



Guide to Retirement

2022





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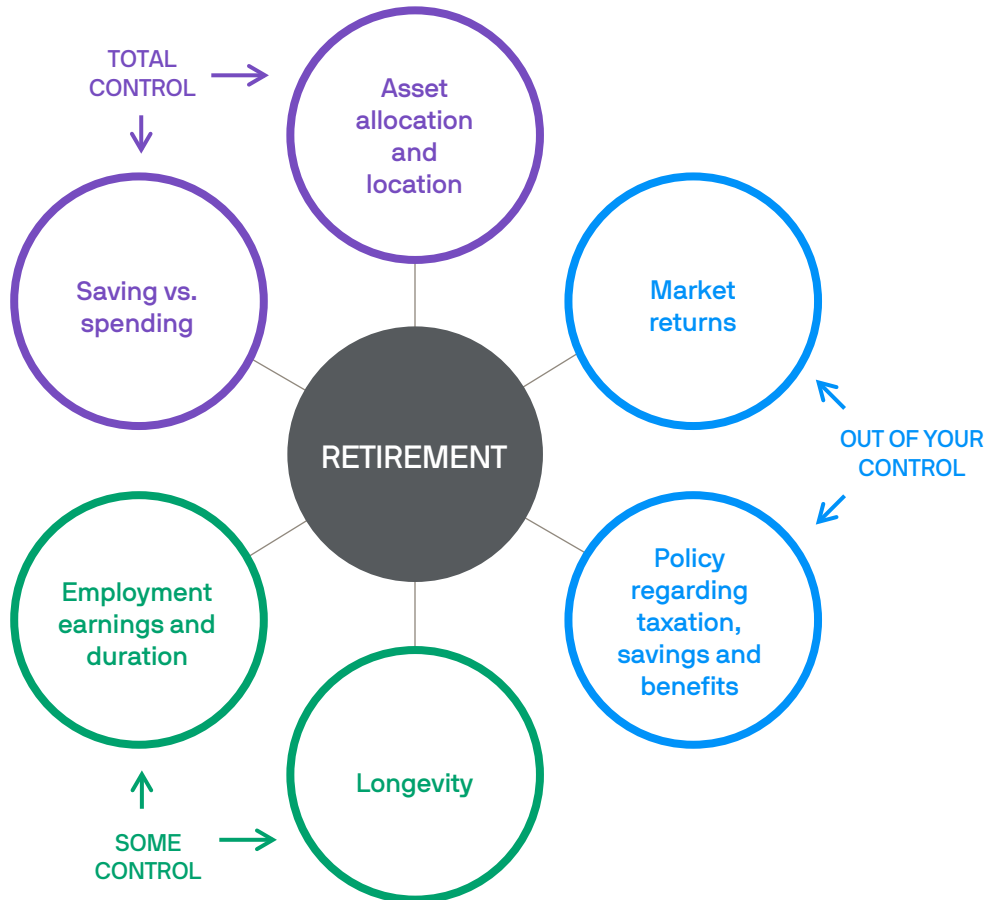
45. Tax implications for retirement savings by account type
46. Prioritizing long-term retirement savings
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Reference

49. Traditional IRAs vs. Roth IRAs: 2021/2022
50. Retirement plan contribution and deferral limits: 2021/2022
51. A closer look at tax rates: 2022
52. Disclosures



The retirement equation



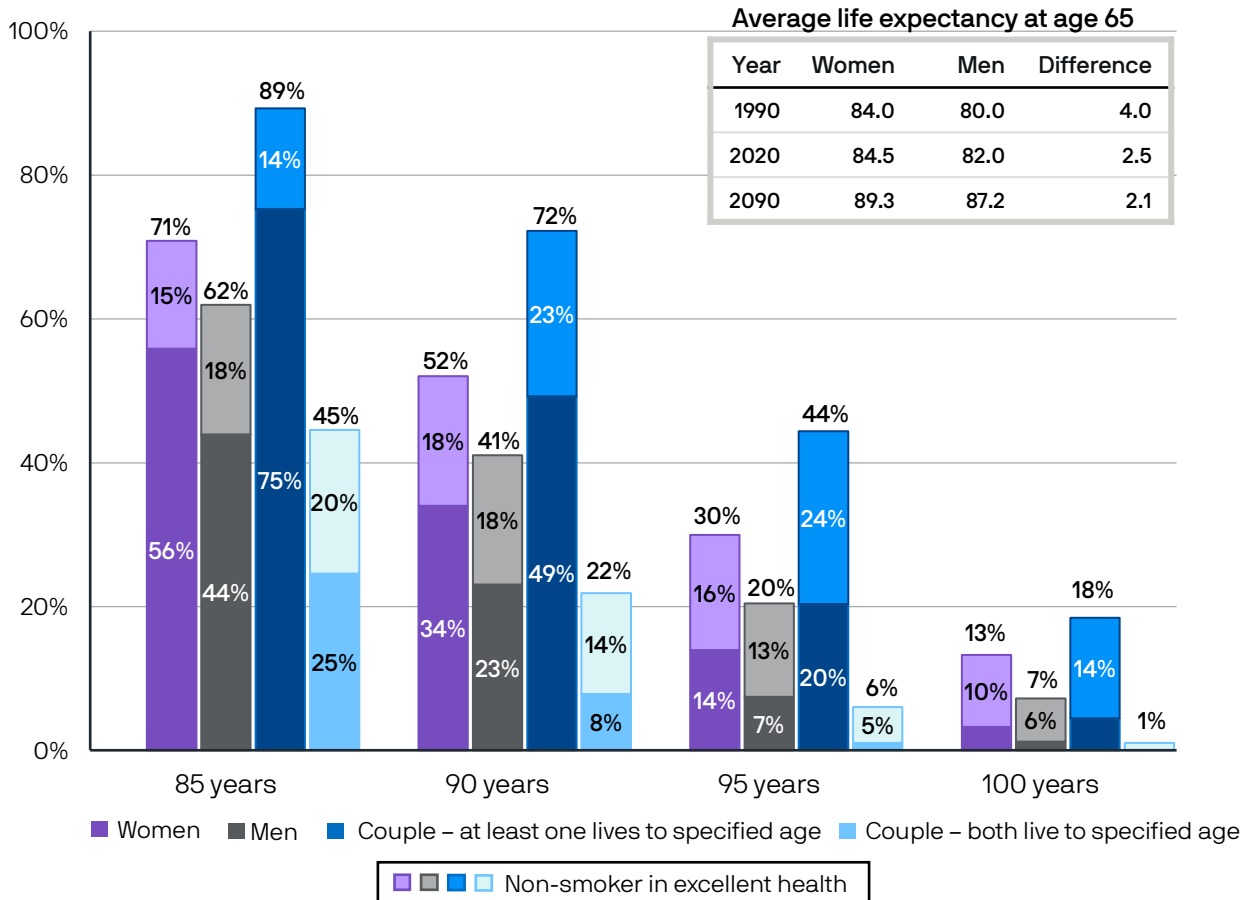
A sound retirement plan

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.



Life expectancy probabilities

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



Plan for longevity

Average life expectancy continues to increase and 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, 2018 (published in the 2021 OASDI Trustees Report); American Academy of Actuaries and Society of Actuaries, Actuaries Longevity Illustrator, <http://www.longevityillustrator.org/> (accessed January 14, 2022), J.P. Morgan Asset Management.

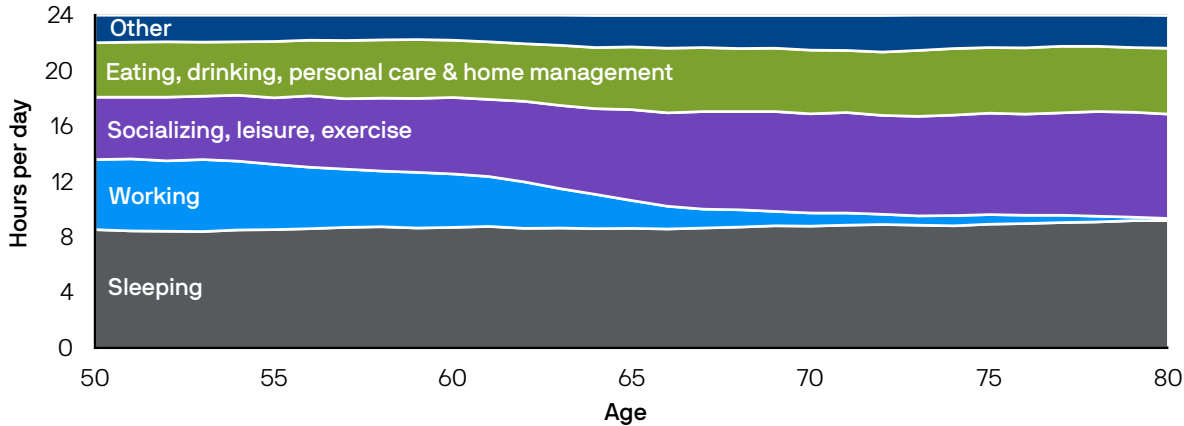
Source (table): Social Security Administration 2021 OASDI Trustees Report.

Probability at least one member of a same-sex female couple lives to age 95 is 26% and a same-sex male couple is 14%.



Changes in lifestyle

Daily hours spent by activity per age



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 isn't 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.

An individual who "PUSHES" tends to age well:



Has a sense of **Purpose**



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



Experiences gratitude



Focuses on **S**trengths and abilities

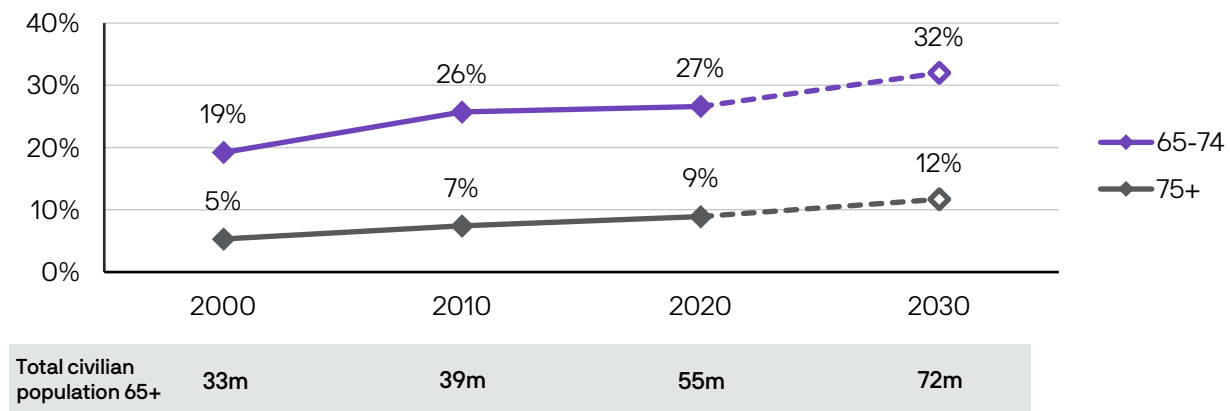
Source (top chart): Bureau of Labor Statistics American Time Use Survey 2019, J.P. Morgan Asset Management analysis. Values include individuals who do and do not participate in the activities. Values are averaged across rolling five-year age groups. Each category includes time spent traveling to and from the activity if applicable.

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

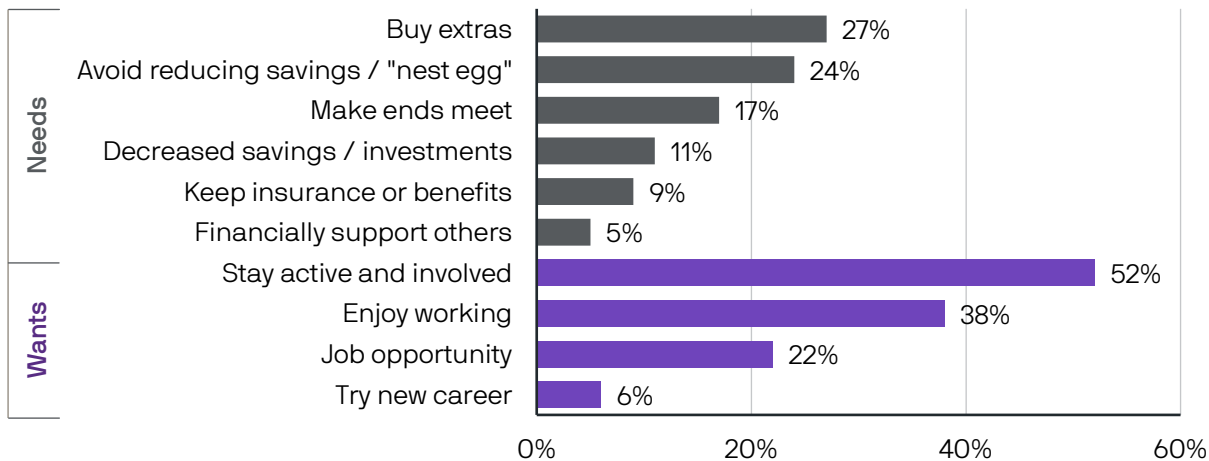
Percentage of people in the civilian labor force 2000-2030



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

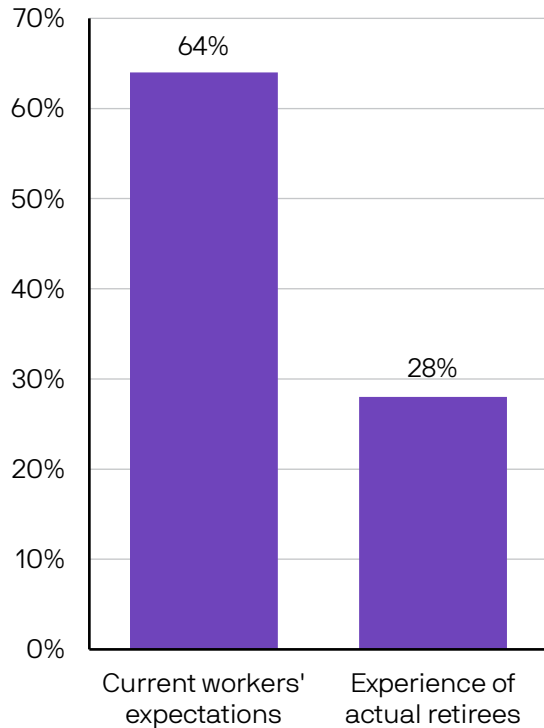


Source (top chart): Bureau of Labor Statistics, Employment Projections, Table 3.2 and Table 3.3. Actual data to 2020 and projection to 2030. Civilian population age 65+ is non-institutionalized population.
 Source (bottom chart): Employee Benefit Research Institute, Mathew Greenwald & Associates, Inc., 2021 Retirement Confidence Survey. Latest available data as of December 31, 2021. Individuals may have given more than one answer.



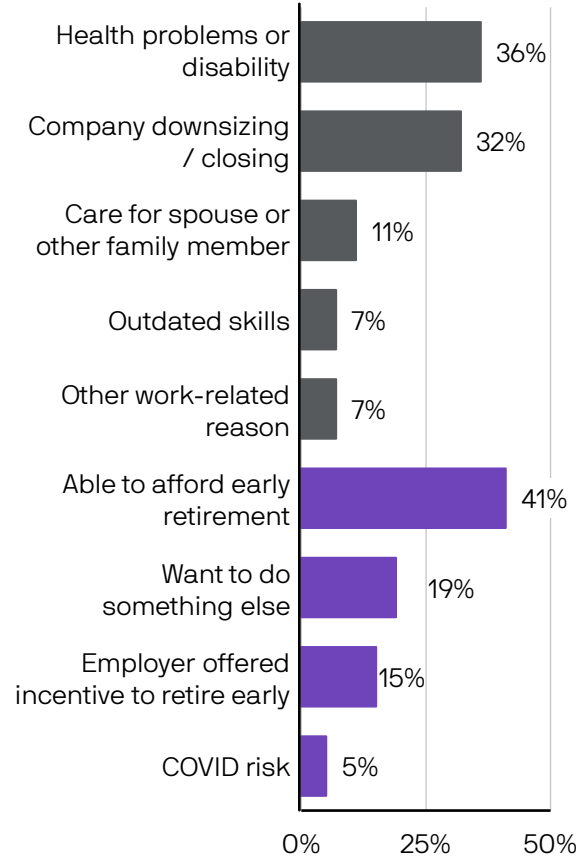
Managing expectations of ability to work

Expectations of workers vs. retirees To retire at age 65 or older



Median retirement age:	
Expected:	65
Actual:	62

Reasons cited for retiring earlier than planned



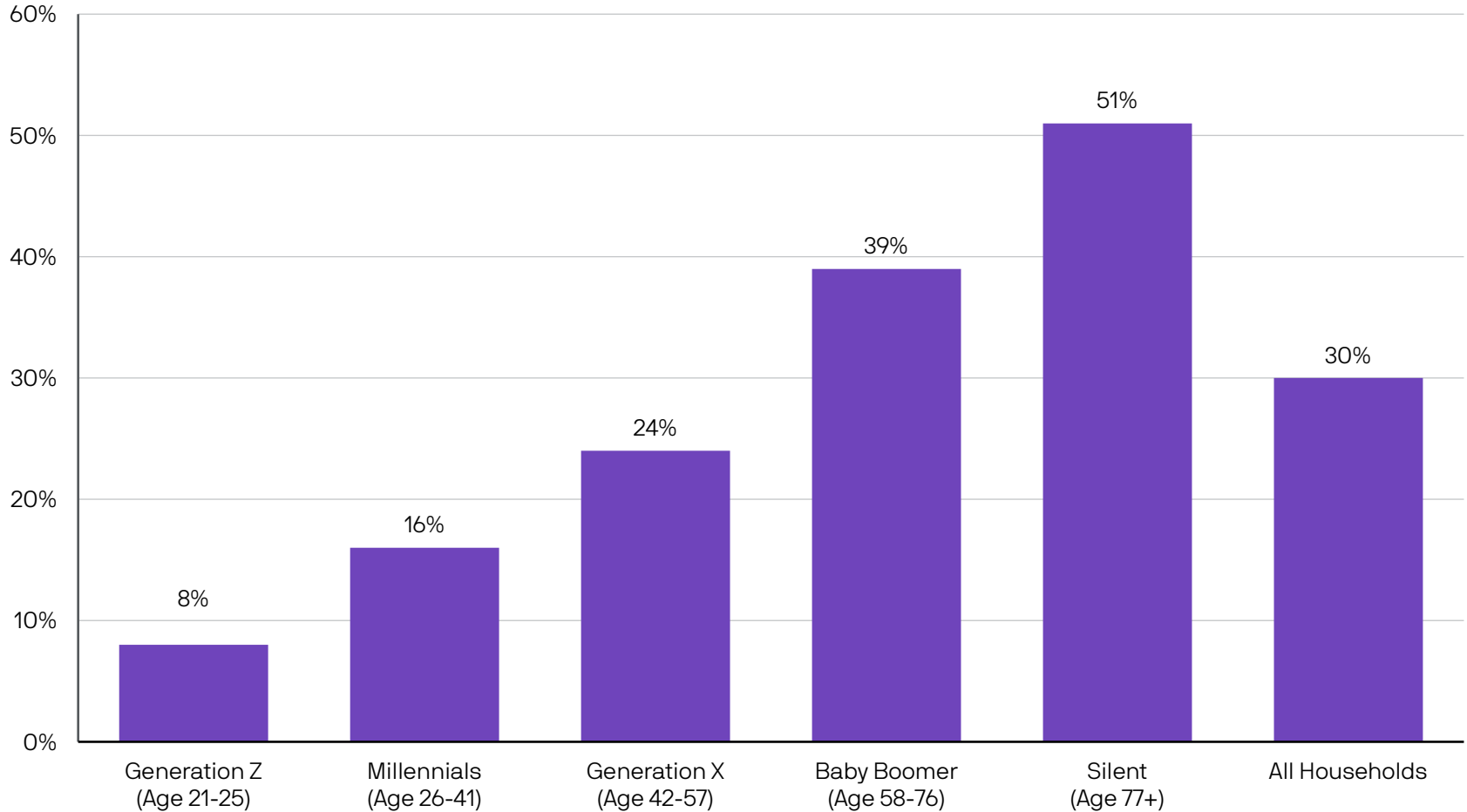
Early Retirement

You may not have complete control over when you retire, so you should consider having a back-up plan. You may have to draw income earlier and make your portfolio last longer than you anticipate.

Source: Employee Benefit Research Institute, Mathew Greenwald & Associates, Inc., 2021 Retirement Confidence Survey. Individuals may have given more than one answer. Latest available data as of December 31, 2021.



Percentage of households with a pension



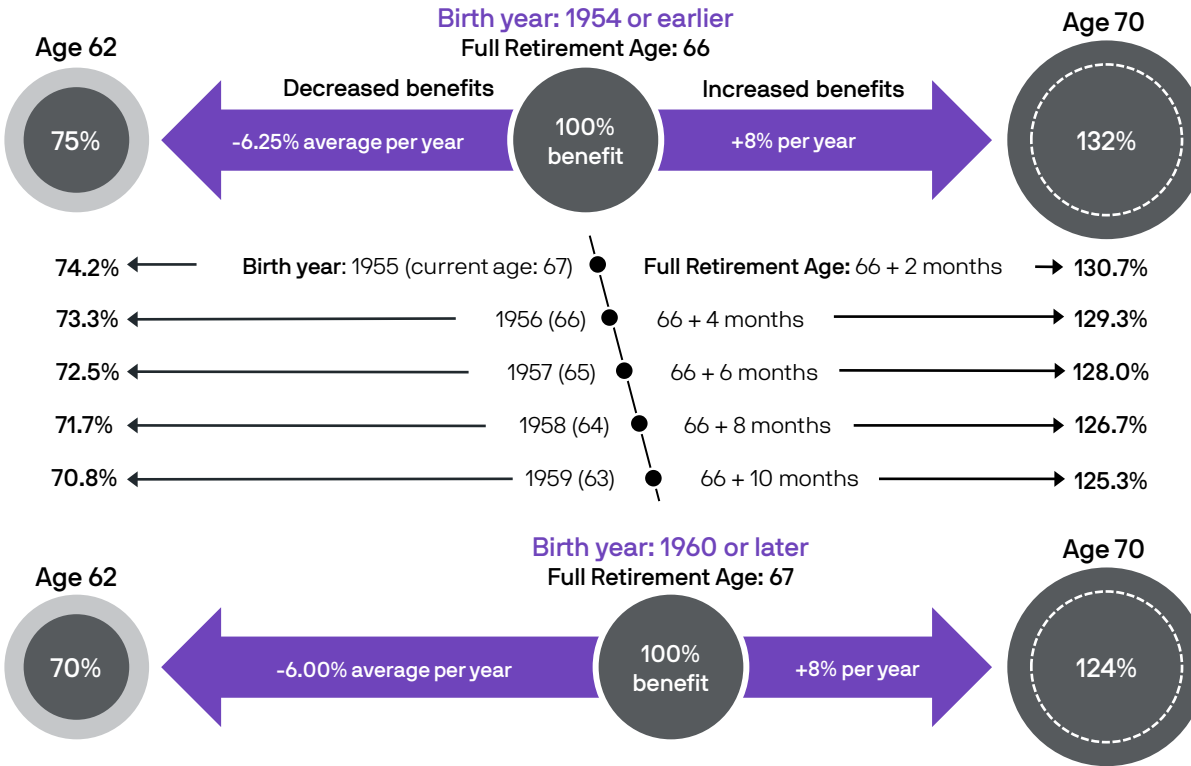
Source: LIMRA Secure Retirement Institute analysis of 2019 Survey of Consumer Finances, Federal Reserve Board, 2020. Latest available data as of December 31, 2021. Age is for head of household in 2022. Percent of households having access to a DB plan denotes either survey respondent or spouse: a) has DB pension at current job; b) had accrued a DB pension benefit from a former job but has not yet claimed benefits; or c) is currently receiving benefits from DB pension. A pension is also referred to as a defined benefit (DB) pension plan.



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 2022

5.9%

Average cost of living adjustment (1985-2022)

2.6%

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.

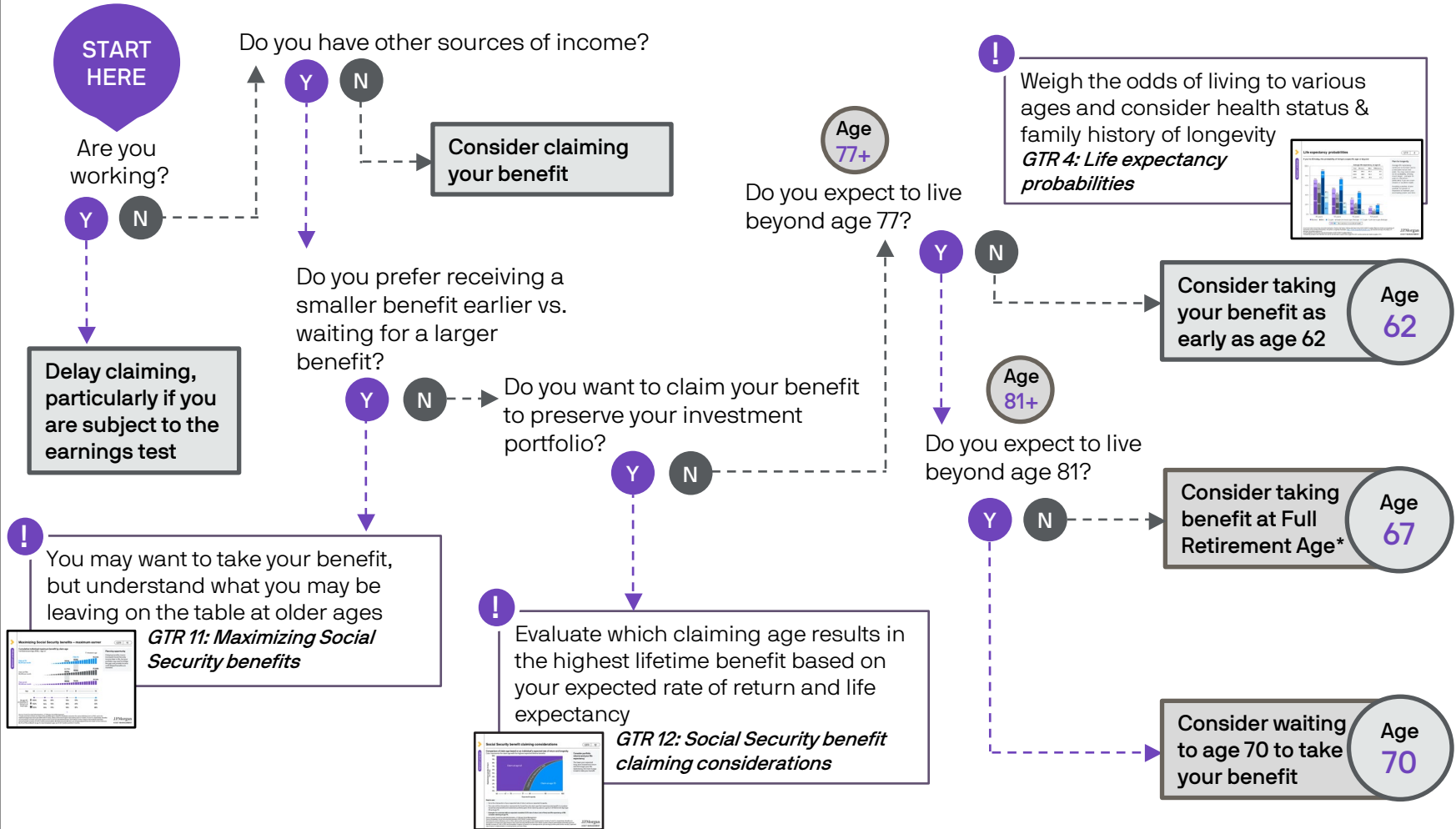
In 2017, full retirement age began transitioning from 66 to 67 by adding two months each year for six years. This makes claiming early even more of a benefit reduction.

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) will complete the move. 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



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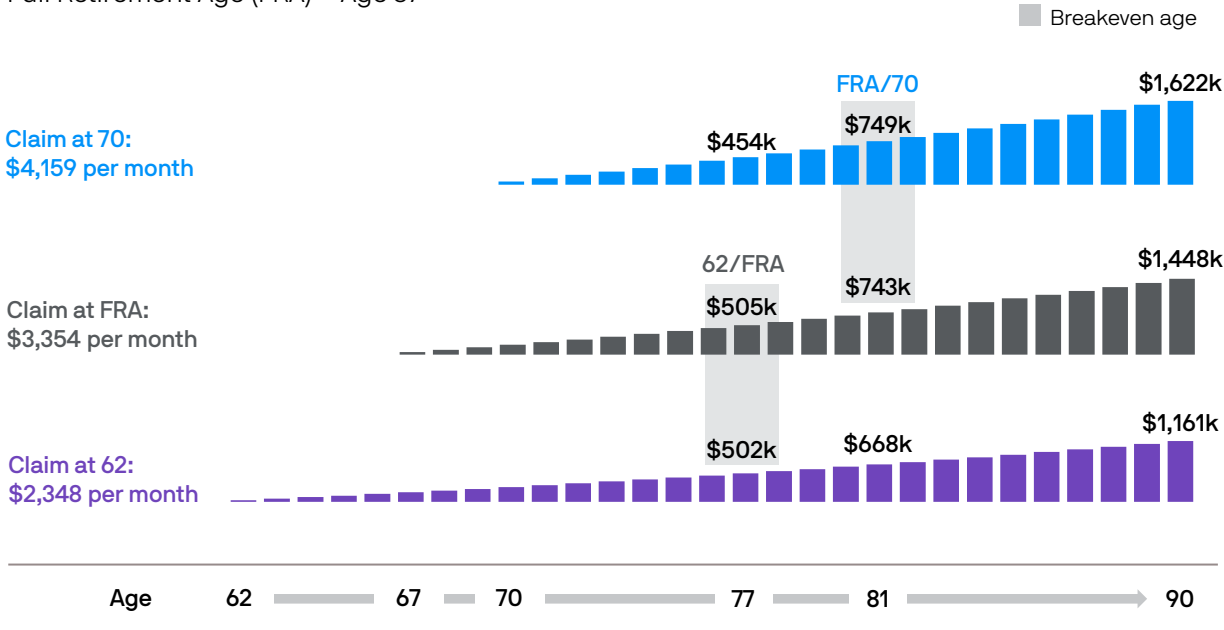
*Full Retirement Age (FRA) of 67 is for individuals born 1960 or later. This decision tree is also appropriate for other FRAs.



Maximizing Social Security benefits: maximum earner

Cumulative individual maximum benefit by claim age

Full Retirement Age (FRA) = Age 67



At age 62, probability of living to at least age:	62	67	70	77	81	90
100%	100%	93%	87%	70%	57%	22%
100%	100%	96%	92%	80%	69%	33%
100%	100%	99%	99%	94%	87%	48%

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.

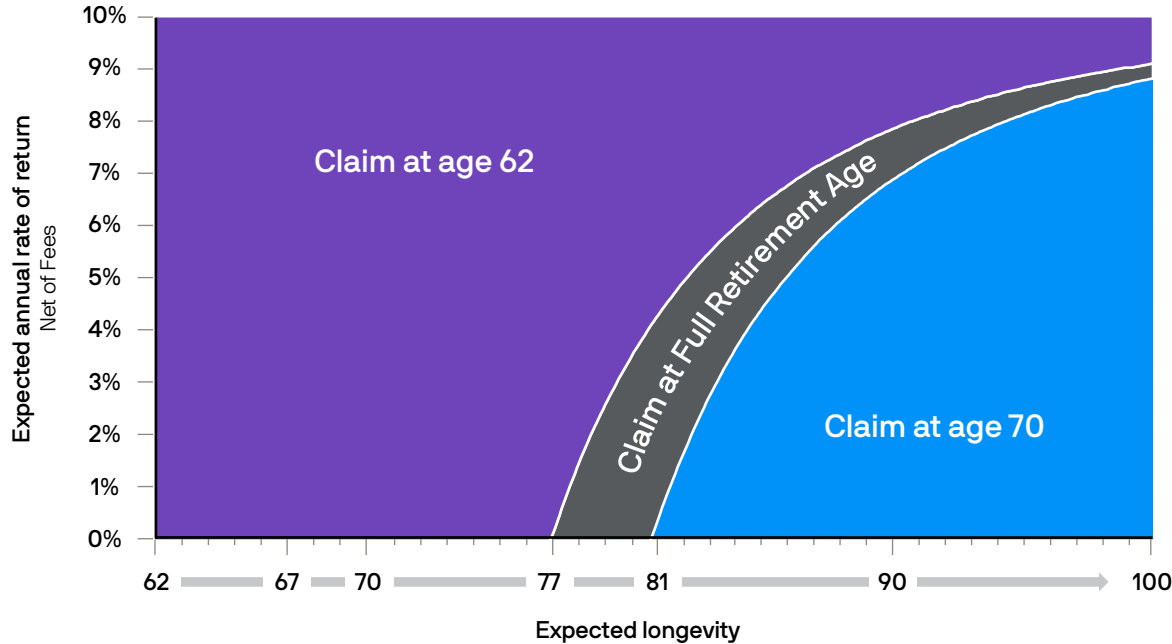
Source: Social Security Administration, J.P. Morgan Asset Management.

*Couple assumes at least one lives to the specified age or beyond. Breakeven assumes the same individual, born in 1960, earns the maximum wage base each year (\$147,000 in 2022), 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 2021 OASDI Trustee's Report intermediate estimates (annual benefit increase of 2.4% in 2023 and thereafter). Monthly amounts with the cost of living adjustments (not shown on the chart) are: \$3,776 at FRA and \$5,027 at age 70. Exact breakeven ages are 76 & 9 months and 80 & 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 2021 OASDI Trustees Report.
 Assumes the same individual, born in 1960, 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 2021 OASDI Trustee's Report intermediate estimates (annual benefit increase of 2.4% in 2023 and thereafter). Analysis is based on an average 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%

GTR 13

Saving

		Current household income						
		\$30,000	\$40,000	\$50,000	\$60,000	\$70,000	\$80,000	\$90,000
Current age		Checkpoint (x current household income)						
25	See "Annual savings needed" on slide 16*	0.1	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	1.7	1.9	
40	0.3	1.1	1.4	1.7	2.2	2.4	2.6	
45	0.7	1.6	2.1	2.4	3.0	3.2	3.5	
50	1.1	2.3	2.8	3.2	3.9	4.1	4.5	
55	1.7	3.0	3.6	4.1	4.8	5.2	5.6	
60	2.2	3.7	4.4	4.9	5.8	6.1	6.7	
65	2.5	4.1	4.9	5.5	6.5	6.9	7.5	

Model assumptions

Annual gross savings rate: 5%

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

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

Inflation rate: **2.3%**

Retirement age:

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

Years in retirement: **35**

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**

*Households age 25-35 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 16. 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 (first 10 years) and equilibrium 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 15. 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 \geq \$100k
Annual savings rate: 10%

Current age	Current household income						
	\$100,000	\$125,000	\$150,000	\$175,000	\$200,000	\$250,000	\$300,000
25	0.1	0.3	0.5	0.7	0.8	1.0	1.2
30	0.6	1.0	1.2	1.5	1.6	1.9	2.1
35	1.5	1.9	2.2	2.5	2.7	2.9	3.2
40	2.5	3.0	3.3	3.7	3.9	4.2	4.6
45	3.6	4.3	4.7	5.1	5.4	5.8	6.2
50	5.0	5.8	6.3	6.7	7.1	7.6	8.0
55	6.5	7.5	8.0	8.5	8.9	9.5	10.0
60	8.0	9.1	9.7	10.3	10.8	11.4	12.0
65	9.3	10.5	11.1	11.8	12.3	13.0	13.7

Model assumptions

Annual gross savings rate: 10%

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

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

Inflation rate: **2.3%**

Retirement age:

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

Years in retirement: **35**

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: $\$100,000 \times 2.5 = \$250,000$**

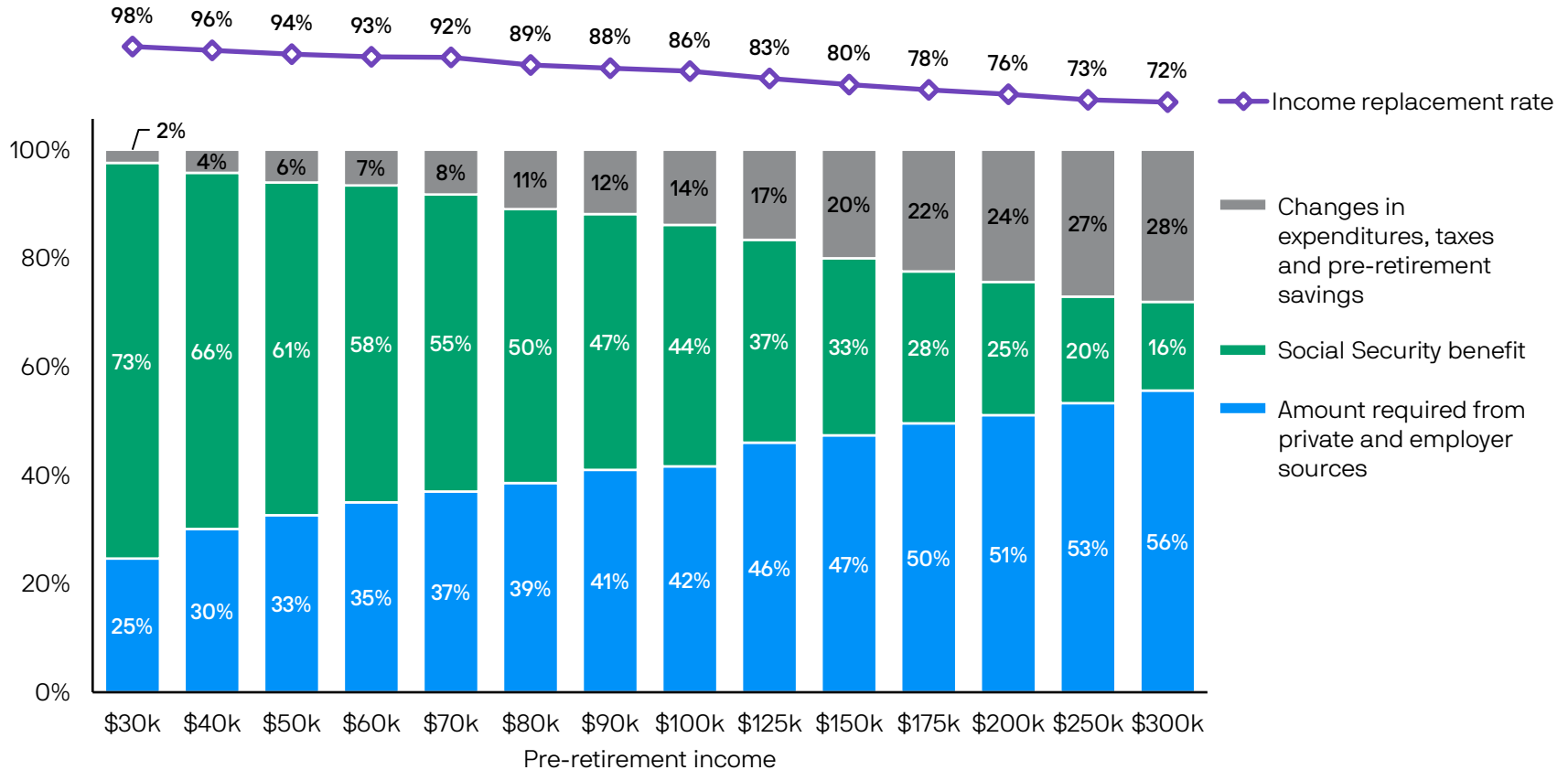
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Income replacement needs vary by household income

Saving

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 – 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.



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%	5%	6%	7%	8%	8%
30	4%	6%	7%	8%	9%	10%	10%
35	5%	8%	9%	10%	12%	13%	14%
40	6%	10%	12%	14%	16%	17%	18%
45	9%	14%	17%	19%	22%	23%	25%
50	13%	21%	25%	28%	33%	35%	38%

Model assumptions

Pre-retirement portfolio:
60/40 diversified portfolio

Post-retirement portfolio:
40/60 diversified portfolio

Inflation rate: **2.3%**

Retirement age:

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

Years in retirement: **35**

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 12% every year until retirement.**

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 a blend of proprietary Long-Term Capital Market Assumptions (first 10 years) and equilibrium 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 15. 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

Household income ≥\$100k

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%	11%	12%	13%	13%	14%	15%
30	13%	14%	15%	16%	17%	18%	19%
35	17%	19%	20%	21%	22%	23%	24%
40	22%	25%	27%	28%	29%	31%	33%
45	31%	35%	37%	39%	41%	43%	46%
50	46%	52%	55%	59%	61%	65%	68%

Model assumptions

Pre-retirement portfolio:
60/40 diversified portfolio

Post-retirement portfolio:
40/60 diversified portfolio

Inflation rate: **2.3%**

Retirement age:

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

Years in retirement: **35**

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 22% every year until retirement.**

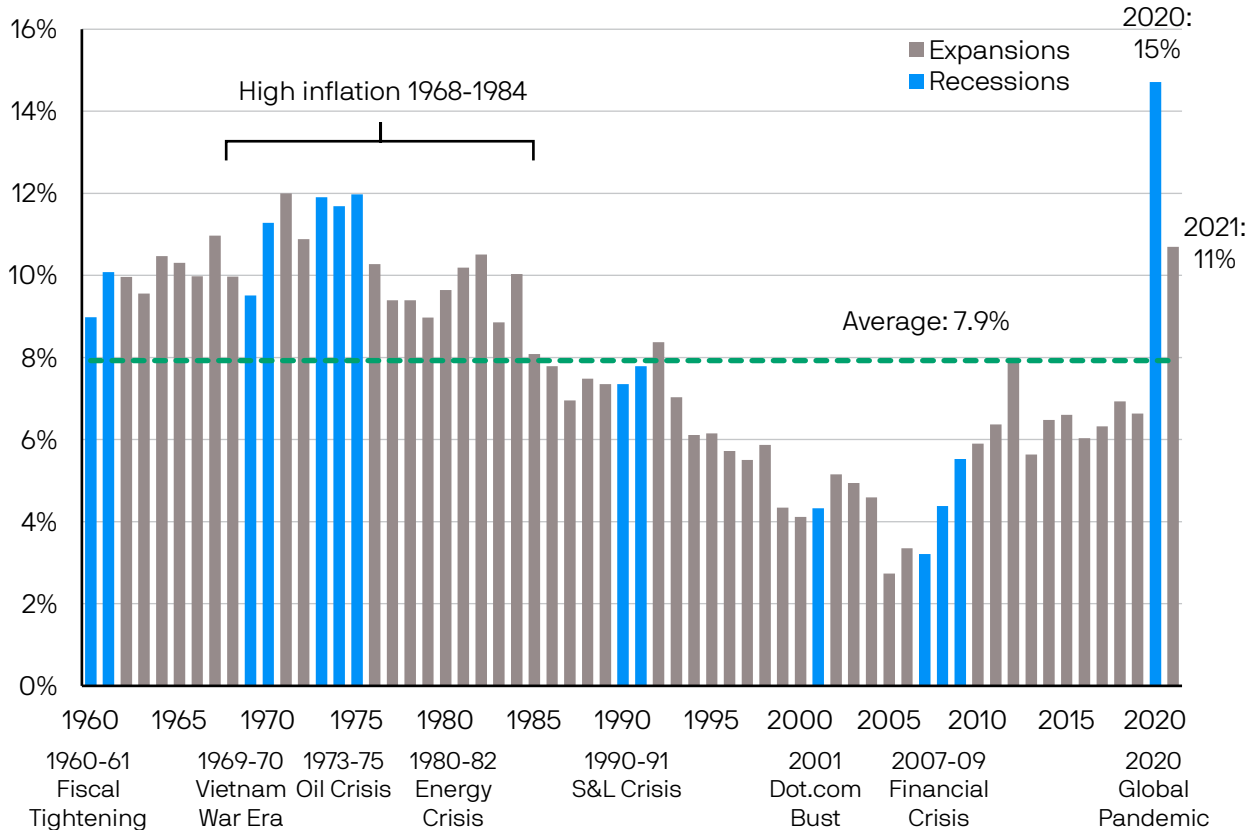
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Historical annual savings rate

Saving

Personal savings rate Annual, % of gross income



Beware the wealth effect

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

Government help through the pandemic including stimulus checks and advance child tax credit payments boosted savings rates to levels not seen since the 1970s.

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

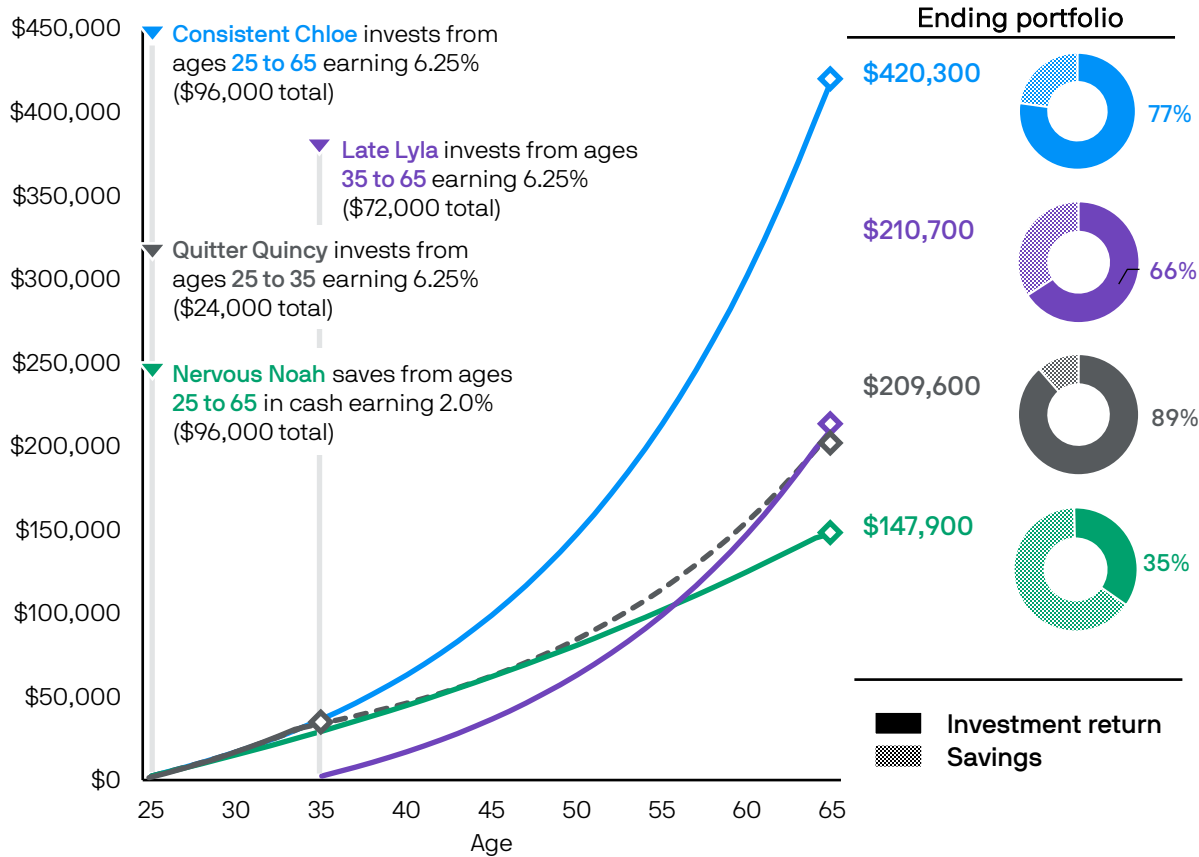
*Recommended savings rates are based on J.P. Morgan Asset Management's analysis of median and affluent households. Source: Bureau of Economic Analysis, National Bureau of Economic Research, J.P. Morgan Asset Management, as of December 31, 2021. Personal savings rate is calculated as personal savings (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

Saving

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.

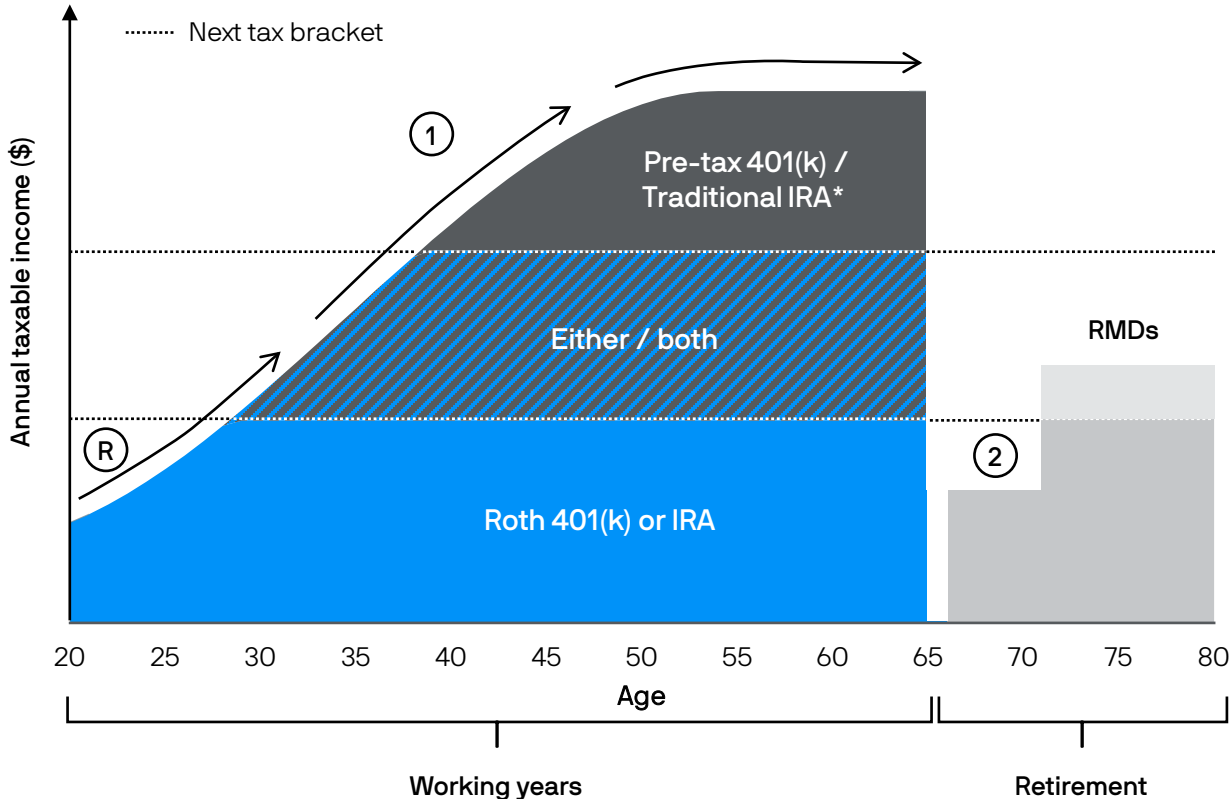
The above example is for illustrative purposes only and not indicative of any investment. Source: J.P. Morgan Asset Management, Long-Term Capital Market Assumptions. Compounding is the increasing value of assets due to investment return earned on both principal and prior investment gains.



Evaluate a Roth at different life stages

Saving

Changes in lifetime taxable income Hypothetical wage curve



Tax diversification

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

Rule: 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 are likely to push you into a higher bracket.

*If eligible to make a deductible contribution (based on your MAGI). The illustration reflects savings options into Traditional and Roth IRA accounts, as well as into pre-tax and Roth 401(k) accounts. RMD = Required Minimum Distributions, which are typically due no later than April 1 following the year the owner turns 72 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. Employer contributions are typically pre-tax and are subject to tax upon distribution. The above example is for illustrative purposes only. Source: J.P. Morgan Asset Management.

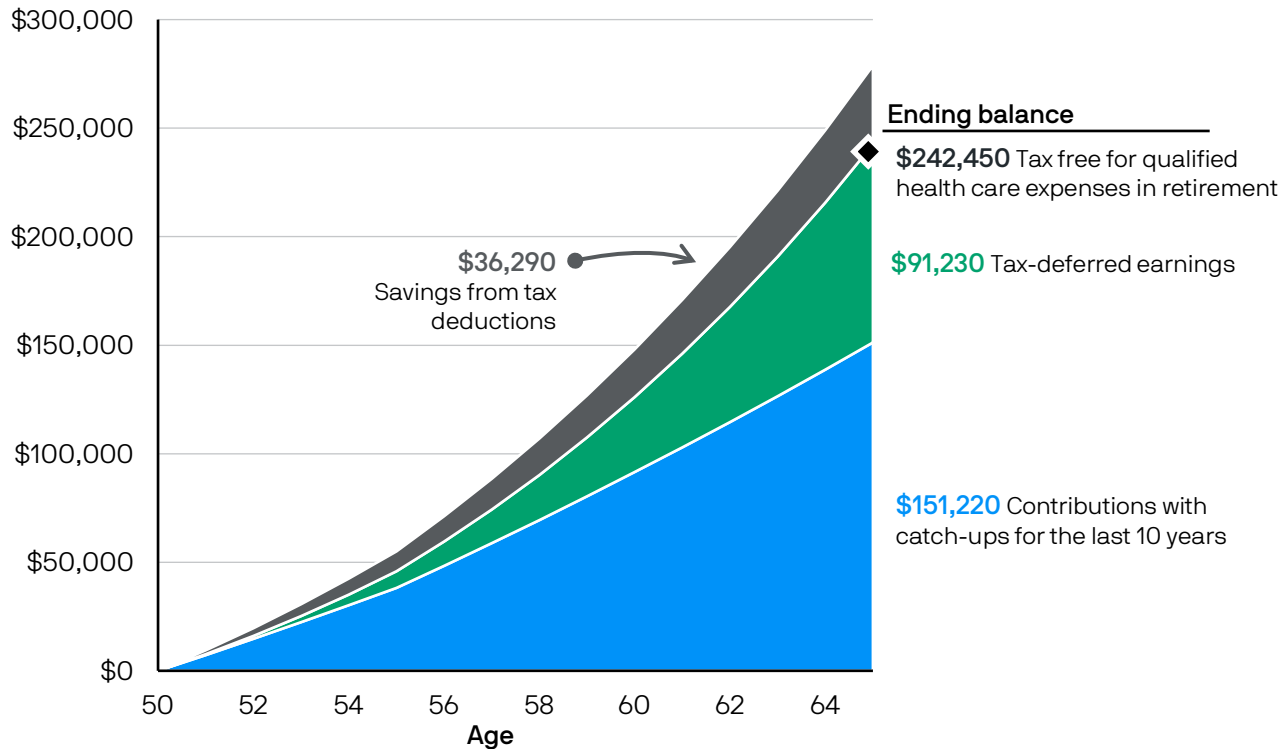


Maximizing an HSA for health care expenses

Saving

Health Savings Account (HSA) savings are triple tax advantaged¹

Maximum family contribution with catch-ups, 6.25% return and 24% marginal tax rate



Make the most of it

If you are enrolled in a qualified high-deductible health plan and are eligible to contribute to a Health Savings Account (HSA), be sure to open and fund your HSA.

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.

¹Must 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 your tax professional.

The above example is for illustrative purposes only and not indicative of any investment. 2022 family contribution limit of \$7,300 is adjusted for inflation of 2.3% for 15 years with catch-up contributions of \$1,000 per person starting at age 55 in 2027. Does not include account fees. Present value of illustrated HSA after 15 years is \$172,376. Estimated savings from tax deductions at a 37% marginal rate are \$55,950. Assumes cash or income used for health care expenses is not withdrawn from an account with a tax liability. The example assumes the HSA is fully invested; if \$2,000 was held in a cash account, the illustrated cumulative HSA account value would be \$237,479. Individual 2022 contribution limit is \$3,650. \$242,440 is enough to fund about 13 years of projected average qualified Medicare-related health care expenses for a couple.



Diversified sources of retirement funding

Spending

Account type	Investment earnings/ withdrawals	Included when calculating:	
		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		<input checked="" type="checkbox"/>
	Ordinary dividends Taxable interest	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Qualified dividends	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Realized capital gains	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-tax 401(k)/ Traditional IRA	Taxable withdrawals (ordinary income)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Retirement funding sources are not created equal

Investment earnings and withdrawals from tax-advantaged accounts are primary 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 of a 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 is not included in the means-testing of retirement-related government benefits.

This is not intended to be individual tax advice; consult your tax professional.

¹Must 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.

²Subject to 5-year Roth account holding period and age requirements.

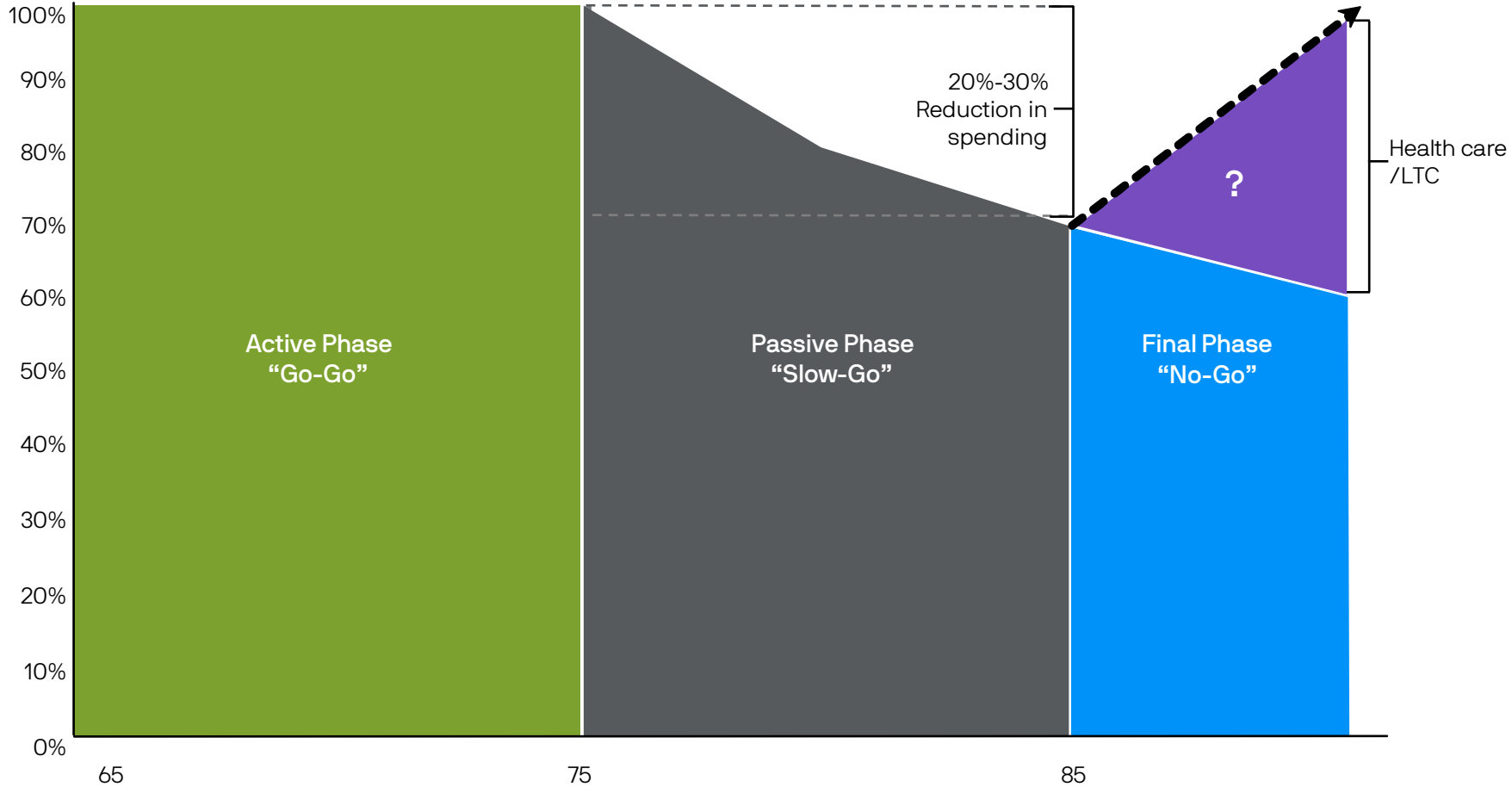
Source: J.P. Morgan Asset Management.



“The Prosperous Retirement”: theoretical spending profile

Percentage of pre-retirement spending

Spending



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

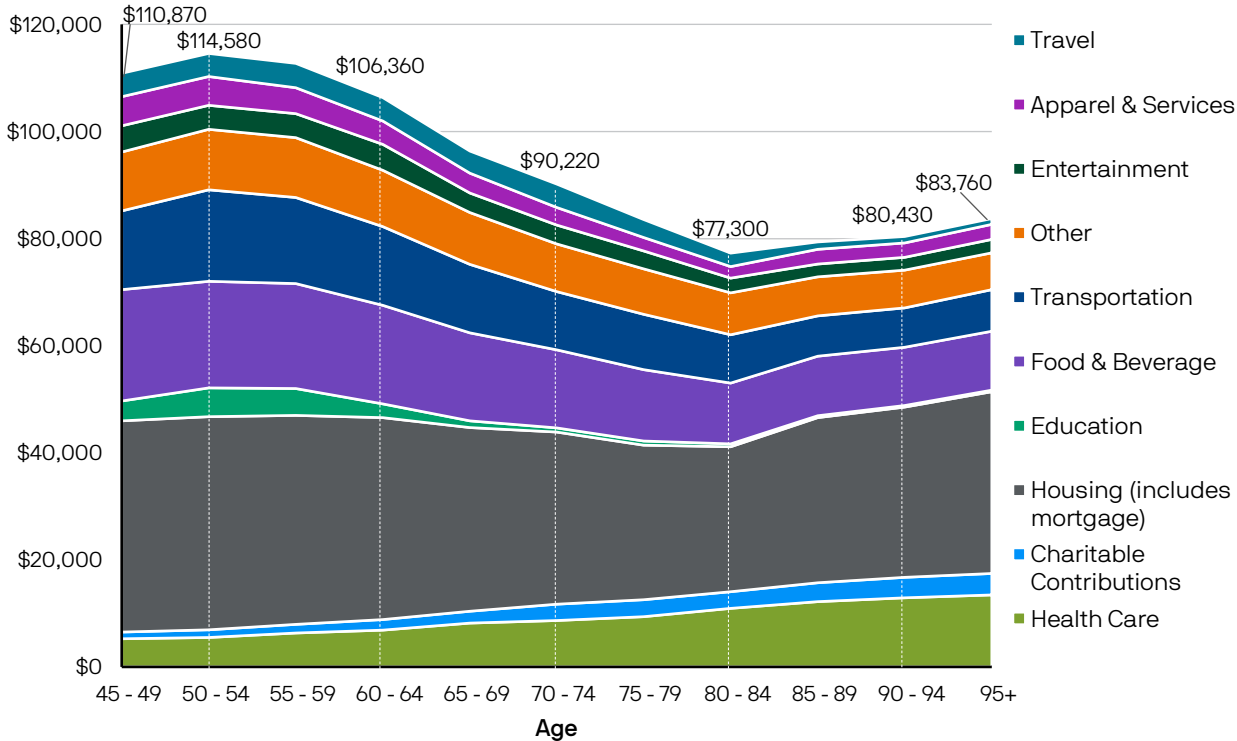


Changes in spending

Spending

Annual average household spending by age

Households with investable wealth of \$1m - \$3m



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.

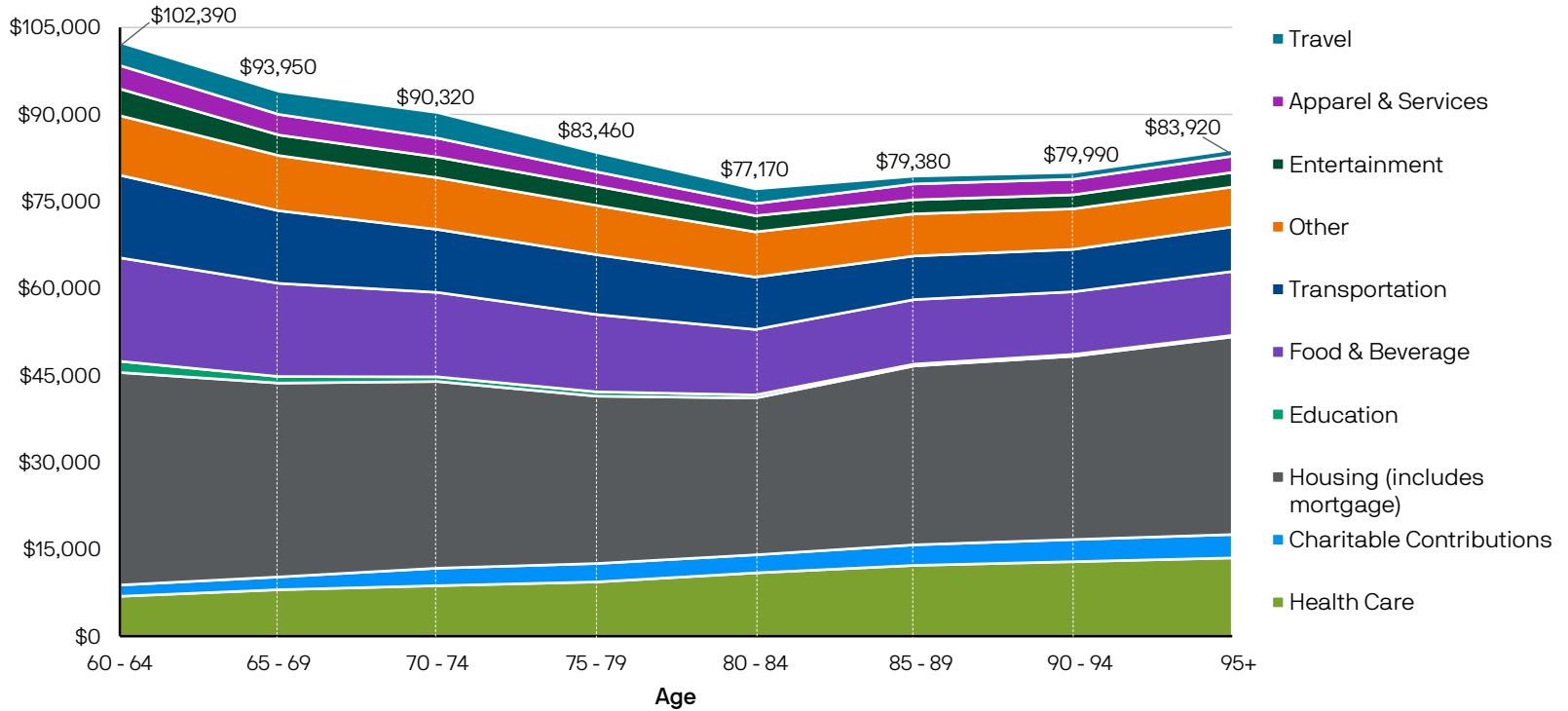
Source: J.P. Morgan Asset Management, based on internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, credit and debit card, and electronic payment transactions from January 1, 2017 to December 31, 2019. Check and cash distribution: 2019 CE Survey, College Educated; 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/Equifax, Inc. 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

Annual average household spending by age
Households with investable wealth of \$1m - \$3m

Spending



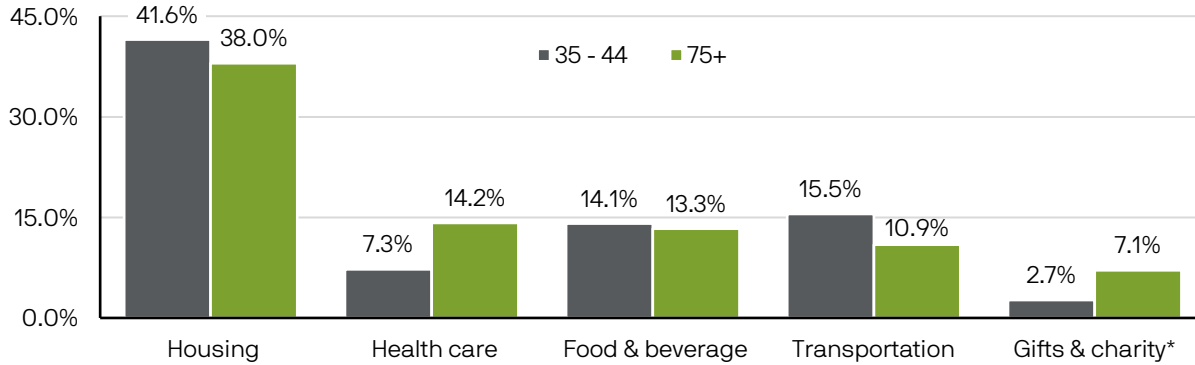
Source: J.P. Morgan Asset Management, based on internal select data from JPMorgan Chase Bank, N.A. and its affiliates (collectively "Chase") including select Chase check, credit and debit card, and electronic payment transactions from January 1, 2017 to December 31, 2019. Check and cash distribution: 2019 CE Survey, College Educated; 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/Equifax, Inc. 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

Spending

Average annual spending by age and category 2017-2019 (excludes pandemic impact)



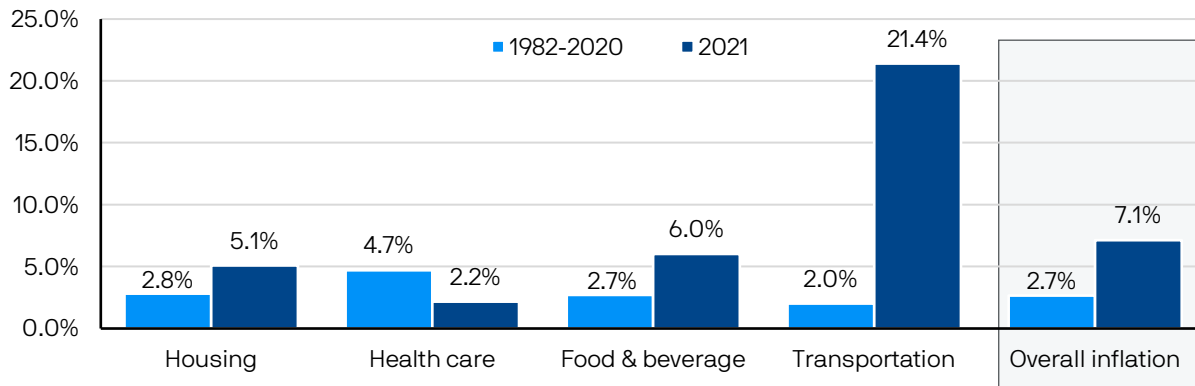
Take a long-term view

Housing, health care, food and beverage, transportation and charitable contributions make up 84% of spending for households age 75+.

As a percentage of their spending, older households purchase more housing and health care, but less of the more variable food and transportation categories.

All households may benefit from a long-term view of inflation and how the basket of goods they are likely to purchase may change over time.

Annual average inflation by spending category



Source (top chart): Bureau of Labor Statistics (BLS), 2017-2019 annual average Consumer Expenditure Survey, college educated. 2017-2019 data is used to reflect spending behaviors over the long term; excludes pandemic impact. Additional spending categories for age 35-44 and 75+, respectively: entertainment, 6% and 5%; travel 4% and 4%; other 3% and 4%; apparel 4% and 2%; education 2% and 1%. Source (bottom chart): BLS, Consumer Price Index (all urban consumers, seasonally adjusted), J.P. Morgan Asset Management.

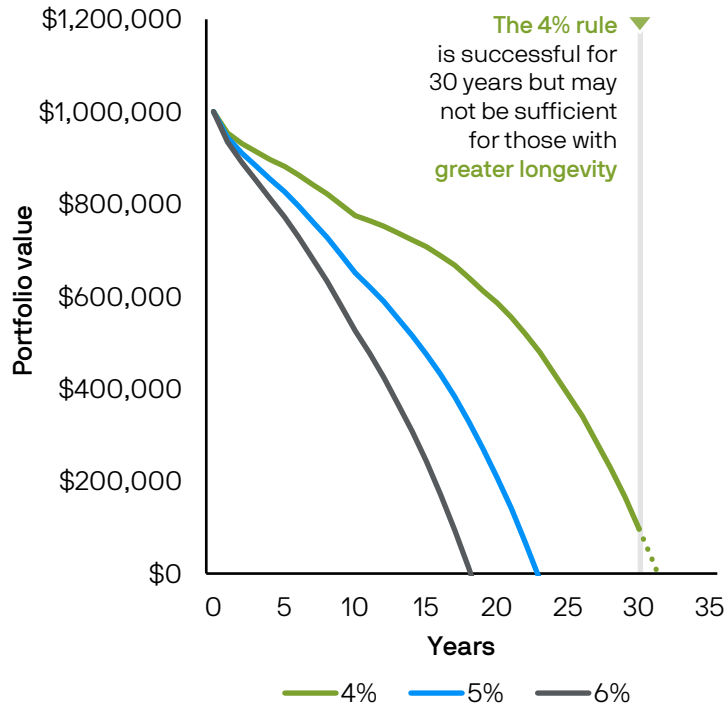


The 4% rule: projected outcomes vs. historical experience

Spending

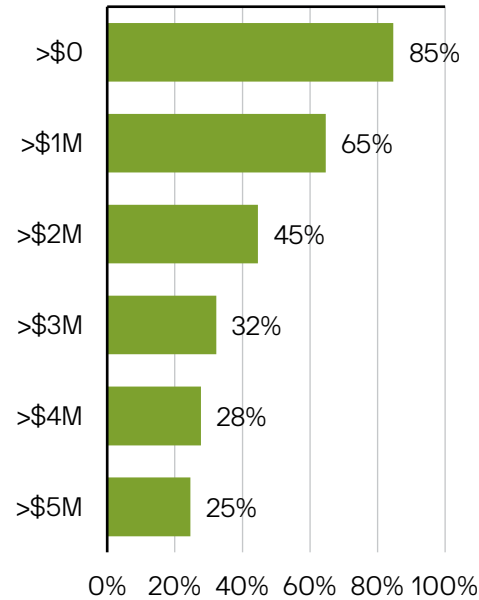
40/60 portfolio at various initial withdrawal rates

Projected nominal outcomes, 80th percentile



Historical ending wealth at 4% initial withdrawal rate (1928-2021)

65 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. It is not guidance on how to efficiently use your wealth to support your retirement lifestyle.

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 a blend of proprietary Long-Term Capital Market Assumptions (first 10 years) and equilibrium returns (25 years). 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 (2.3%). 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

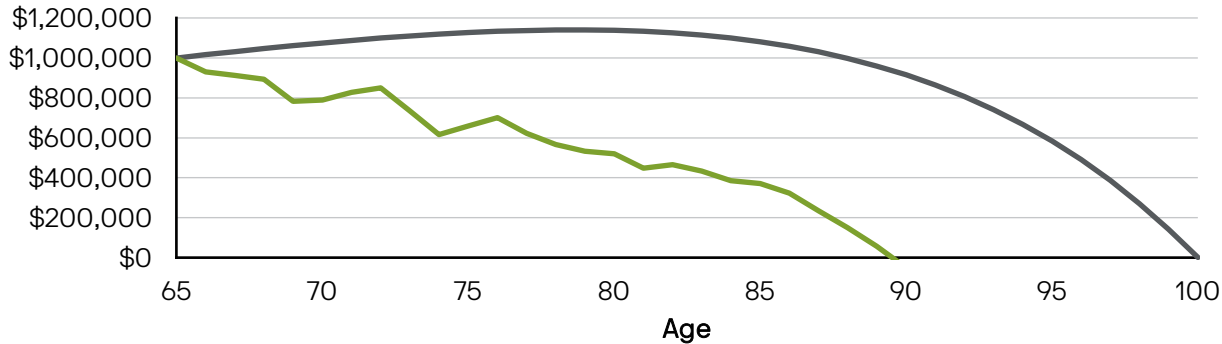
Spending

Portfolio value over time 1966-2000

Assumes 5.2% initial withdrawal rate

— Assumed annual return: 7.2%

— 40/60 portfolio: Actual annual return: 9.5%



Sequence of return risk

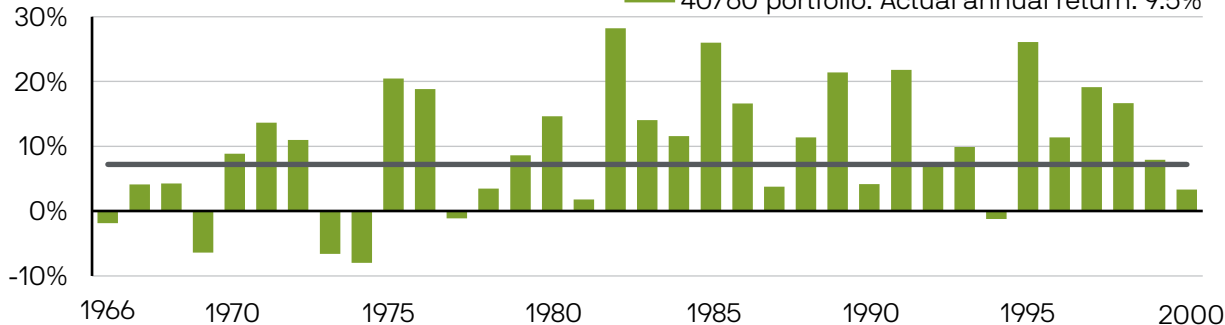
Withdrawing assets in down markets early in retirement can ravage a portfolio. Consider investment solutions that incorporate downside protection such as:

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

Rate of return: actual vs. average 1966-2000

— Assumed annual return: 7.2%

— 40/60 portfolio: Actual annual return: 9.5%



Assumptions (top chart): Retire at age 65 with \$1,000,000 and withdraw 5.2% of the initial portfolio value (\$52,000). Withdrawal amount increased by 3.0% inflation each year (lower than the average inflation rate of the period between 1966-2000).

Source: J.P. Morgan Asset Management. 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.

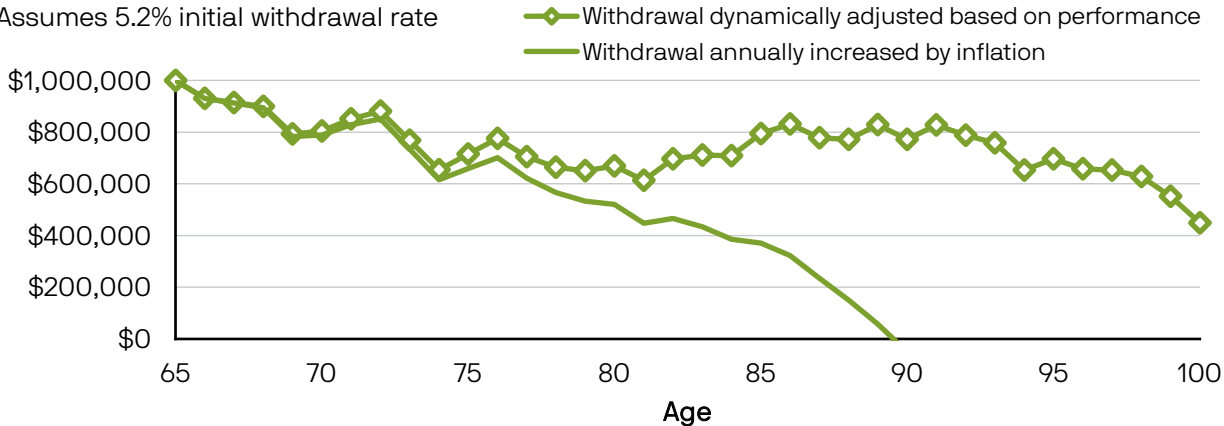


Mitigating dollar cost ravaging: dynamic spending

Spending

Portfolio value over time 1966-2000

Assumes 5.2% initial withdrawal rate

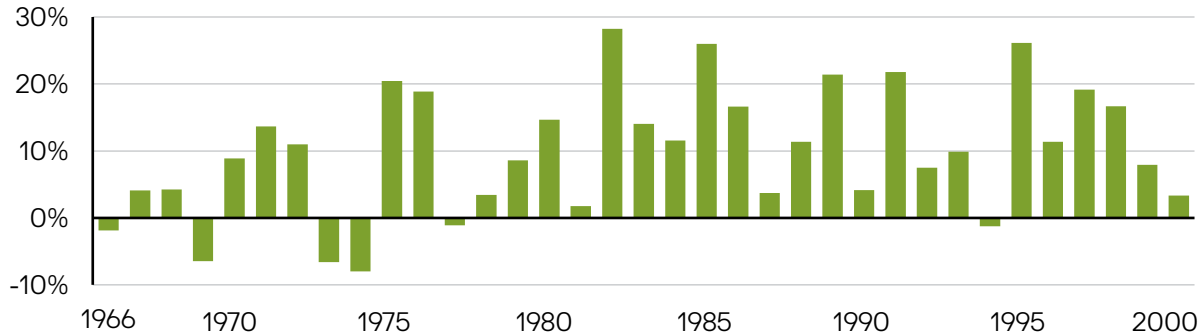


Be flexible

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.

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



Assumptions (top chart): Retire at age 65 with \$1,000,000 and withdraw 5.2% of the initial portfolio value (\$52,000). Fixed withdrawal scenario assumes the withdrawal amount is increased by 3% inflation 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 inflation (3%); 3) greater than 10%, withdrawal is increased by 4%. While the dynamic withdrawal scenario during this historical period provided 21% more total spending in today's dollars, it is for illustrative purposes only and may not be successful during other time periods. Source: J.P. Morgan Asset Management. 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.



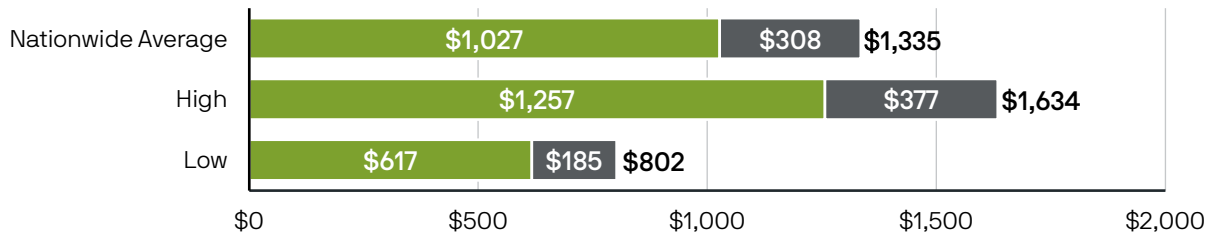
Health care costs for retirees before age 65

Spending

2022 Marketplace¹ plan monthly cost estimate per person: non-smoker, age 64

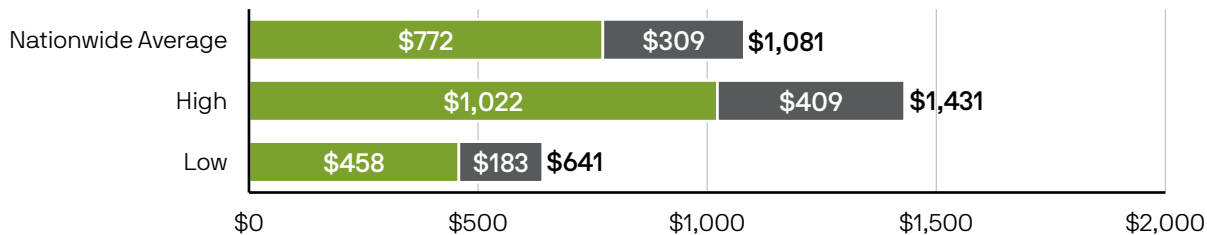
Silver Plan

(premium covers about 70% of costs for all enrollees in a plan)



Bronze Plan

(premium covers about 60% of costs for all enrollees in a plan)



■ Premium ■ Out-of-pocket estimate (average)

Cost will vary by geography and age. For your estimate:

<https://www.kff.org/interactive/subsidy-calculator/>

Tax credits were expanded to include more households through 2022.

Subsidies that limit out-of-pocket costs are usually incorporated into Marketplace Silver Plans for those who have Modified Adjusted Gross Income (MAGI) below \$32,200 individual / \$43,550 couple.

For those who do not qualify for a tax credit or a subsidy, be sure to compare Gold and Bronze Plans to Silver Plans purchased directly from the insurer.

¹Health insurance plans available through Healthcare.gov.

Not meant to be personal or tax advice. Does not include subsidies or tax credits that usually limit premium cost to 8.5% of income. In 2021 and 2022, premium tax credits were expanded per the American Rescue Plan Act (ARPA). In 2023 the tax credit is scheduled to revert to pre-2021 criteria, which requires MAGI (Modified Adjusted Gross Income) less than \$51,520 individual / \$69,680 couple. Subsidies that reduce out-of-pocket maximums may be available for those with a Silver Plan. 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.

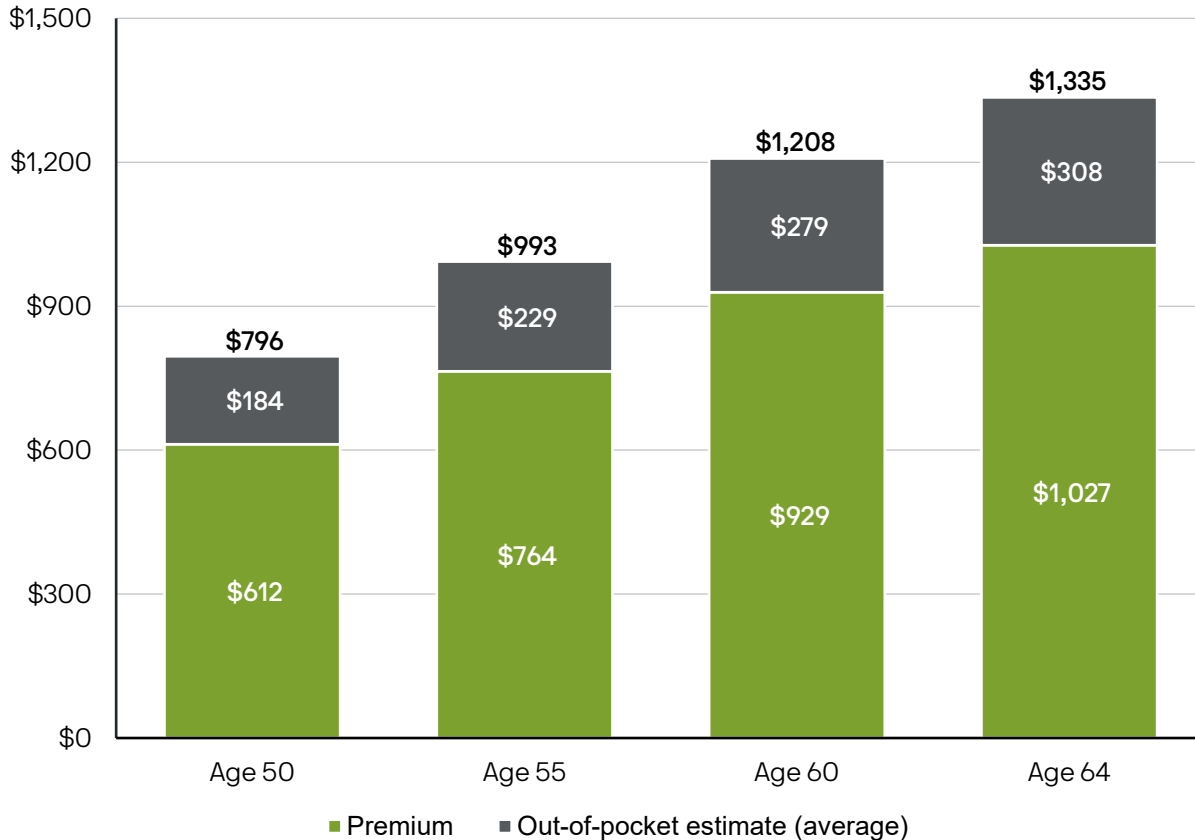
Source: Healthcare.gov, Kaiser Family Foundation subsidy calculator as of December 7, 2021, <https://www.kff.org/interactive/subsidy-calculator/>. Low costs shown above are for zip code 11217 in Brooklyn, New York, and high costs are for zip code 32320 in Apalachicola, Florida. Subsidy information from Kaiser Family Foundation website as of December 7, 2021.



Marketplace plan costs usually increase with age

2022 Marketplace Silver plan monthly cost per person: non-smoker, national average

Spending



Understand costs specific to your situation

Marketplace plan insurers typically charge older individuals more than younger ones.

To account for age-related increases plus inflation, use an annual cost increase of 6.0% for health care costs prior to Medicare eligibility.

Cost trends and increases due to age vary by geography. For more information: <https://www.kff.org/interactive/subsidy-calculator/>

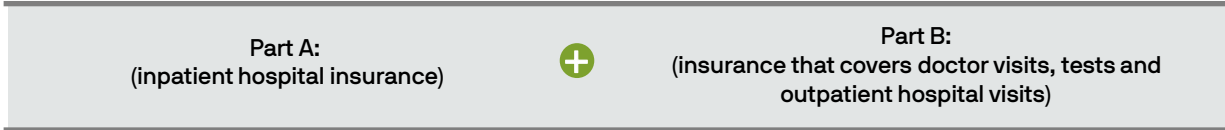
This is not meant to be personal advice. For information about your options, go to Healthcare.gov. Source: Healthcare.gov, Kaiser Family Foundation subsidy calculator as of December 6, 2021, <https://www.kff.org/interactive/subsidy-calculator/>



Three steps for Medicare coverage

Spending

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



2 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	✗ Not included. You may buy a separate policy
Option 2 Medicare Advantage/ Part C limited to a network of providers	✗ 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 aren't 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 income¹

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.

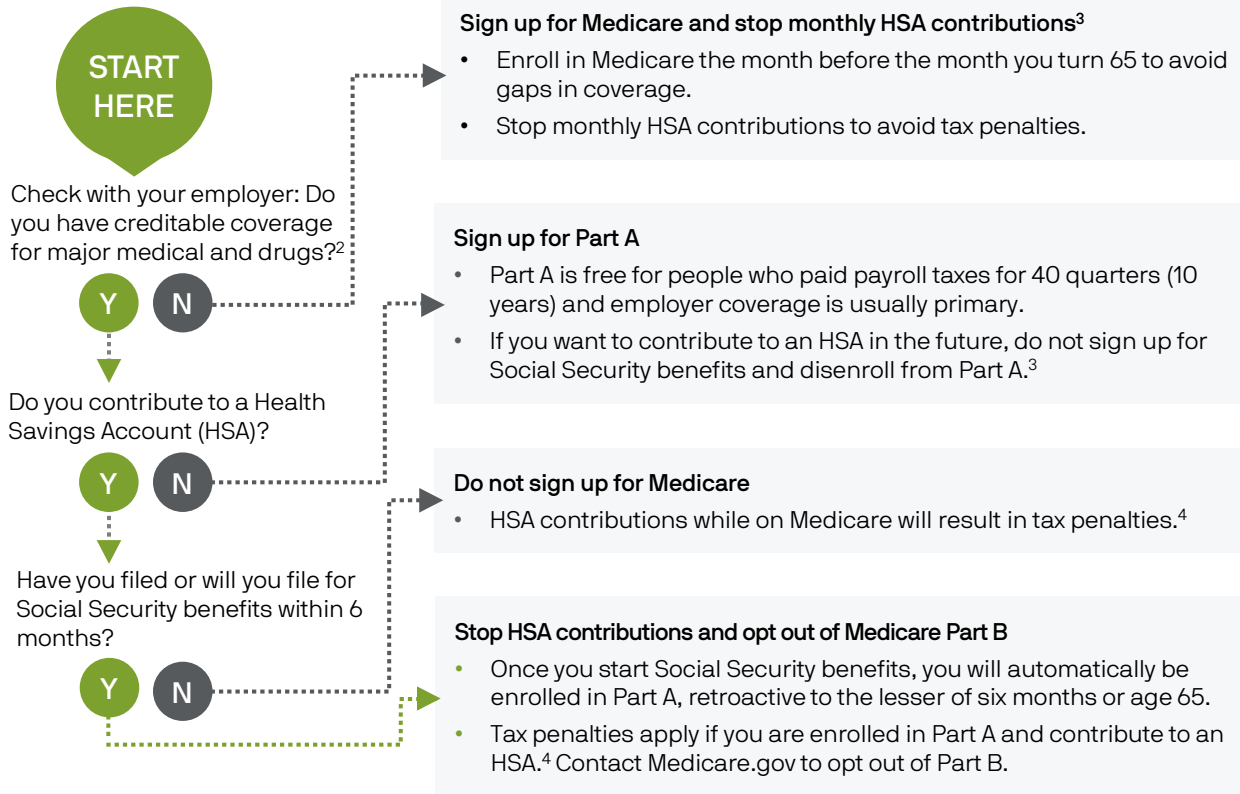
¹Medicare does pay for medically necessary skilled nursing facility or home health care with strict requirements that are difficult to meet on a limited basis and for some hospice care. If you transfer assets to others there is a five-year "look back" where the government will recover the assets transferred if you go on Medicaid. This is not personal advice. Consult an eldercare attorney if you have questions. Source: Medicare.gov as of December 31, 2021; 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 65¹

Spending



Avoid coverage gaps and penalties

Creditable coverage is key. Late enrollment penalties will apply if you don't have creditable coverage and don't 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).

¹Assumes 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.

²Ask 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.

³To 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.

⁴Total 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.

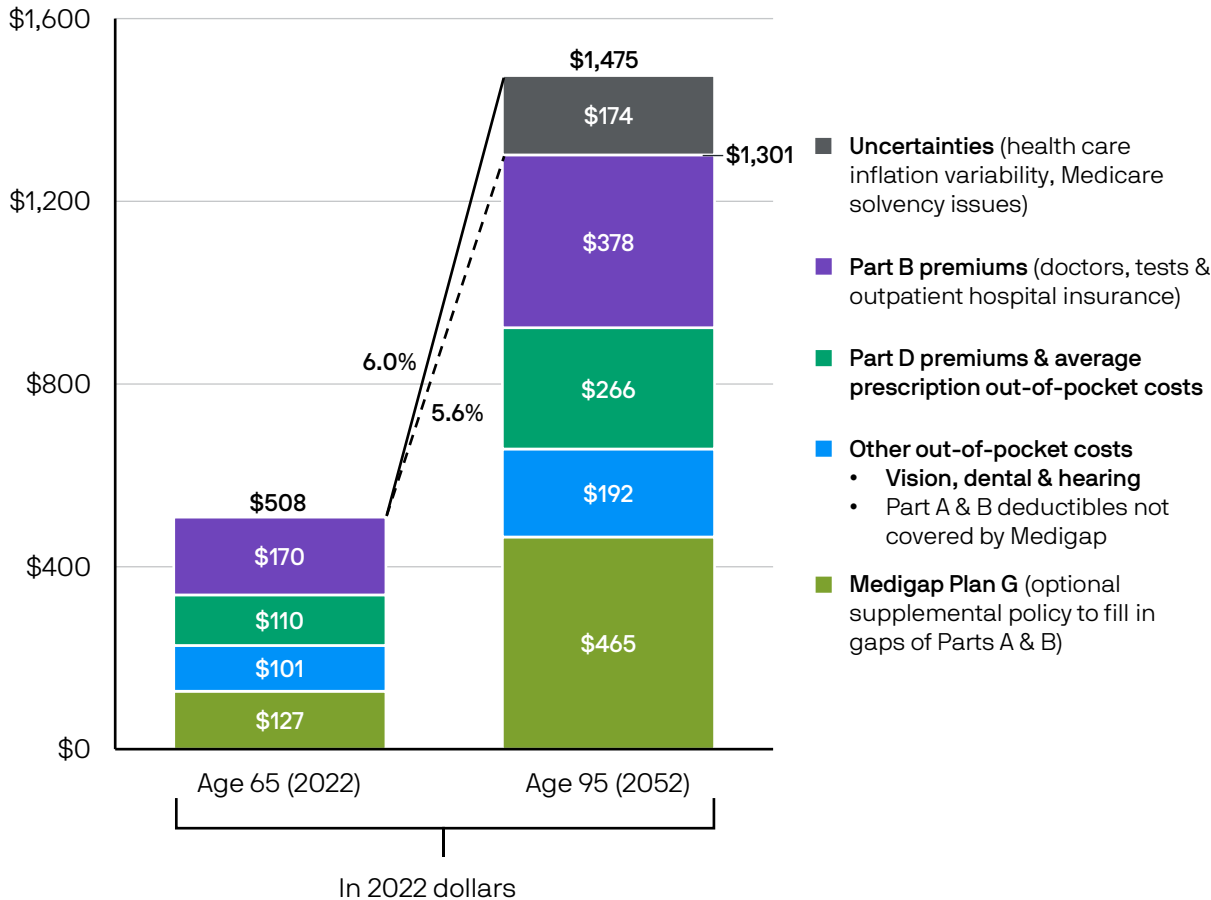
Source: IRS Publication 969, National Council on Aging and Medicare.gov websites as of December 31, 2020; J.P. Morgan Asset Management analysis.



Rising health care costs in retirement

Spending

Original Medicare costs in retirement (in 2022 dollars)
Monthly amount per person



A growing concern

Annual expenses per person in 2022 are \$6,096.

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.

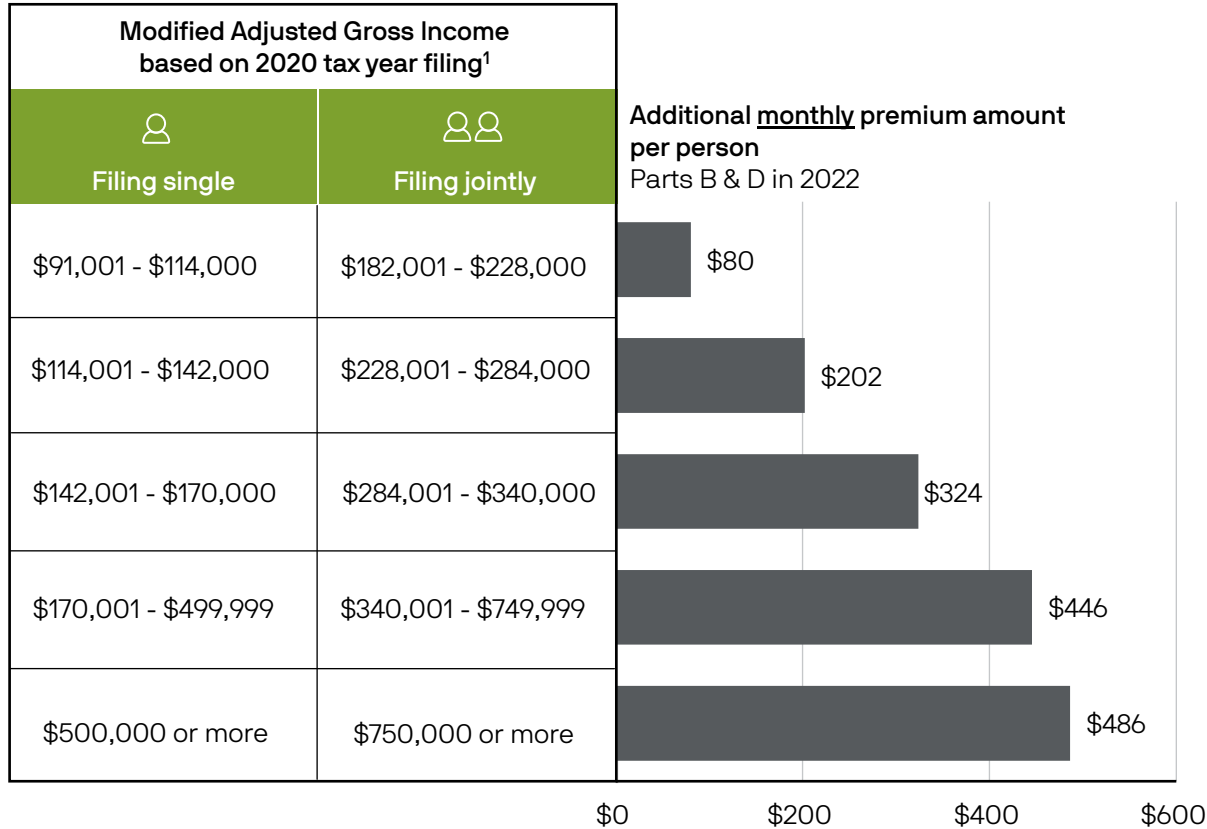
Estimated future value total average monthly cost at age 95 is \$2,917. Today's dollar calculation used a 2.3% discount rate to account for overall inflation. Medigap premiums typically increase with age, in addition to inflation, except for the following states: AR, CT, MA, ME, MN, NY, VT, WA. For local 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 2022 used by permission.



2022 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

Spending



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>

¹The 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 7, 2021.

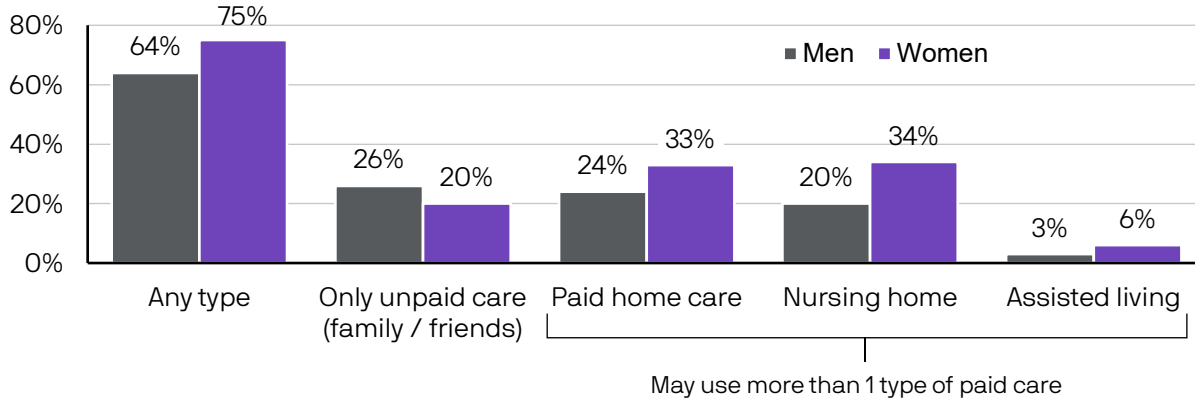
This is not meant to be personal tax advice. Please consult your tax professional for specifics for your situation. Modified Adjusted Gross Income (MAGI) for purposes of calculating Medicare surcharges is Adjusted Gross Income (AGI) plus tax-exempt interest income. Thresholds increase each year with inflation starting in 2020, except the top threshold, which was added in 2019; this top threshold is set to annually inflate starting in 2028.



Long-term care planning

Spending

Lifetime probability of needing assistance with two or more activities of daily living



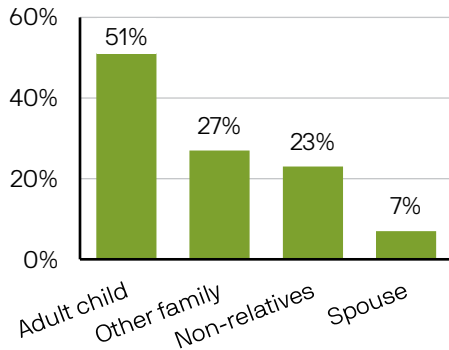
Create a care plan

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

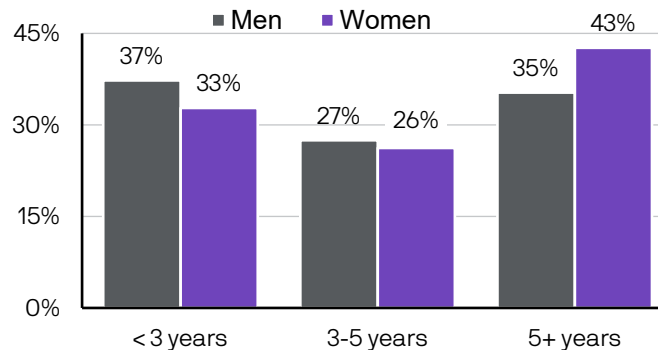
Women are more likely to require care and need more years of paid care if paid care is used.

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.

Providers of unpaid eldercare



Duration of paid care age 65+ if paid care is used



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 the top chart, nursing home stays of less than 90 days are excluded because they may include recovery from injuries. Unpaid caregivers may care for more than 1 person.

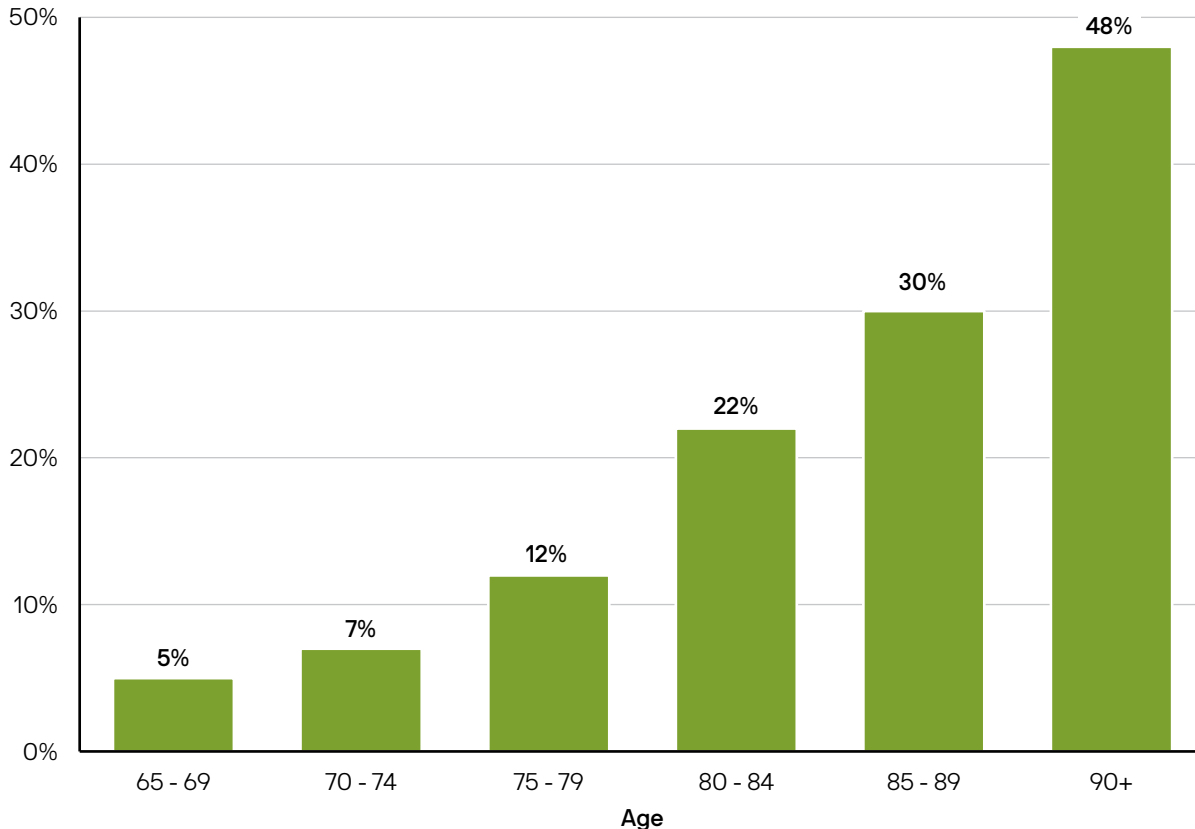
Source: U.S. Department of Health and Human Services, ASPE Issue Brief, April 2019, What is the long-term risk of needing and receiving long-term services and supports, Table 3; U.S. Government Accountability Office, GAO-19-382, Retirement Security, Some Parental and Spousal Caregivers Face Financial Risk, May 2019, Figure 1; U.S. Department of Health and Human Services, APSE Brief, January 2021, Long-term Services and Supports for Older Americans, Risks and Financing, 2020, Table 1. Latest data available as of December 31, 2021.



Disability incidence increases with age

Spending

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.

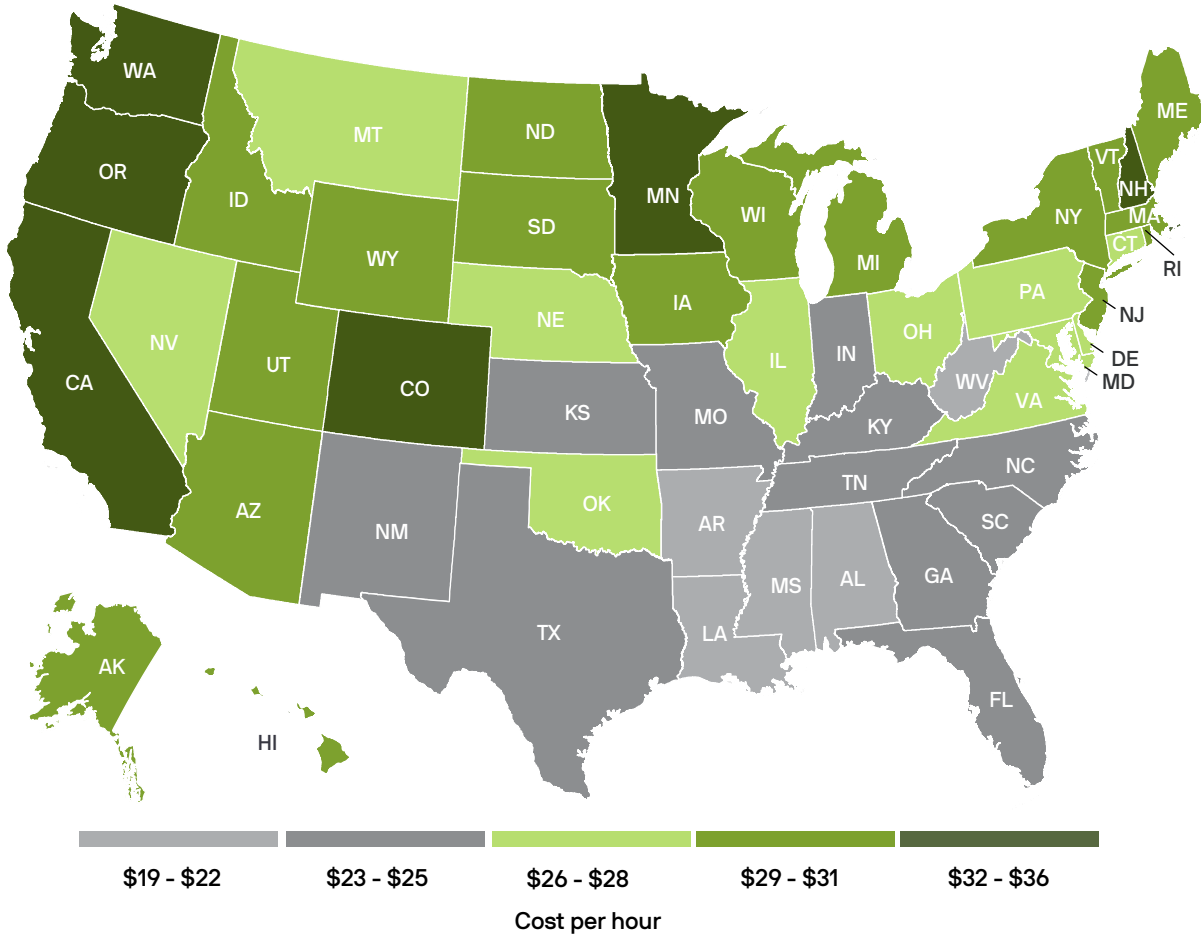
HIPPA qualifying long-term care includes needing help with two or more activities of daily living such as eating, dressing, bathing, transferring and toileting or severe cognitive impairment for at least 3 months.

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.



Median cost of a home health aide

Spending



The cost of care

The median cost for a home health aide is \$27 an hour but can vary widely. While the most common starting point for care is at home, it may progress to other settings.

The national annual median cost for a private room in a nursing home is \$108,400. These costs are commonly between \$90,000 and \$145,000 but may be lower or higher. For costs specific to your area:

www.genworth.com/costofcare

Source: Genworth Cost of Care Survey 2021, conducted by CareScout®, July-Sept., 2021. © 2021 Genworth Financial, Inc. All rights reserved. Methodology document: Genworth Cost of Care Summary Findings and Methodology. Costs vary within states. Median values are rounded to the nearest dollar. Annualized median cost inflation for home health aides from 2004 to 2020 was 1.9%; 2019-2020 was 4.4%. Annualized median cost inflation for a private room in a nursing home from 2004 to 2020 was 3.1%; 2019-2020 was 3.6%. For more information on the cost of care in your location, see the Genworth website: www.genworth.com/costofcare. J.P. Morgan Asset Management analysis: Consider using an annual inflation rate of 3.8% when planning for these costs.



Long-term care planning options

Spending

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/>



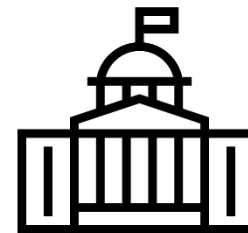
Home equity

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 qualify¹



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.

¹If 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.

²There are about 1,900 Life Plan Communities (LPCs) in the United States according to Zeigler and Company.

³HSAs 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 13, 2021.



Goals-based wealth management

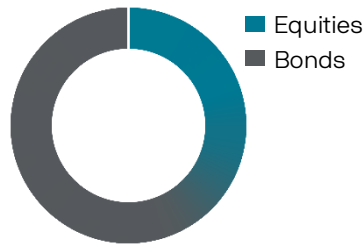
Short-term goals

Includes emergency reserve fund of total spending needs for 3-6 months



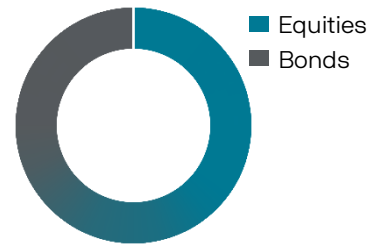
Medium-term goals

5-10 years, e.g., college, home



Long-term goals

15+ years, e.g., retirement



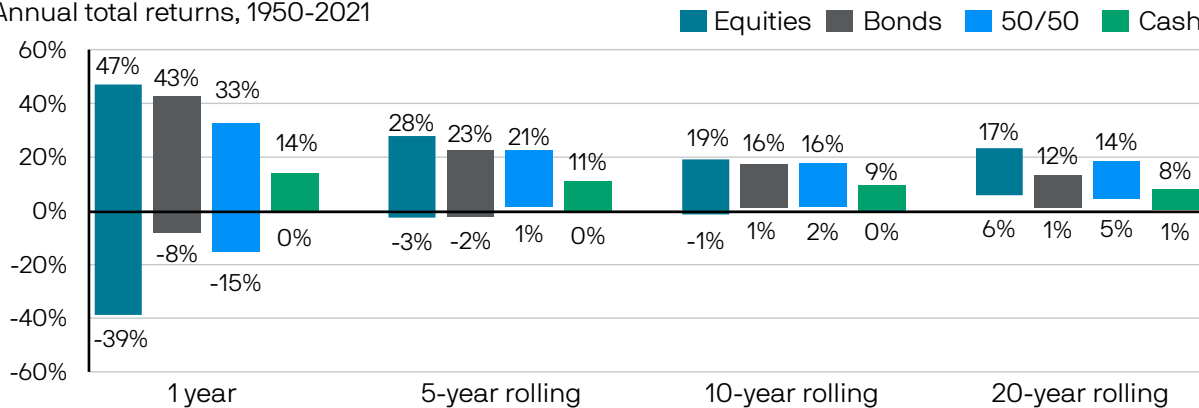
Divide and conquer

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.

Investing

Range of stock, bond and blended total returns

Annual total returns, 1950-2021



Source (top chart): J.P. Morgan Asset Management.

Source (bottom chart): Bloomberg, FactSet, Federal Reserve, Robert Shiller, Strategas/Ibbotson, J.P. Morgan Asset Management.

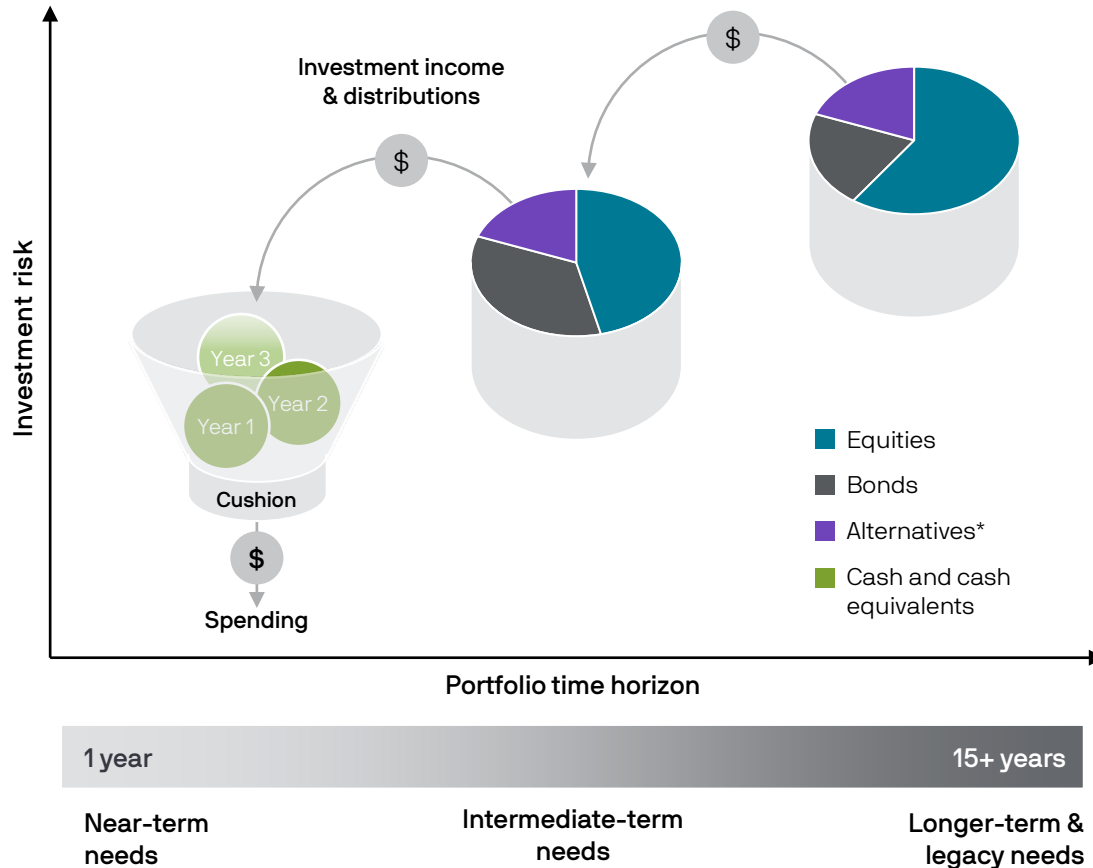
Returns shown are based on calendar year returns from 1950 to 2021. Stocks represent the S&P 500 Shiller Composite and Bonds represent Strategas/Ibbotson for periods from 1950 to 2010 and the Bloomberg Aggregate thereafter. Cash represents the U.S. 90 Day Treasury Bill Total Return.

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 in retirement: the bucket strategy

Investing



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.



Structuring a portfolio to match investor goals in retirement

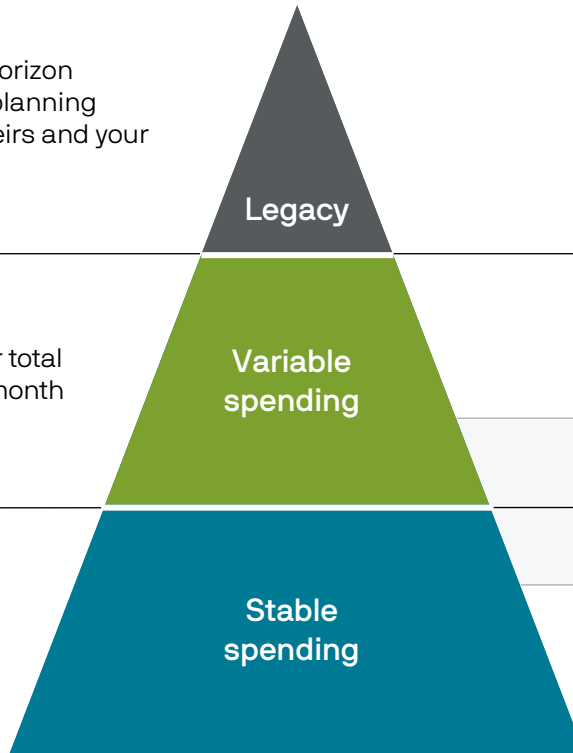
Investing

Considerations

What is the time horizon and appropriate planning vehicle 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.

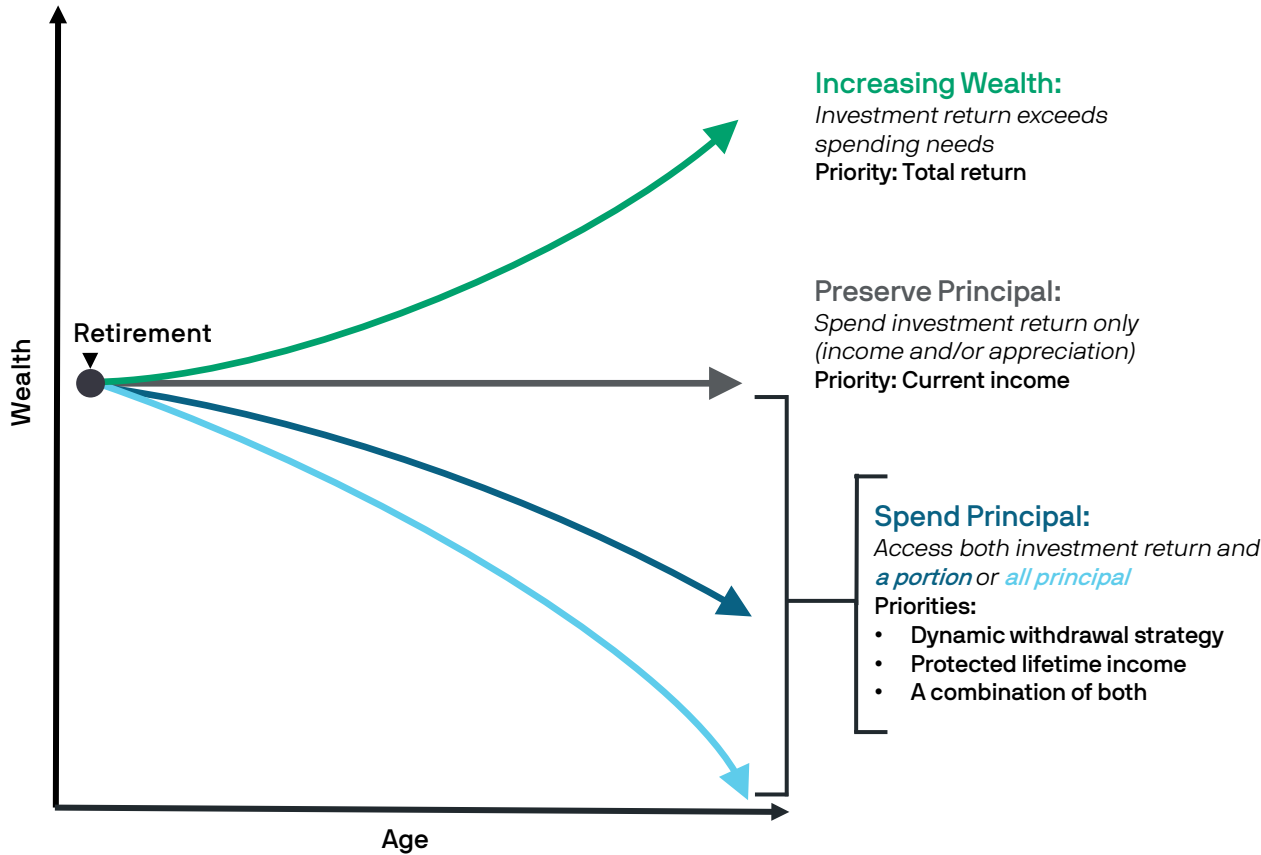
Source: J.P. Morgan Asset Management.



Retirement profiles by planning outcome

Investing

Retirement investable wealth profiles and diversified portfolio priorities



Align your objective with your outcome

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

To find the right balance, your projected outcome from your retirement plan can help you identify which of these to consider making a priority for your diversified portfolio.

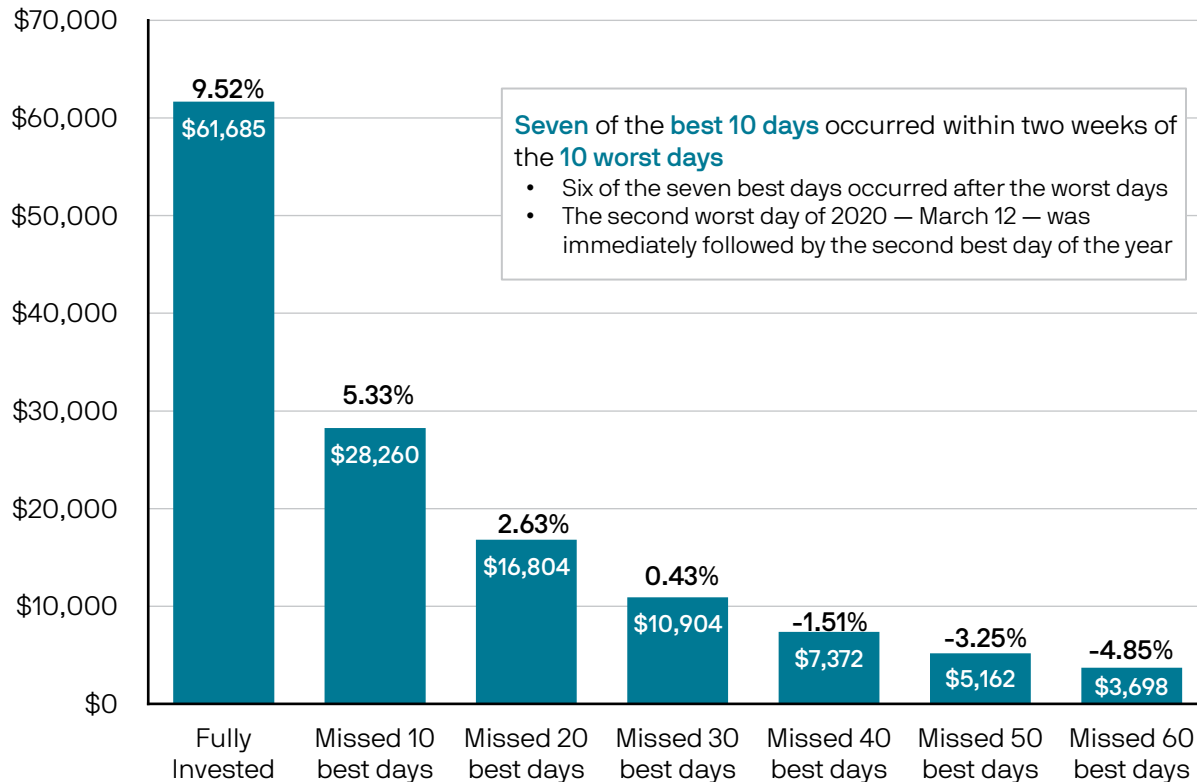
Source: J.P. Morgan Asset Management; Minney, Aaron. "Adding Direction to the Consumption Rate in Retirement." Journal of Retirement, Summer 2017, page 108.



Impact of being out of the market

Returns of the S&P 500

Performance of a \$10,000 investment between January 1, 2002 and December 31, 2021



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.

Investing

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, 2021.



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

Defined Contribution

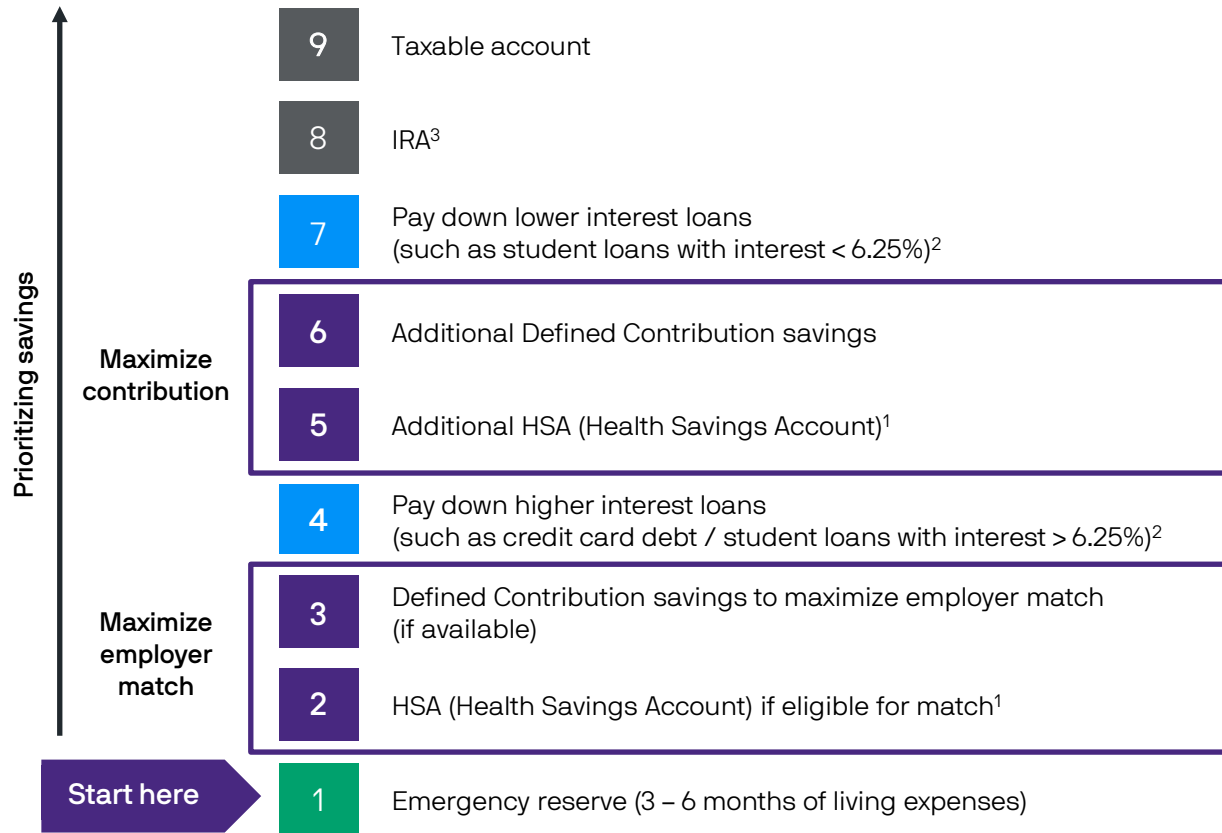
Federal taxes; states may differ. This is not intended to be individual tax advice. Consult your tax professional.

¹Income 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. ²Withdrawals 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. ³There 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



Getting started

Start with emergency savings 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

¹Must 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.

²This assumes that a diversified portfolio may earn 6.25% 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.

³Income 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.

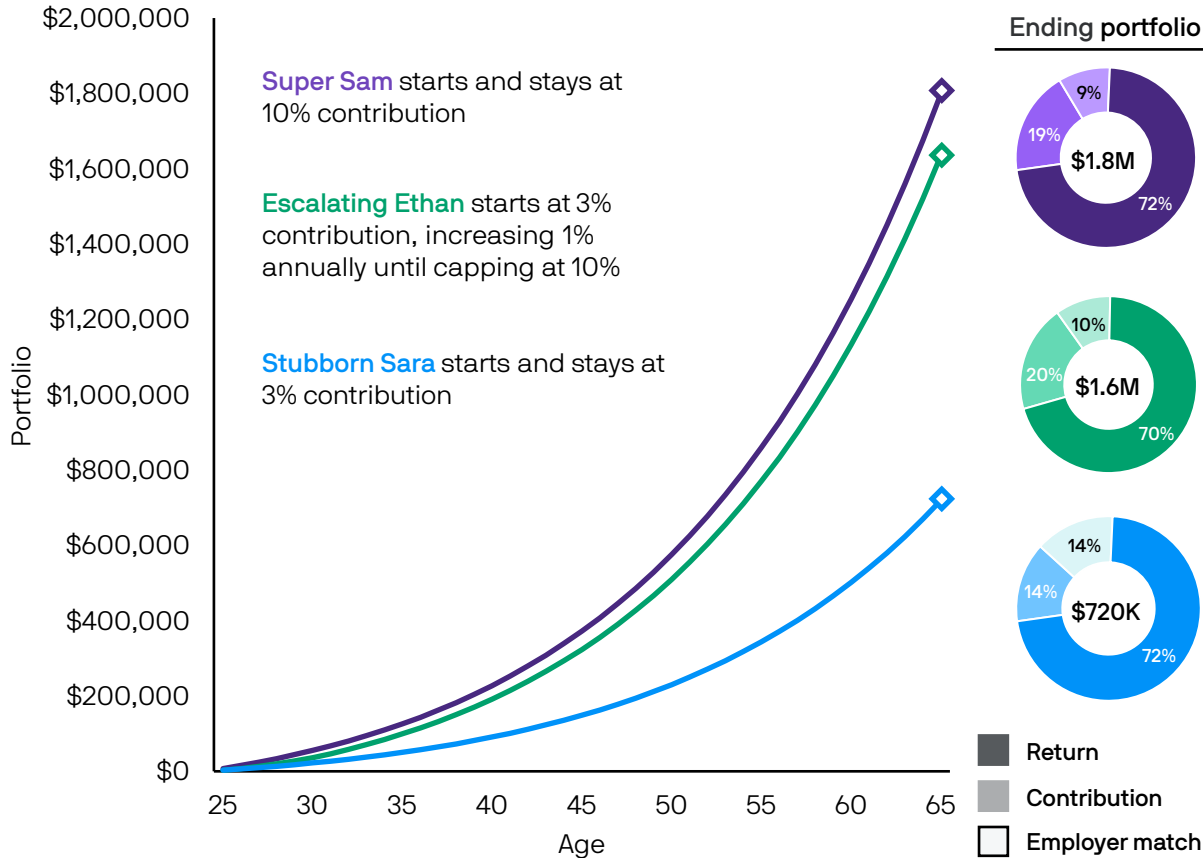
⁴Examples of low-cost funding sources include cash and current income.

Source: J.P. Morgan Asset Management analysis. Not intended to be a personal financial plan.



The benefits of auto-escalation

Account growth from contributions, employer match and investment returns



Model assumptions

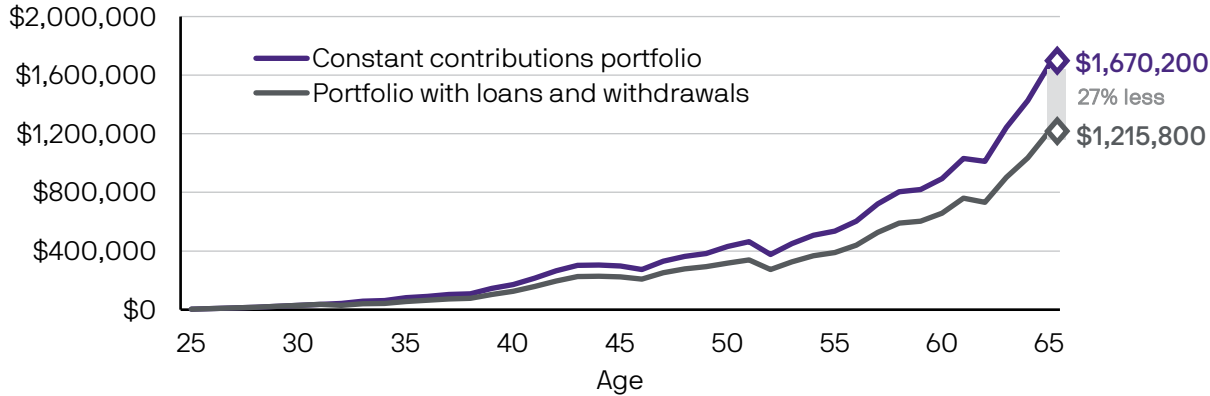
- Start age: 25
- Retirement age: 65
- Starting salary: \$50,000
- Wage growth: 2.3%
- Assumed annual employer match: 100% of employee contribution up to 5%
- Investment return: 6.25%

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

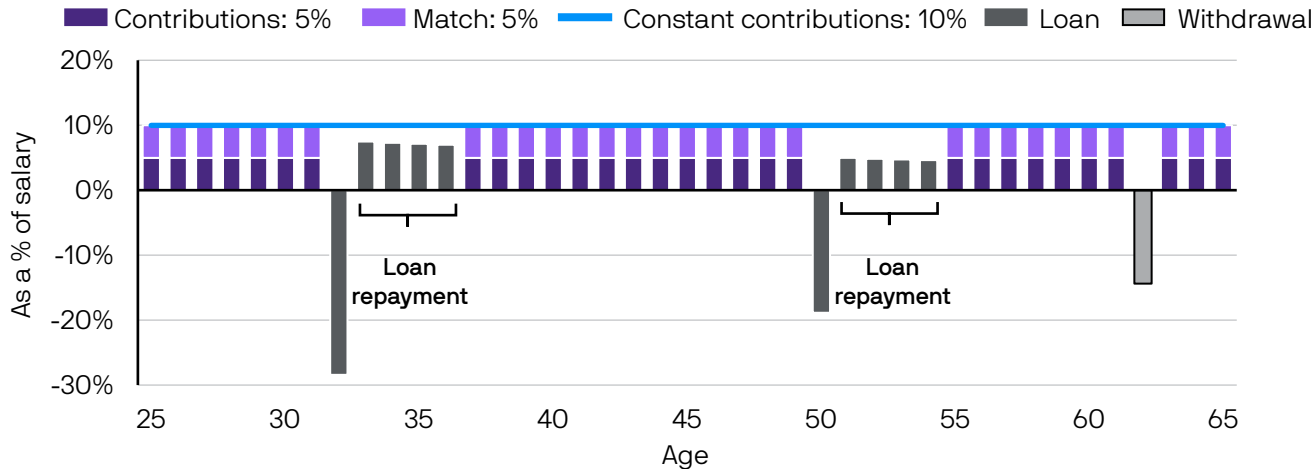


Mitigate the effects of loans

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.

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

Defined Contribution



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 1981 to 2021. Starting salary of \$30,000 increases by 2.3% 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.



Traditional IRAs vs. Roth IRAs: 2021/2022

	Traditional IRA	Roth IRA
Maximum contribution 2022	<ul style="list-style-type: none"> • \$6,000 (earned income) • \$7,000 (age 50 and over)¹ • Reduced by Roth IRA contributions 	<ul style="list-style-type: none"> • \$6,000 (earned income) • \$7,000 (age 50 and over)¹ • Reduced by Traditional IRA contributions
Tax-deductibility income limits (Traditional IRA) and contribution income limits (Roth IRA)	<p>If you or your spouse is covered by a retirement plan at work, tax deductibility of contributions phases out at these income levels:</p> <p>2021 Single: \$66,000-\$76,000² Married: \$105,000-\$125,000²</p> <p>2022 Single: \$68,000-\$78,000² Married: \$109,000-\$129,000²</p>	<p>Contributions are non-deductible; employer plan coverage does not change the contribution phase-out limits:</p> <p>2021 Single: \$125,000-\$140,000 Married: \$198,000-\$208,000</p> <p>2022 Single: \$129,000-\$144,000 Married: \$204,000-\$214,000</p>
Federal tax treatment	<ul style="list-style-type: none"> • Investment growth is tax deferred and contributions may be tax deductible. Deductible contributions and investment gains are taxed as ordinary income upon withdrawal. • If non-deductible contributions have been made, each withdrawal is taxed proportionately on a pro-rata basis, taking into consideration all contributions made to all Traditional IRAs owned. 	<ul style="list-style-type: none"> • Taxes are due upon conversion of account balances not yet taxed. • Qualified withdrawals of contributions at any time are tax free and IRS penalty free; converted amounts may be withdrawn tax free.³ • Qualified withdrawals of earnings are tax free and IRS penalty free if taken after five years have passed since the account was initially funded and the account owner is age 59½ or older (other exceptions may be applicable). • Multiple Roth IRAs are considered one Roth IRA for withdrawal purposes and distributions MUST be withdrawn in a specific order deemed by the IRS that applies regardless of which Roth IRA is used to take that distribution.
Early withdrawals	Early withdrawals before age 59½ are generally subject to a 10% IRS penalty unless certain exceptions apply.	
Mandatory withdrawals	By April 1 of the year after turning 72 (70½ for those born prior to July 1, 1949).	None for account owner
Deadline to contribute	<p>2021: April 15, 2022</p> <p>2022: April 15, 2023</p>	<p>2021: April 15, 2022</p> <p>2022: April 15, 2023</p>

Reference

¹Must be age 50 or older by December 31 of the contribution year. IRS Publication 590.

²Assumes participation in an employer's retirement plan. No income limits apply when investors and spouses are not covered by a retirement plan at work. Income limits based on Modified AGI (Adjusted Gross Income less certain deductions). Use Worksheet 1-1 in IRS Publication 590-A or consult your tax professional.

³Distributions from a conversion amount must satisfy a five-year investment period to avoid the 10% penalty. This pertains only to the conversion amount that was treated as income for tax purposes. The presenter of this slide is not a tax or legal professional. Clients should consult a personal tax or legal professional prior to making any tax- or legal-related investment decisions. IRS Publication 590.

Source: IRS.gov; IRS Notice 2021-61.



Retirement plan contribution and deferral limits: 2021/2022

Type of Retirement Account	Specifics	2021	2022
401(k), 403(b), 457(b)	401(k) elective deferral limit/with catch-up contribution (age 50 and over)	\$19,500/\$26,000	\$20,500/\$27,000
	Annual defined contribution limit	\$58,000	\$61,000
	Annual compensation limit	\$290,000	\$305,000
	Highly compensated employee threshold	\$130,000	\$135,000
	403(b)/457 elective deferrals/with catch-up contribution (age 50 and over)	\$19,500/\$26,000	\$20,500/\$27,000
SIMPLE IRA	SIMPLE employee deferrals/with catch-up deferral (age 50 and over) ¹	\$13,500/\$16,500	\$14,000/\$17,000
SEP IRA	Maximum contribution ²	\$58,000	\$61,000
	SEP minimum compensation	\$650	\$650
	SEP annual compensation limit	\$290,000	\$305,000
Health Savings Account (HSA)	Maximum contribution amount/with catch-up contribution (age 55 and over)	Single: \$3,600/\$4,600 Family: \$7,200/\$8,200	Single: \$3,650/\$4,650 Family: \$7,300/\$8,300
	Minimum deductible	Single: \$1,400 Family: \$2,800	Single: \$1,400 Family: \$2,800
	Maximum out-of-pocket expenses	Single: \$7,000 Family: \$14,000	Single: \$7,050 Family: \$14,100
Social Security	Wage base	\$142,800	\$147,000
	Maximum earnings test exempt amounts ³	\$18,960/year (before FRA*) \$50,520/year (in year of FRA*)	\$19,560/year (before FRA*) \$51,960/year (in year of FRA*)
	Maximum Social Security benefit at FRA*	\$3,113/month	\$3,240/month
Defined benefit – Maximum annual benefit at retirement		\$230,000	\$245,000

Reference

*FRA is Full Retirement Age for Social Security.

¹Employer may either match employee's salary reduction contributions dollar for dollar up to 3% of employee's compensation or make non-elective contributions equal to 2% of compensation up to the annual compensation limit. IRS Publication 560.

²Employer contributions may not exceed the annual defined contribution limit or 25% of compensation. Other rules apply for self-employed individuals. IRS Publication 560.

³In calendar years before FRA, benefit reduced \$1 for every \$2 of earned income above the limit; during year of FRA, benefit reduced \$1 for every \$3 of earned income in months prior to FRA.

Source: IRS.gov; IRS Notice 2021-61; Internal Revenue Procedure 2021-25; SSA.gov; Social Security Administration Fact Sheet: 2022 Social Security changes.



A closer look at tax rates: 2022

Federal income tax rates applicable to taxable income

Tax rate	Single filers	Married filing jointly	Capital gains & dividends	Medicare tax on earned income	Medicare tax on investment income	Limits to itemized deductions
10%	Up to \$10,275	Up to \$20,550	0% up to \$41,675 (single) / \$83,350 (married)	1.45% (employee portion, employers also pay 1.45%)	0%	<ul style="list-style-type: none"> -Medical expenses greater than 7.5% of AGI deductible -SALT (state and local taxes) deduction capped at \$10,000 -Mortgage interest deduction limited to primary/secondary homes with up to \$750,000 new debt. Deduction is allowed on new home equity debt that is used to repair, build or improve upon home -Cash charitable gifts deductible up to 60% of AGI
12%	\$10,275-\$41,775	\$20,550-\$83,550				
22%	\$41,775-\$89,075	\$83,550-\$178,150				
24%	\$89,075-\$170,050	\$178,150-\$340,100				
32%	\$170,050-\$215,950	\$340,100-\$431,900				
35%	\$215,950-\$539,900	\$431,900-\$647,850	15% up to \$459,750 (single) / \$517,200 (married)	2.35% (includes 1.45% employee tax referenced above plus additional 0.90% tax for earned income above MAGI* \$200,000/\$250,000 threshold)	3.80% (additional tax will be levied on lesser of i) net investment income or ii) excess MAGI above \$200,000/\$250,000 threshold)	
37%	\$539,900 or more	\$647,850 or more				20%

The personal exemption has been repealed and individual tax rates and personal deductions sunset after 2025 as per the TCJA 2017. Standard deduction: Single \$12,950; Married filing jointly \$25,900.

*Modified Adjusted Gross Income (MAGI) is AGI plus amount excluded from income as foreign earned income, tax-exempt interest and Social Security benefit.

Top/tax rates for ordinary income, capital gains and dividend income

Type of gain	Maximum rate	Alternative Minimum Tax (AMT) exemption**		
		Filing status	Exemption	Exemption phase-out range
Top rate for ordinary income & non-qualified dividends	37%/40.8%*	Single/Head of Household	\$75,900	\$539,900-\$843,500
Short-term capital gains (assets held 12 months or less)	37%/40.8%*	Married filing jointly	\$118,100	\$1,079,800-1,552,200
Long-term capital gains (assets held more than 12 months) & qualified dividends	20%/23.8%*			

*Includes top tax rate plus 3.8% Medicare tax on the lesser of net investment income or excess of MAGI over threshold (single threshold \$200,000; married filing jointly \$250,000).

**The exemption amount is reduced .25 for every \$1 of AMTI (income) above the threshold amount for the taxpayer's filing status. For AMTI above the top range the exemption will be \$0.

Federal estate, generation-skipping transfer (GST) tax & gift tax exemption

Top federal estate tax rate	40%
Federal estate, GST & gift tax exemption	\$12.06 million per individual/\$24.12 million per couple*
Annual gift tax exclusion	\$16,000 per donor, per donee (\$32,000 per couple)

*Increased levels expire after 2025.

Source: IRS.gov. The presenter of this slide is not a tax or legal professional. This slide is for informational purposes only and should not be relied on as tax or legal advice. Clients should consult their tax or legal professional before making any tax- or legal-related investment decisions.



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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.

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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.

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Model Portfolio Details (Equity%/Bond%) Source: PI-AA-MODELS_4Q20 0903c02a81cfc27a

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.

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