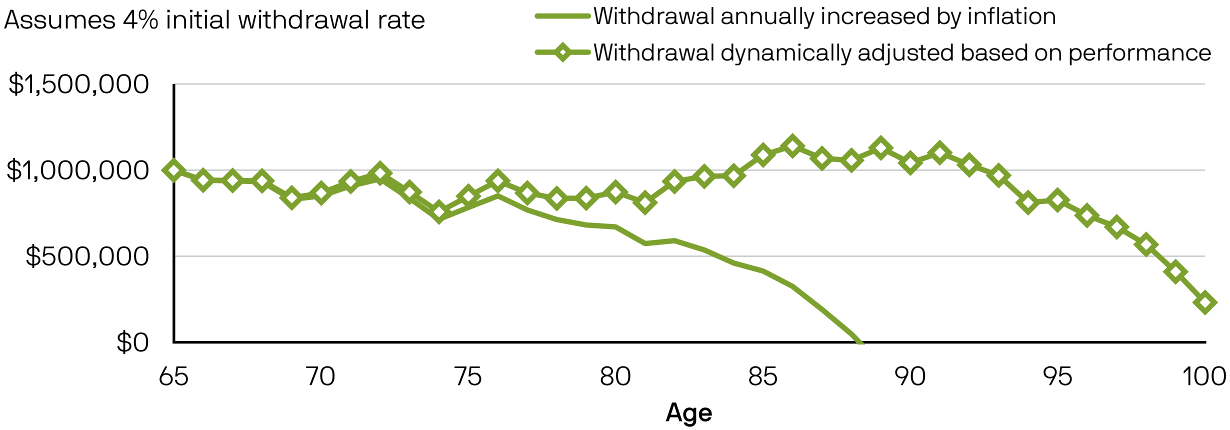
Source: J.P. Morgan Asset Management; U.S. Bureau of Labor Statistics; Department of the Treasury.

J.P.Morgan
ASSET MANAGEMENT

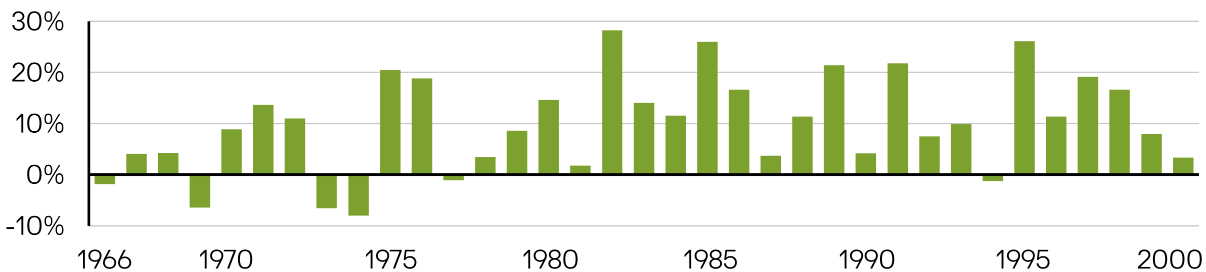
Mitigating dollar cost ravaging: dynamic spending

Portfolio value over time 1966-2000

Assumes 4% initial withdrawal rate



Rate of return: 40% equity/60% bond portfolio 1966-2000



Be flexible

Spending the same amount in retirement grown by inflation regardless of how your portfolio is performing can result in an unsuccessful outcome.

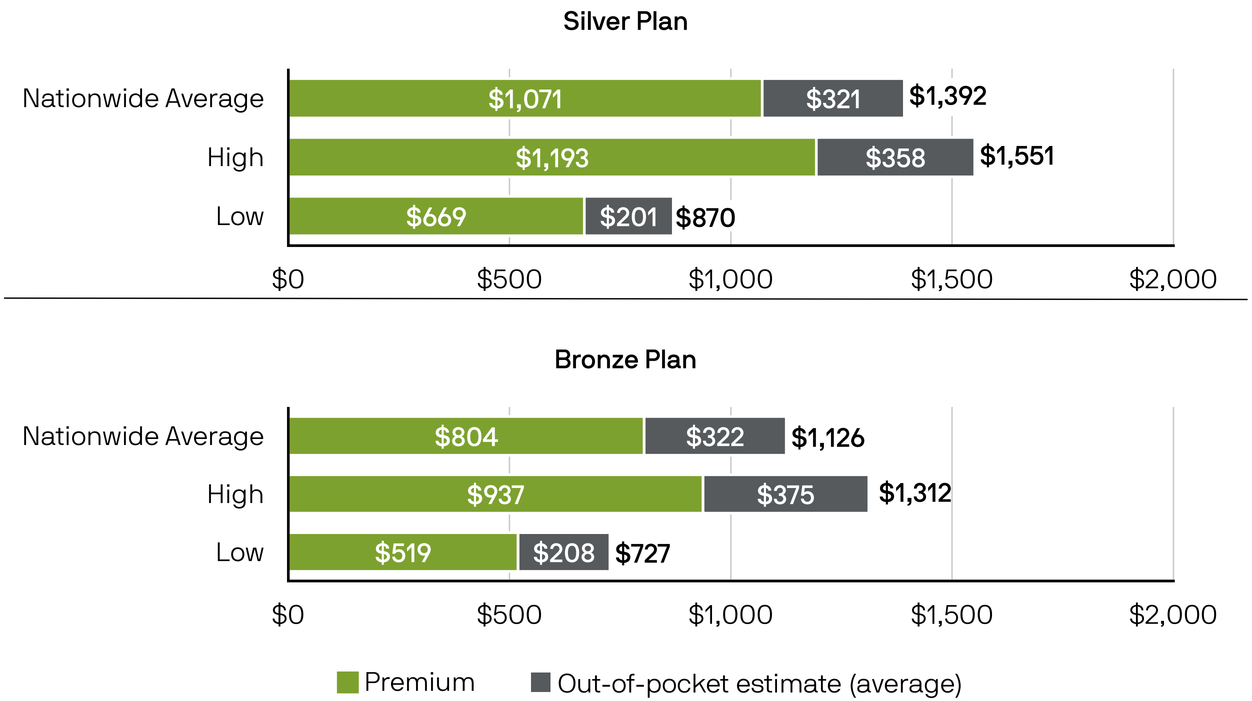
Consider adjusting your spending strategy based on market conditions to help make your money last and provide more total spending through your retirement years.

Assumptions (top chart): Retire at age 65 with $1,000,000 and withdraw 4% of the initial portfolio value ($40,000). Fixed withdrawal scenario assumes the withdrawal amount is increased by historical inflation (CPI-U) each year. Dynamic withdrawal scenario assumes that if the annual return on portfolio is: 1) less than 5%, withdrawal remains the same as the prior year; 2) between 5% and 10%, withdrawal is increased by actual inflation (CPI-U); 3) greater than 10%, withdrawal is increased by actual inflation+3%. While the dynamic withdrawal scenario during this historical period provided 25% more total spending in today's dollars, it is for illustrative purposes only and may not be successful during other time periods. Returns are based on a hypothetical portfolio, which is assumed to be invested 40% in the S&P 500 Total Return Index and 60% in the Bloomberg Capital U.S. Aggregate Index. The assumptions are presented for illustrative purposes only. They must not be used, or relied upon, to make investment decisions. There is no direct correlation between a hypothetical investment and the anticipated future return of an index. Past performance does not guarantee future results.
Source: J.P. Morgan Asset Management; U.S. Bureau of Labor Statistics; Department of the Treasury.

J.P.Morgan
ASSET MANAGEMENT

Health care costs for retirees before age 65

2023 Marketplace[1] plan monthly cost estimate per person: non-smoker, age 64



Cost will vary by geography and age. For your estimate:
https://www.kff.org/interactive/subsidy-calculator/

There are three types of plans: Bronze has the least coverage, Gold has the most coverage and Silver is in between.

You may qualify for a subsidy if the second lowest cost Silver Plan on the Affordable Care Act (ACA) Marketplace is more than 8.5% of your income.

If you do not qualify for a subsidy, Gold or Bronze plans or a Silver plan purchased directly from the insurer (not on the ACA Marketplace website) may be good options.

[1]Health insurance plans available through Healthcare.gov.
Not meant to be personal or tax advice. Does not include subsidies. In 2021 and 2022, premium subsidies were expanded per the American Rescue Plan Act (ARPA) and these were extended through 2025 in the Inflation Reduction Act (IRA) of 2022. A qualifying plan will allow you to make contributions to a Health Savings Account (HSA). When searching for a qualifying plan on the Marketplace website, look for the HSA eligible flag in the upper left-hand corner or use the filter option in the right-hand corner. Qualifying plans may provide less coverage; be sure to evaluate trade-offs, especially if you are eligible for a premium subsidy.

Source: Healthcare.gov, Kaiser Family Foundation subsidy calculator as of December 15, 2022, https://www.kff.org/interactive/subsidy-calculator/. Low costs shown above are for zip code 11217 in Brooklyn, New York, and high costs are for zip code 32320 in Apalachicola, Florida. Subsidy information from Kaiser Family Foundation website as of December 15, 2022.

Three steps for Medicare coverage

1 Sign up for Parts A and B on Medicare.gov

Part A: (inpatient hospital insurance)	+	Part B: (insurance that covers doctor visits, tests and outpatient hospital visits)

2 Choose your plan

Choose your plan	Insurance for out-of-pocket expenses related to Parts A & B	Drug coverage	Vision, dental and hearing coverage & other benefits
Option 1 **Original Medicare** accepted by all Medicare providers	✓ Sign up for Medigap (also called "supplemental")	✓ Choose a Part D plan	X Not included. You may buy a separate policy
Option 2 **Medicare Advantage/ Part C** limited to a network of providers	X Not included. Be prepared for variable costs	✓ Usually included	✓ Check details: benefits vary by plan

3 Prepare for additional expenses

- **Out-of-pocket drug expenses are not covered**
  - Need income or savings for these costs; costs can change as your health changes
- **Medicare does not cover most long-term care costs**
  - Custodial care for activities of daily living is not covered
  - Medicaid may pay for long-term care if you have few assets and low income[1]

For help, visit the Medicare Rights Center at www.medicarerights.org or your State Health Insurance Assistance Program (SHIP) at www.shiptacenter.org.

Medicare details

Individuals who have paid Medicare taxes for 10 years (and their spouses who are age 65 or older) are eligible for Medicare at age 65.

Enroll during your Initial Enrollment Period (3 months before and 3 months after your 65th birthday month) or face lifetime penalties.

Sign up the month before the month you turn age 65 to avoid coverage gaps.

Re-evaluate your choice during open enrollment October 15 through December 7 each year.

[1]Medicare does pay for medically necessary skilled nursing facility or home health care, with strict requirements that are difficult to meet on a limited basis, and for some hospice care. If you transfer assets to others there is a five-year "look back" where the government will recover the assets transferred if you go on Medicaid. This is not personal advice. Consult an elder care attorney if you have questions.
Source: Medicare.gov as of December 31, 2022; J.P. Morgan Asset Management analysis.

65 and working: should I sign up for Medicare?

Assumes adequate employer coverage and qualification for Medicare at age 65[1]

START HERE

Check with your employer: Do you have creditable coverage for major medical and drugs?[2]

Y / N

Do you contribute to a Health Savings Account (HSA)?

Y / N

Have you filed or will you file for Social Security benefits within 6 months?

Y / N

Sign up for Medicare and stop monthly HSA contributions[3]

- Enroll in Medicare the month before the month you turn 65 to avoid gaps in coverage.
- Stop monthly HSA contributions to avoid tax penalties.

Sign up for Part A

- Part A is free for people who paid payroll taxes for 40 quarters (10 years) and employer coverage is usually primary.
- If you want to contribute to an HSA in the future, do not sign up for Social Security benefits and disenroll from Part A.[3]

Do not sign up for Medicare

- HSA contributions while on Medicare will result in tax penalties.[4]

Stop HSA contributions and opt out of Medicare Part B

- Once you start Social Security benefits, you will automatically be enrolled in Part A, retroactive to the lesser of six months or age 65.
- Tax penalties apply if you are enrolled in Part A and contribute to an HSA.[4] Contact Medicare.gov to opt out of Part B.

Avoid coverage gaps and penalties

Creditable coverage is key. Late enrollment penalties will apply if you do not have creditable coverage and do not sign up in your enrollment window (3 months before to 3 months after your 65th birthday month).

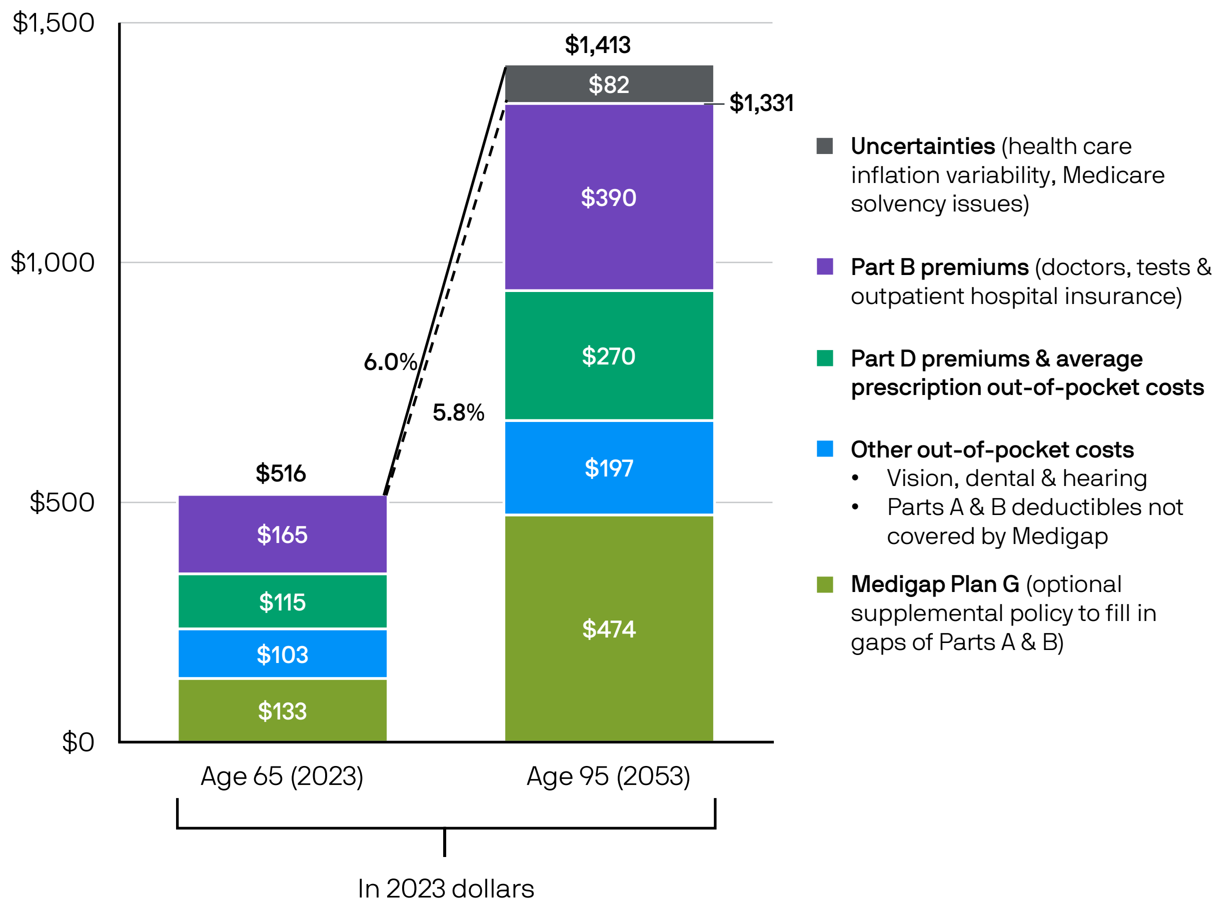
COBRA coverage (a temporary extension of major medical employer coverage when work stops) is not creditable, although some extended prescription coverage may be creditable (ask for documentation).

[1]Assumes Part A is no cost (generally for people who paid payroll taxes for 40+ quarters or are married to a beneficiary who did so). Some individuals may choose to sign up for Part A and Part B earlier than shown if they want additional coverage.
[2]Ask your employer for documentation of creditable coverage for major medical and for drug coverage. Employer coverage for less than 20 people is usually not creditable and will end at age 65 or become secondary after Medicare has paid.
[3]To disenroll you must have an interview with the Social Security Administration and use Form CMS 1763. When you sign up for Part A again or sign up for Social Security, coverage may be retroactive for up to 6 months. You will be unable to disenroll if you are receiving Social Security.
[4]Total HSA contributions for the year in excess of the maximum contribution for the year divided by the number of months you are eligible to make contributions will result in tax penalties (6% of the excess contribution each year). This is not intended to be individual tax advice; consult your tax professional.
For more information, see www.mymedicarematters.org/enrollment/am-i-eligible, sponsored by the National Council on Aging.
Source: IRS Publication 969, National Council on Aging and Medicare.gov websites as of December 31, 2022; J.P. Morgan Asset Management analysis.

Rising health care costs in retirement

Original Medicare costs in retirement (in 2023 dollars)

Monthly amount per person



A growing concern

Annual expenses per person in 2023 are $6,192.

Given variation in health care cost inflation from year to year, it may be prudent to assume an annual health care inflation rate of 6.0%, which may require growth as well as current income from your portfolio in retirement.

Estimated future value total average monthly cost at age 95 is $2,965. Today's dollar calculation used a 2.5% discount rate to account for overall inflation. Medigap premiums typically increase with age, in addition to inflation, except for the following states: AR, CT, MA, ME, MN, NY, VT, WA. For local information, contact the State Health Insurance Assistance Program (SHIP) https://www.shiptacenter.org/. Plan G premium is nationwide average for non-smokers. If Plan G is not available, analysis includes the most comprehensive plan available.
Source: HealthView Services proprietary data file received January 2023 used by permission.

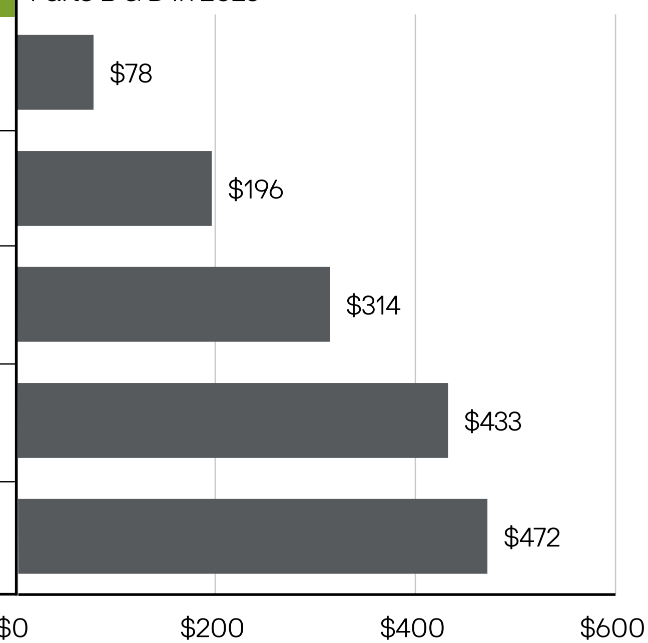
2023 monthly Medicare surcharges

The surcharge amount is the same for all income levels within a band

If you go over a threshold, you pay the additional premium for that band

Modified Adjusted Gross Income based on 2021 tax year filing[1]	
Filing single	Filing jointly
$97,001 - $123,000	$194,001 - $246,000
$123,001 - $153,000	$246,001 - $306,000
$153,001 - $183,000	$306,001 - $366,000
$183,001 - $499,999	$366,001 - $749,999
$500,000 or more	$750,000 or more

Additional monthly premium amount per person
Parts B & D in 2023



Surcharge details

There may be a bigger impact for singles and surviving spouses: Medicare surcharge thresholds for singles are half of the thresholds for couples.

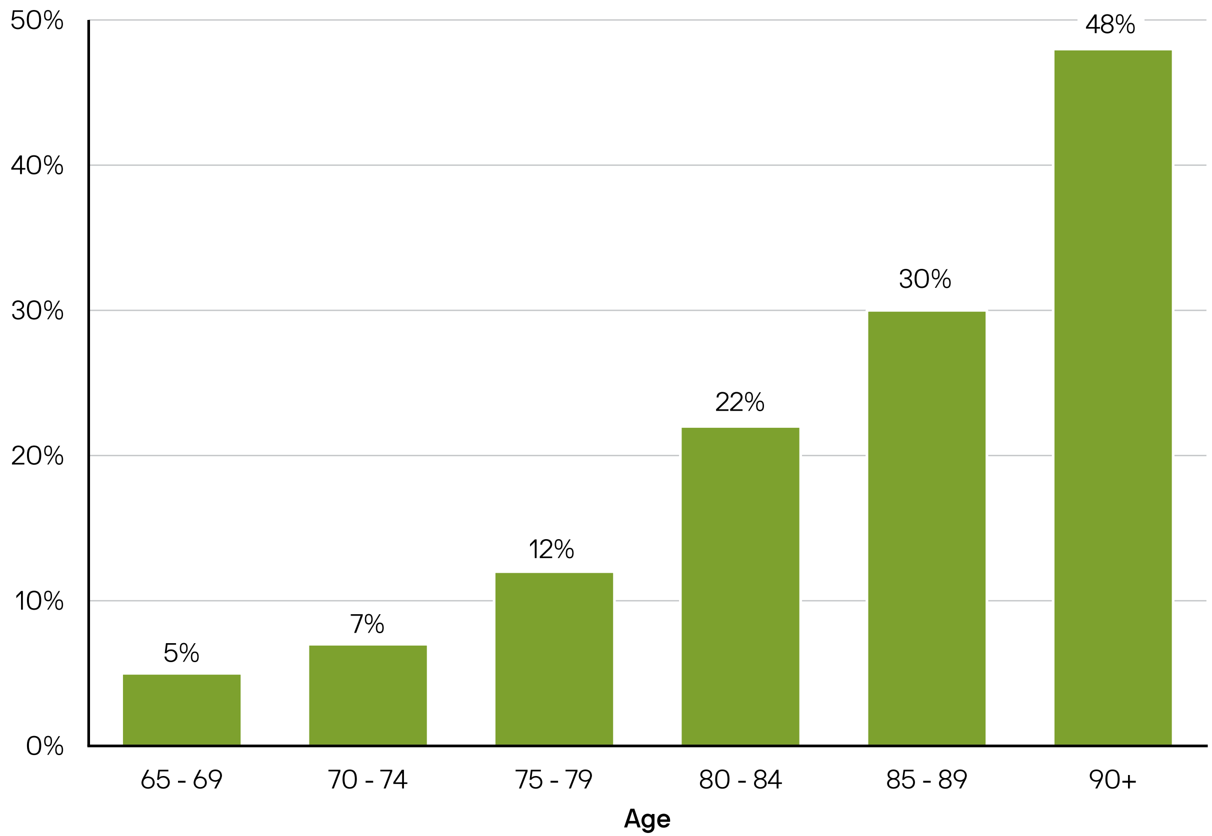
Couples are less likely to be affected unless they have significant pensions, work or rental income.

Filing an appeal?
If you have stopped work or you have lower income due to circumstances outside of your control, you might be eligible for an appeal. See form SSA-44 for details: https://www.ssa.gov/forms/ssa-44-ext.pdf

[1]The Social Security Administration uses the most recent federal return supplied by the IRS. If you amended your return in a way that changes your surcharge amount, you may need to contact your Social Security office.
Source: Medicare.gov as of December 1, 2022.
This is not meant to be personal tax advice. Please consult your tax professional for specifics for your situation. Modified Adjusted Gross Income (MAGI) for purposes of calculating Medicare surcharges is Adjusted Gross Income (AGI) plus tax-exempt interest income. Thresholds increase each year with inflation starting in 2020, except the top threshold, which was added in 2019; this top threshold is set to annually inflate starting in 2028.

Disability incidence increases with age

Percentage of age 65+ population who need assistance with two or more activities of daily living or have severe cognitive impairment



Spending may shift to long-term care needs at older ages

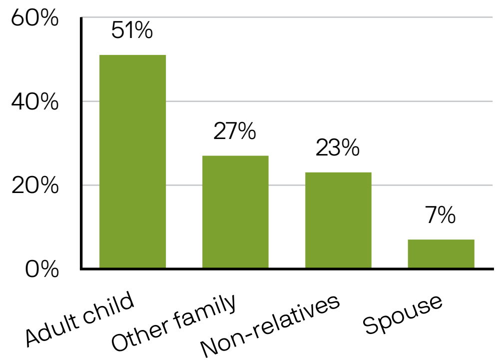
Nearly half of those who survive to the oldest ages meet the definition of having long-term care needs. While it is encouraging that the other half of this population does not meet the criteria, some of these individuals may require at least some assistance.

Changing abilities may require spending on long-term care services, a move to be closer to children, home modifications or a different housing arrangement.

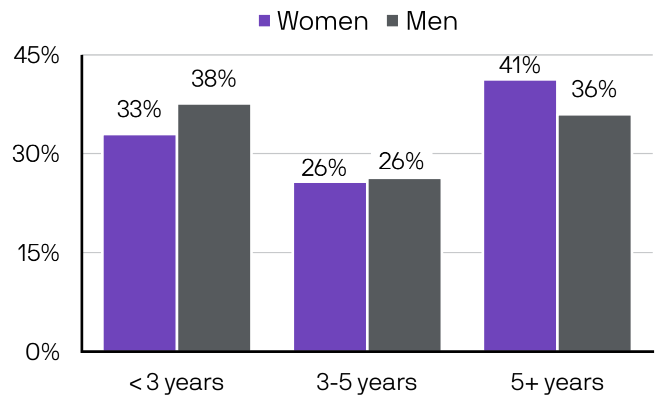
HIPPA qualifying long-term care includes needing help with two or more activities of daily living such as eating, dressing, bathing, transferring and toileting or severe cognitive impairment for at least 3 months.
Source: Spillman, Brenda C., Allen, Eva H., and Melissa Favreault. 2021: Informal Caregiver Supply and Demographic Changes: Review of the Literature. Urban Institute report to the Department of Health and Human Services, Assistant Secretary for Planning and Evaluation, Office of Behavioral Health, Disability, and Aging Policy, December 2020. Located at https://aspe.hhs.gov/reports/informal-caregiver-supply-demographic-changes-review-literature. Derived from data from Figure 2, National Health and Trends Study (NHATS) 2015 data.

Long-term care planning

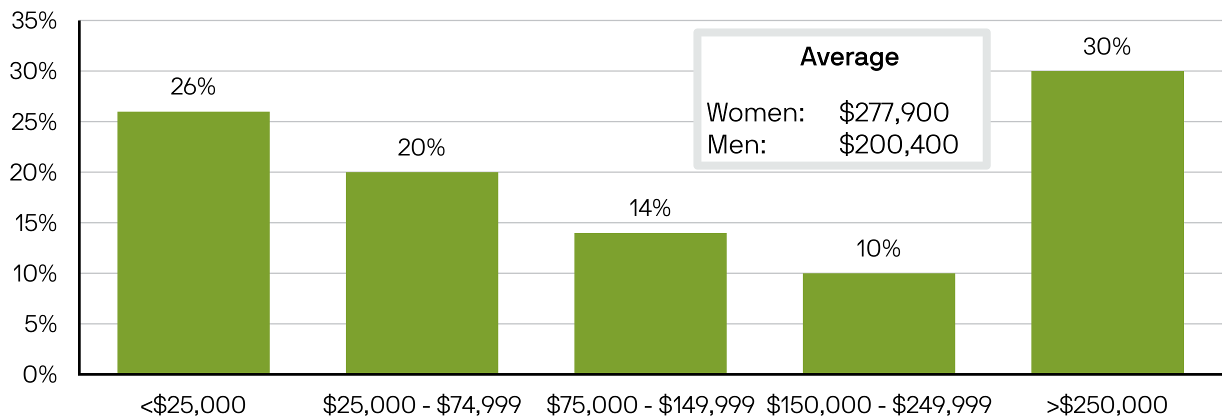
Providers of unpaid eldercare



Duration of paid care 65+ if paid care is used



Lifetime cost of care 65+ if paid care is used



Create a care plan

The monetary value of care from family and friends is roughly equal to paid care.[1] An adult child caring for a parent is seven times more likely than an individual providing care for their spouse.

Women are more likely to require care and need more years of paid care if paid care is used.

A care plan may help you avoid burdening others, ensure your family understands your wishes and allow you to have more control over your care.

[1]Average value of unpaid care when unpaid care is used is $208,800 for women and $196,800 for men.
Long-term care includes needing help with two or more activities of daily living such as eating, dressing, bathing, transferring, and toileting or severe cognitive impairment. Average of cost is in 2020 dollars and includes all payors.
Source: U.S. Department of Health and Human Services, APSE Brief, August 2022, Long-term Services and Supports for Older Americans, Risks and Financing, 2022; Retirement Security, Some Parental and Spousal Caregivers Face Financial Risk, May 2019, Figure 1. Latest data available as of December 31, 2022.

Long-term care planning options

Consider utilizing more than one option

Family
Family and friends may provide some assistance or help coordinate care

Savings
Savings may fund paid care; some expenses such as travel may go down

Insurance
Options include traditional long-term care insurance, combination life and annuity products, life insurance for a surviving spouse and deferred annuities for income late in life

Life plan communities
Also known as Continuing Care Retirement Communities, this option starts with independent living and offers additional services or facilities when needed (costs and services vary).[2] More information: https://www.mylifesite.net/

Home equity
Second homes may be sold; the home equity in your primary residence may be used if your other options are limited; credit availability and home values may fluctuate

Medicaid:

After exhausting other options

Rules to qualify vary by state but generally you must be low income with few assets to qualify[1]

Start planning early

- Will you want to move closer to your family?
- If insurance affordability is an issue, is it feasible to buy less coverage and combine it with other solutions?
- Are you saving in a Health Savings Account (HSA)? HSAs may be used tax free for qualified expenses or after tax without penalty after age 65 for non-qualified expenses.[3]
- If you want care at home, consider how you will remain socially connected and the potential costs of doing so.

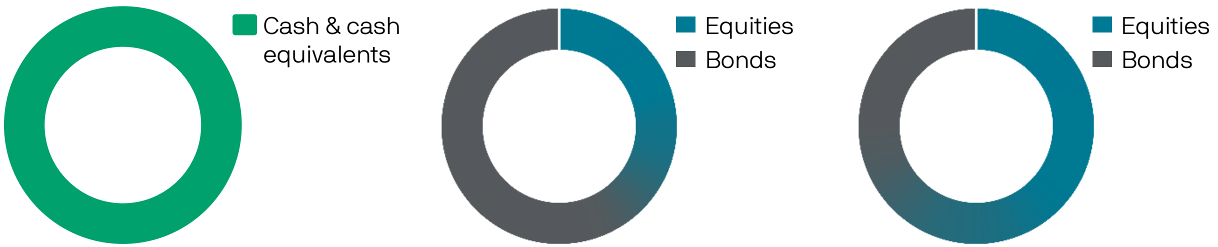
[1]If you transfer assets to others, there is a five-year “look back” where the government will recover the assets transferred if you go on Medicaid. This is not personal advice; consult an elder care attorney if you have questions about Medicaid, Medicaid qualifications and look-back rules.
[2]There are about 1,900 Life Plan Communities (LPCs) in the United States according to Zeigler and Company.
[3]HSAs may be used to fund qualified traditional long-term care policy premiums up to certain limits. Necessary home improvements may qualify if they don’t improve the value of your home. Services for chronically ill individuals who are unable to perform two or more activities of daily living or who have severe cognitive impairment may be qualified if they are part of a prescribed plan from a licensed practitioner. For a list of qualified expenses, see IRS Publication 502 or consult your tax professional; this is not meant to be personal tax advice.
Source: J.P. Morgan Asset Management, latest available data as of December 31, 2022.

Goals-based wealth management

Short-term goals
Includes an emergency reserve

Medium-term goals
5-10 years, e.g., college, home

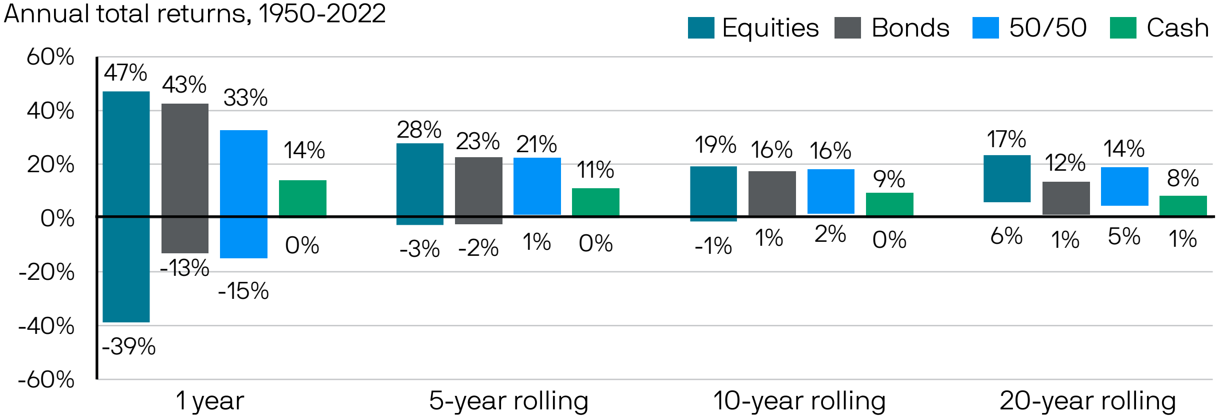
Long-term goals
15+ years, e.g., retirement



Divide and conquer

Aligning your investment strategy by goal can help you take different levels of risk based on varying time horizons and make sure you are saving enough to accomplish all of your goals – not just the ones that occur first.

Range of stock, bond and blended total returns
Annual total returns, 1950-2022



Source (top chart): J.P. Morgan Asset Management.
Source (bottom chart): Bloomberg, FactSet, Federal Reserve, Robert Shiller, Strategas/Ibbotson, J.P. Morgan Asset Management.
Returns shown are based on calendar year returns from 1950 to 2022. Stocks represent the S&P 500 Shiller Composite and Bonds represent Strategas/Ibbotson for periods from 1950 to 2010 and the Bloomberg Aggregate thereafter. Cash represents the U.S. 90 Day Treasury Bill Total Return.
Portfolio allocations are hypothetical and are for illustrative purposes only. They were created to illustrate different risk/return profiles and are not meant to represent actual asset allocation.

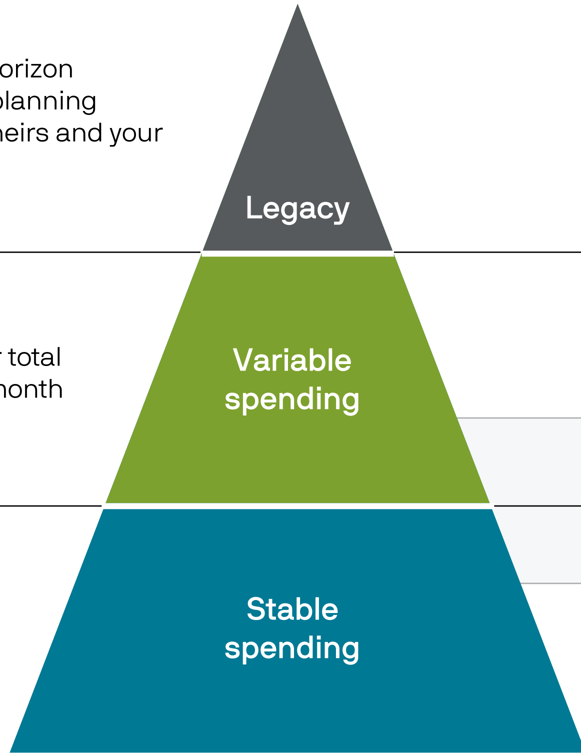
Structuring a portfolio to match investor goals in retirement

Considerations

What is the time horizon and appropriate planning strategy for your heirs and your estate goals?

How much of your total spending **varies** month to month?

How much do you **regularly spend** each month?



Potential solutions

- Growth-oriented portfolios
- Capital preservation strategies
- Alternatives*

- Cash and cash equivalents

Income distributed from:
- Dividend-paying stocks/funds
- Fixed income securities/funds
- Multi-asset solutions

- Protected lifetime income
- Pension
- Social Security

Building your plan

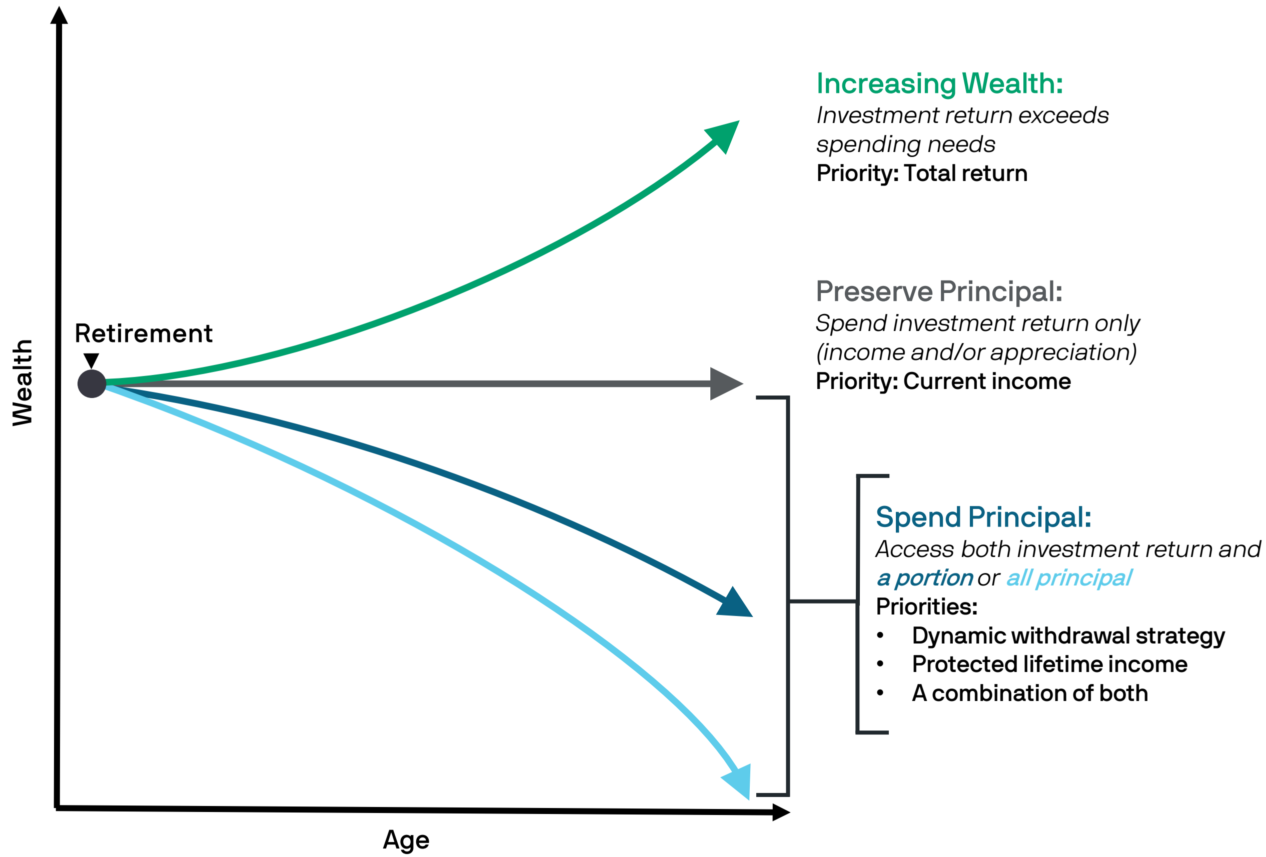
It may be useful to match dependable income sources with regular retirement spending, while coordinating income-oriented solutions and a cash reserve to meet more variable expenses.

For illustrative purposes only. Fixed income is subject to interest rate risk. Fixed income prices generally fall when interest rates rise. The price of equity securities may rise or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. Investing in alternative assets involves higher risks than traditional investments and is suitable only for the long term. They are not tax efficient and have higher fees than traditional investments. They may also be highly leveraged and engage in speculative investment techniques, which can magnify the potential for investment loss or gain.
*Equity, fixed income and cash are considered "traditional" asset classes. The term "alternative" describes all non-traditional asset classes. They include private and public equity, venture capital, hedge funds, real estate, commodities, distressed debt and more.
Source: J.P. Morgan Asset Management.

Align your portfolio with your goals

Investing

Retirement investable wealth profiles and diversified portfolio priorities



Identify sources of income in retirement

Retirement can mean several goals for your portfolio – current income, growth, sustainable withdrawals and/or protected income.

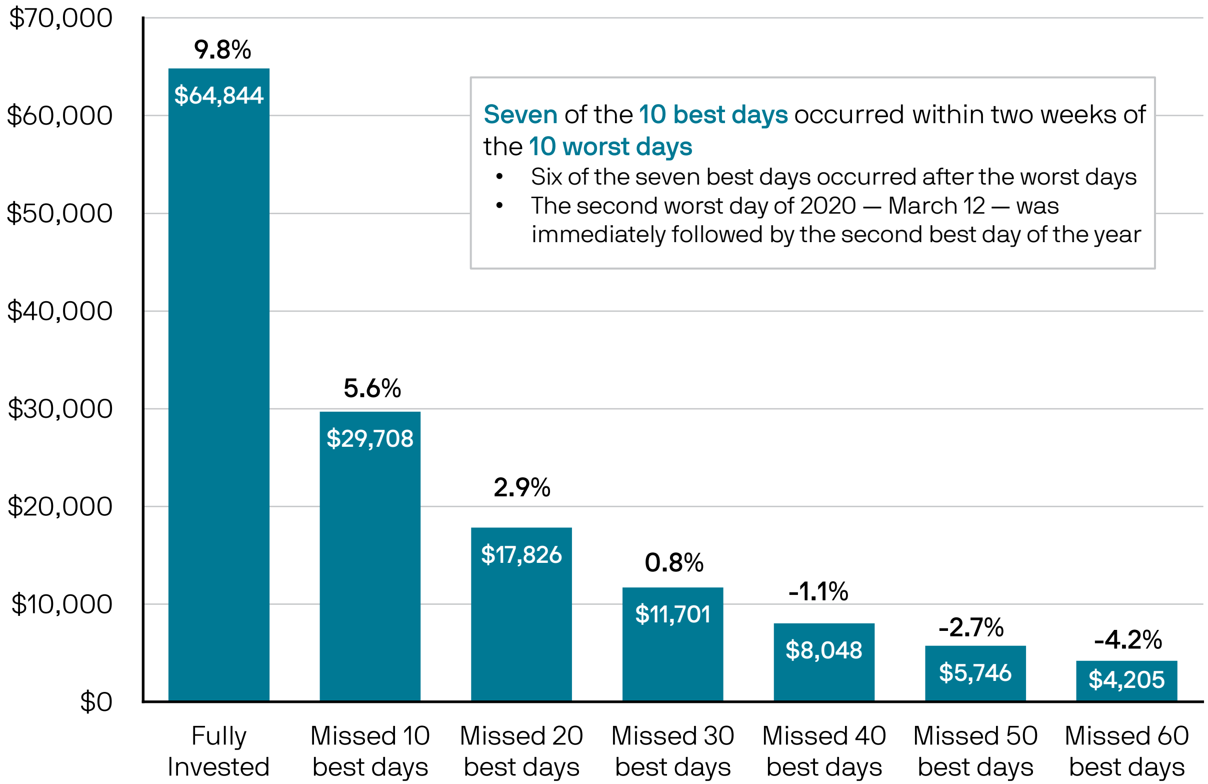
To find the right balance, identify your desired sources of income in retirement and align your plan and portfolio accordingly.

Source: J.P. Morgan Asset Management; Minney, Aaron. "Adding Direction to the Consumption Rate in Retirement." Journal of Retirement, Summer 2017, page 108.

Impact of being out of the market

Returns of the S&P 500

Performance of a $10,000 investment between January 1, 2003 and December 30, 2022



Plan to stay invested

Losses hurt more than gains feel good. Market lows can result in emotional decision making.

Taking "control" by selling out of the market after the worst days is likely to result in missing the best days that follow. Investing for the long term in a well-diversified portfolio can result in a better retirement outcome.

Source: J.P. Morgan Asset Management analysis using data from Bloomberg. Returns are based on the S&P 500 Total Return Index, an unmanaged, capitalization-weighted index that measures the performance of 500 large capitalization domestic stocks representing all major industries. Indices do not include fees or operating expenses and are not available for actual investment. The hypothetical performance calculations are shown for illustrative purposes only and are not meant to be representative of actual results while investing over the time periods shown. The hypothetical performance calculations are shown gross of fees. If fees were included, returns would be lower. Hypothetical performance returns reflect the reinvestment of all dividends. The hypothetical performance results have certain inherent limitations. Unlike an actual performance record, they do not reflect actual trading, liquidity constraints, fees and other costs. Also, since the trades have not actually been executed, the results may have under- or overcompensated for the impact of certain market factors such as lack of liquidity. Simulated trading programs in general are also subject to the fact that they are designed with the benefit of hindsight. Returns will fluctuate and an investment upon redemption may be worth more or less than its original value. Past performance is not indicative of future returns. An individual cannot invest directly in an index. Data as of December 31, 2022.

Tax implications for retirement savings by account type

	Contributions[1]	Investment growth	Withdrawals
Pre-tax 401(k) / Traditional IRA	+	+	− (Taxed as ordinary income)
Roth 401(k) / Roth IRA	−	+	+ (For qualified withdrawals)
After-tax 401(k) / non-deductible Traditional IRA	−	+	− (Investment returns taxed as ordinary income)
Health Savings Account (HSA)[3]	+	+	+ (For qualified health care expenses)

Retirement accounts: Taxes generally apply to contributions or withdrawals. Most withdrawals must be qualified to avoid tax penalties.[2]

If not used for qualified health care expenses, withdrawals after age 65 will be taxed as ordinary income (without penalty).

+ Preferential tax treatment   − Subject to taxes

Federal taxes; states may differ. This is not intended to be individual tax advice. Consult your tax professional.
[1]Income and other restrictions may apply to contributions. Tax penalties usually apply for early withdrawals. Qualified withdrawals are generally those taken over age 59½; qualification requirements for amounts converted to a Roth from a traditional account may differ; for some account types, such as Roth accounts, contributions that are withdrawn may be qualified. See IRS Publications 590 and 560 for more information. [2]Withdrawals from after-tax 401(k) and non-deductible IRAs must be taken on a pro-rata basis including contributions and earnings growth. For non-deductible IRAs, all Traditional IRAs must be aggregated when calculating the amount of pro-rata contributions and earnings growth. [3]There are eligibility requirements. Qualified medical expenses include items such as prescriptions, teeth cleaning and eyeglasses and contacts for a medical reason. Cosmetic procedures, such as teeth whitening, and general health improvement, such as gym memberships and vitamins, are not qualified expenses. A 20% tax penalty applies on non-qualified distributions prior to age 65. After age 65, taxes must be paid on non-qualified distributions. See IRS Publication 502 for details.
Source: J.P. Morgan Asset Management.

Prioritizing long-term retirement savings

Prioritizing savings

- 9 Taxable account
- 8 IRA[3]
- 7 Pay down lower interest loans (such as student loans with interest < 7.0%)[2]

Maximize contribution

- 6 Additional Defined Contribution savings
- 5 Additional HSA (Health Savings Account)[1]
- 4 Pay down higher interest loans (such as credit card debt / student loans with interest > 7.0%)[2]

Maximize employer match

- 3 Defined Contribution savings to maximize employer match (if available)
- 2 HSA (Health Savings Account) if eligible for match[1]

Start here

- 1 Emergency reserve (see "Annual emergency reserves" on slide 49)

Getting started

Start with emergency savings to weather spending and income shocks throughout the year and make sure to take advantage of employer matching funds if they are available.

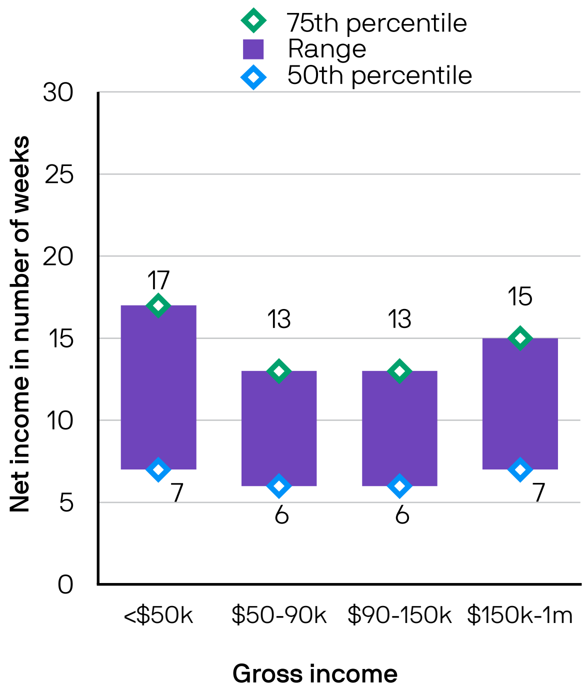
An HSA offers triple tax benefits if used for qualified medical expenses in retirement. Prioritize contributions to an HSA before a Defined Contribution plan if current medical expenses can be funded from low-cost sources.[4]

[1]Must have a high-deductible health insurance plan that is eligible to be paired with an HSA. Those taking Social Security benefits age 65 or older and those who are on Medicare are ineligible. Tax penalties apply for non-qualified distributions prior to age 65; consult IRS Publication 502 or your tax professional.
[2]This assumes that a diversified portfolio may earn 7.0% over the long term. Actual returns may be higher or lower. Generally, consider making additional payments on loans with a higher interest rate than your long-term expected investment return.
[3]Income limits may apply for IRAs. If ineligible for these, consider a non-deductible IRA or an after-tax 401(k) contribution. Individual situations will vary; consult your tax professional.
[4]Examples of low-cost funding sources include cash and current income.
Source: J.P. Morgan Asset Management analysis. Not intended to be a personal financial plan.

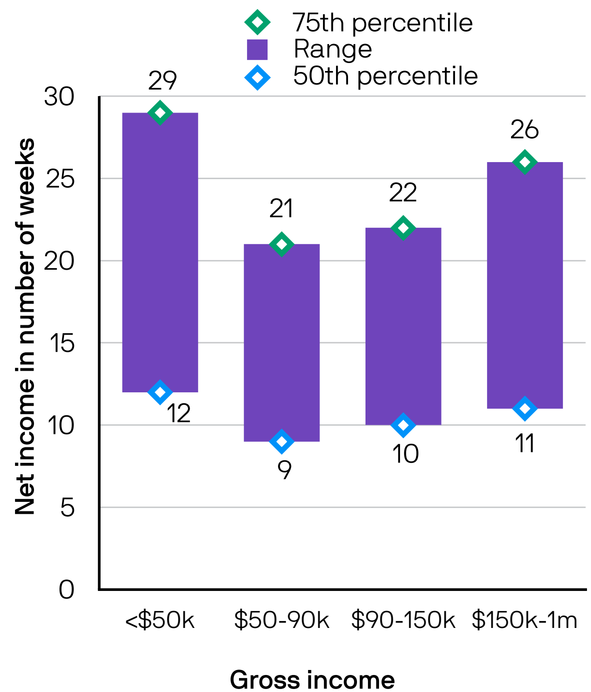
Annual emergency reserves

Net income in weeks needed to weather spending and income shocks

Workers (age 25-64)



Retirees (age 65+)



Prepare for uncertainties in life

Life is uncertain – spending shocks and/or job losses can happen at anytime. Emergency savings can help pay for these uncertainties and keep retirement savings intact.

Workers typically encounter spending shocks more frequently (about once every three months) than income shocks (about once a year).

- Consider setting aside 2-3 months of pay

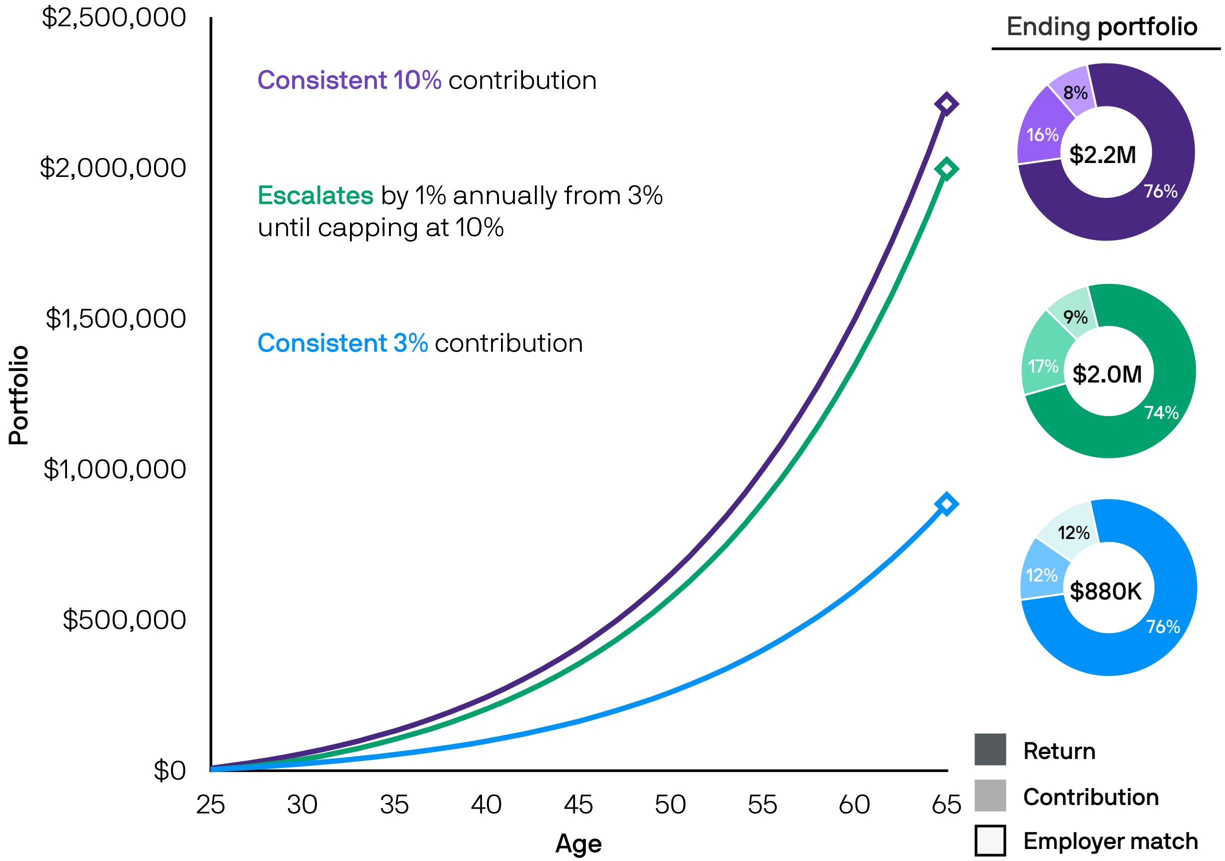
Retirees encounter more spending shocks in larger amounts than workers, likely due to unpredictable costs such as health care.

- Consider setting aside 3-6 months of income

Source: J.P. Morgan Asset Management analysis, 2022; longitudinal Chase data (2017-2019) of those households with monthly income, which may include wage income, unemployment, etc. Chase data includes internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, cash, credit and debit card and electronic payment transactions from January 1, 2017 to December 31, 2019. Additional information on J.P. Morgan Asset Management's data privacy standards available at https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/gtr-privdisc/. Spending shocks are calculated monthly and include those months when monthly spending is 25% above the previous 12 months' median spending and the 25% excess spending amount could not be funded by that month's income. Income shocks are calculated monthly and include those months when monthly income is 25% less than the previous 12 months' median income and that month's spending amount could not be funded by the reduced income.

The benefits of auto-escalation

Account growth from contributions, employer match and investment returns



Model assumptions

Start age: **25**

Retirement age: **65**

Starting salary: **$50,000**

Wage growth: **2.5%**

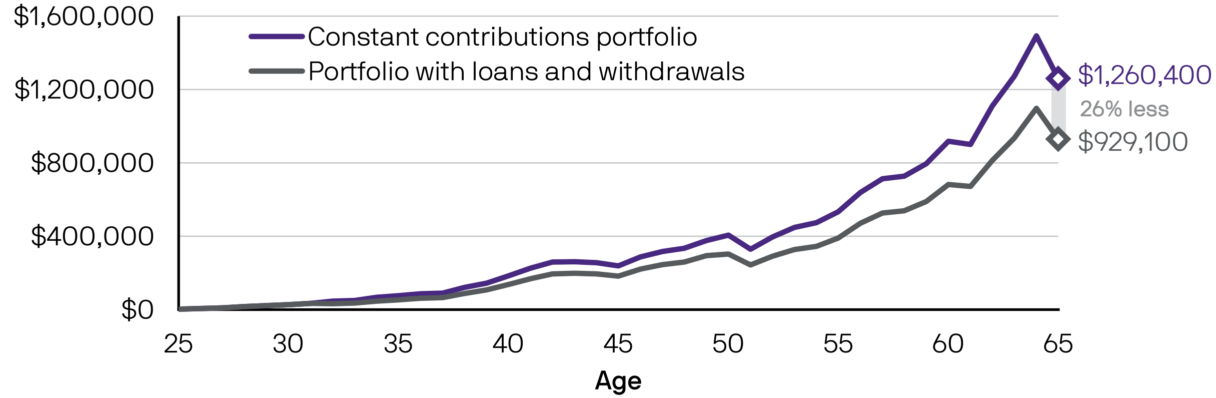
Assumed annual employer match: **100% of employee contribution up to 5%**

Investment return: **7.0%**

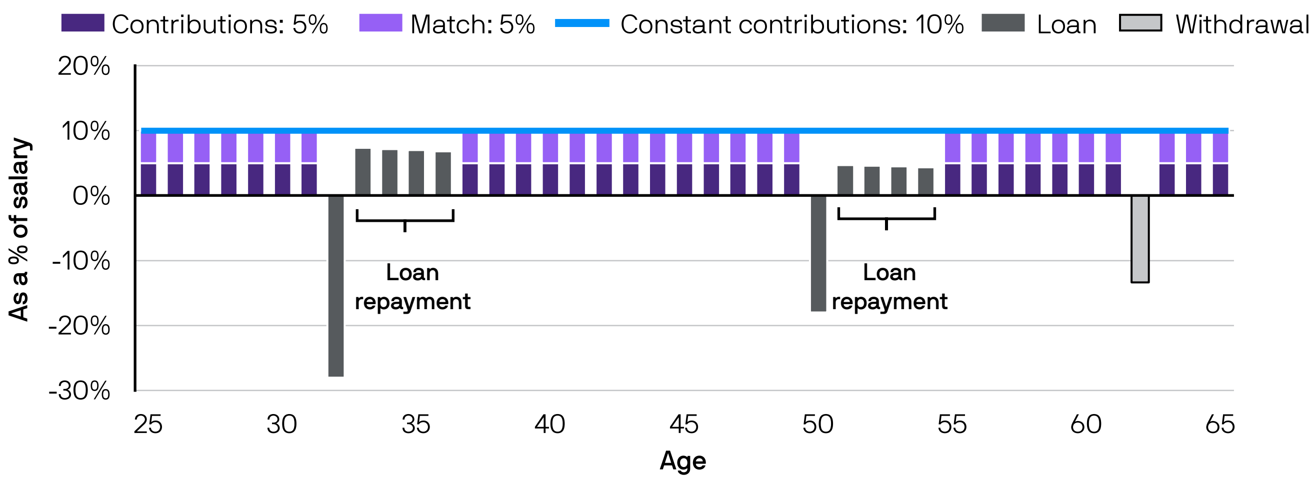
Individual is assumed to retire at the end of age 65. Growth of portfolio is tax deferred; ending portfolio may be subject to tax. The above example is for illustrative purposes only and not indicative of any investment.
Source: J.P. Morgan Asset Management, Long-Term Capital Market Assumptions.

The toxic effect of loans and withdrawals

Growth of 401(k) investment



Assumed cash flows: 401(k) contributions, loans and withdrawals



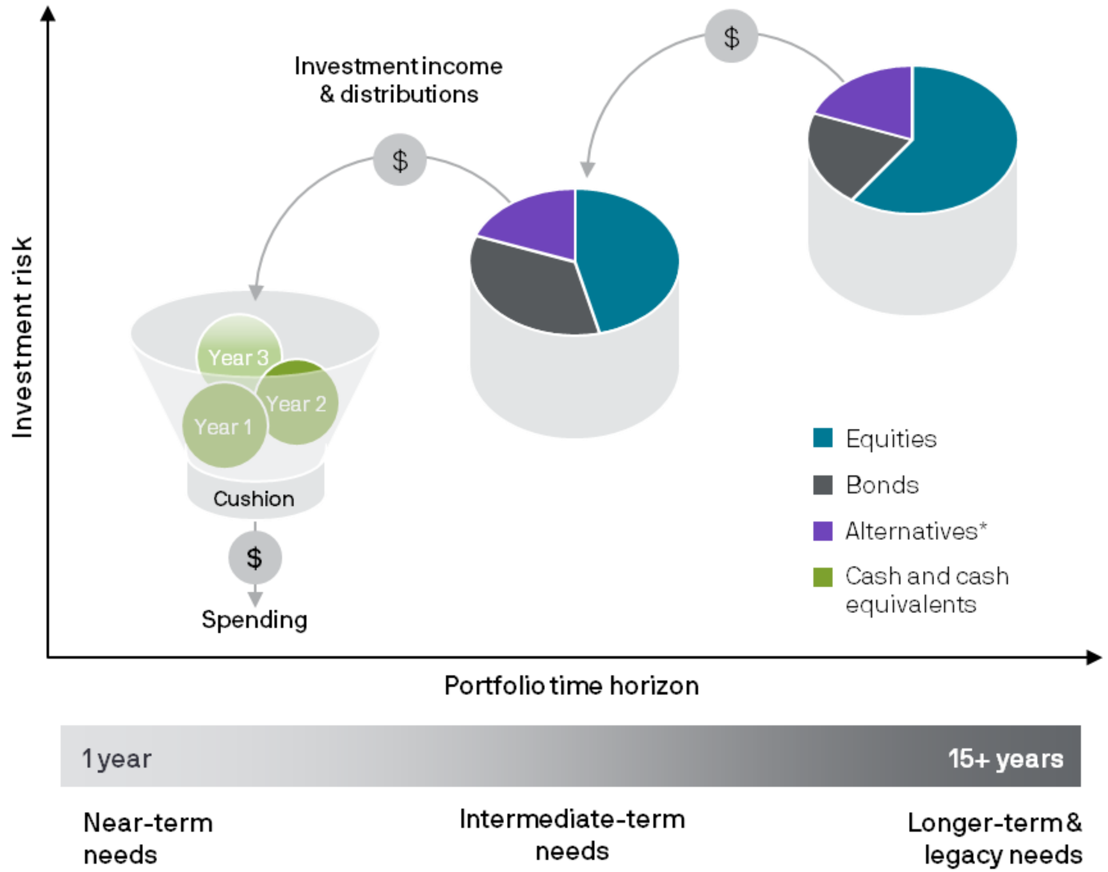
Mitigate the effects of loans

If taking a loan from your 401(k) is unavoidable, try to mitigate the impact by continuing contributions while repaying the loan. It is especially important to ensure you continue to receive an employer match, if available.

Source: J.P. Morgan Asset Management. For illustrative purposes only. Hypothetical portfolio is assumed to be invested 60% in the S&P 500 and 40% in the Bloomberg Capital U.S. Aggregate Index from 1982 to 2022. Starting salary of $30,000 increases by 2.5% each year. Loan and withdrawal amounts are assumed to be $10,000. Loan interest rate is assumed to be 7.5% and is paid off over 4 years.

Investing

Structuring a portfolio in retirement: the bucket strategy



Time-based segmentation

Aligning your time horizon with an investment approach may help you to be more comfortable with maintaining diversified portfolio allocations in retirement.

For the near-term portfolio, consider maintaining:

- Funds to cover 1-3 years worth of the gap between your income and spending needs
- A cushion for unexpected expenses

For illustrative purposes only. Source: J.P. Morgan Asset Management. Bonds are subject to interest rate risks. Bond prices generally fall when interest rates rise. The price of equity securities may rise or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. Equity securities are subject to stock market risk, meaning that stock prices in general may decline over short or extended periods of time. Investing in alternative assets involves higher risks than traditional investments and is suitable only for the long term. They are not tax efficient and have higher fees than traditional investments. They may also be highly leveraged and engage in speculative investment techniques, which can magnify the potential for investment loss or gain.
*Equity, fixed income and cash are considered traditional asset classes. The term "alternative" describes all non-traditional asset classes. They include private and public equity, venture capital, hedge funds, real estate, commodities, distressed debt and more.

J.P.Morgan ASSET MANAGEMENT

2023 disclosures

Unless otherwise indicated, all illustrations are shown in U.S. dollars.

Past performance is no guarantee of comparable future results.

Diversification does not guarantee investment returns and does not eliminate the risk of loss.

Indices are unmanaged and an individual cannot invest directly in an index. Index returns do not include fees or expenses.

The **S&P 500 Index** is widely regarded as the best single gauge of the U.S. equities market. This world-renowned index includes a representative sample of 500 leading companies in leading industries of the U.S. economy. Although the S&P 500 Index focuses on the large cap segment of the market, with approximately 75% coverage of U.S. equities, it is also an ideal proxy for the total market. An investor cannot invest directly in an index.

The **Bloomberg Capital U.S. Aggregate Index** represents securities that are SEC-registered, taxable and dollar denominated. The index covers the U.S. investment-grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

Bonds are subject to interest rate risks. Bond prices generally fall when interest rates rise.

The price of **equity** securities may rise or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. These price movements may result from factors affecting individual companies, sectors or industries, or the securities market as a whole, such as changes in economic or political conditions. Equity securities are subject to "stock market risk," meaning that stock prices in general may decline over short or extended periods of time.

Investing in **alternative assets** involves higher risks than traditional investments and is suitable only for sophisticated investors. Alternative investments involve greater risks than traditional investments and should not be deemed a complete investment program. They are not tax efficient and an investor should consult with his/her tax professional prior to investing. Alternative investments have higher fees than traditional investments and they may also be highly leveraged and engage in speculative investment techniques, which can magnify the potential for investment loss or gain. The value of the investment may fall as well as rise and investors may get back less than they invested.

Opinions and estimates offered constitute our judgment and are subject to change without notice, as are statements of financial market trends, which are based on current market conditions. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. References to future returns are not promises or even estimates of actual returns a client portfolio may achieve.

Asset class	20/80	40/60	50/50	60/40	80/20
U.S. large cap growth	4.8%	9.6%	12.0%	14.4%	19.3%
U.S. large cap value	4.8%	9.6%	12.0%	14.4%	19.3%
U.S. mid/small cap	2.5%	4.8%	6.0%	7.3%	9.5%
U.S. REITs	1.0%	2.0%	2.5%	3.0%	4.0%
Developed market equities	5.0%	10.0%	12.5%	15.0%	20.0%
Emerging market equities	2.0%	4.0%	5.0%	6.0%	8.0%
U.S. investment-grade bonds	62.8%	46.8%	38.5%	30.3%	12.5%
U.S. high yield bonds	10.5%	8.0%	7.0%	6.0%	4.5%
Emerging market debt	6.8%	5.3%	4.5%	3.8%	3.0%

Model portfolios can only be distributed by Intermediaries where Advisory Portfolios are available.
This document is a general communication being provided for informational purposes only. It is educational in nature and not designed to be a recommendation for any specific investment product, strategy, plan feature or other purposes. By receiving this communication you agree with the intended purpose described above. Any examples used in this material are generic, hypothetical and for illustration purposes only. None of J.P. Morgan Asset Management, its affiliates or representatives is suggesting that the recipient or any other person take a specific course of action or any action at all. Communications such as this are not impartial and are provided in connection with the advertising and marketing of products and services. Prior to making any investment or financial decisions, you should seek individualized advice from your personal financial, legal, tax and other professionals that take into account all of the particular facts and circumstances of your own situation.

Telephone calls and electronic communications may be monitored and/or recorded. Personal data will be collected, stored and processed by J.P. Morgan Asset Management in accordance with our privacy policies at https://www.jpmorgan.com/privacy.

JPMorgan Distribution Services, Inc., member FINRA.

J.P. Morgan Asset Management is the marketing name for the asset management businesses of JPMorgan Chase & Co. and its affiliates worldwide.
If you are a person with a disability and need additional support in viewing the material, please call us at 1-800-343-1113 for assistance.

JP-GTR | 0903c02a81c9c127
NOT FDIC INSURED. NO BANK GUARANTEE. MAY LOSE VALUE.

J.P.Morgan
ASSET MANAGEMENT