RETIREMENT INSIGHTS

Principles for a successful retirement

Using Insights to achieve better client outcomes

J.P.Morgan
Asset Management

TAKE CONTROL OF YOUR RETIREMENT

ACHIEVING YOUR RETIREMENT GOALS TAKES DISCIPLINED SAVING, SPENDING AND INVESTING—ALL OF WHICH CAN FEEL OVERWHELMING, ESPECIALLY AS THE RETIREMENT LANDSCAPE CONTINUES TO CHANGE. IT'S TIMES LIKE THESE WHEN A FINANCIAL ADVISOR CAN HELP YOU FOCUS ON WHAT MATTERS MOST TO YOUR FINANCIAL FUTURE. THIS BOOKLET CAN HELP TOO. IT USES SLIDES FROM OUR AWARD-WINNING ***GUIDE TO RETIREMENT*** TO PRESENT SEVEN ESSENTIAL RETIREMENT PLANNING PRINCIPLES. TOGETHER WITH GUIDANCE FROM YOUR ADVISOR, IT CAN GIVE YOU THE CONTROL AND CONFIDENCE TO MAKE MORE INFORMED DECISIONS AND TAKE POSITIVE STEPS TOWARD A SUCCESSFUL RETIREMENT.

PRINCIPLES FOR A SUCCESSFUL RETIREMENT

1. CREATE THE PLAN YOU NEED FOR THE RETIREMENT YOU WANT
2. USE TIME TO YOUR ADVANTAGE
3. PLAN FOR A LONG LIFE
4. MAKE AN INFORMED DECISION ABOUT SOCIAL SECURITY
5. KNOW WHAT TO EXPECT WITH HEALTH CARE COSTS
6. MINIMIZE YOUR TAXES TO MAXIMIZE YOUR RETIREMENT
7. DON'T SPEND TOO MUCH OR INVEST TOO CONSERVATIVELY

1 CREATE THE PLAN YOU NEED FOR THE RETIREMENT YOU WANT

Define your goal and craft a plan–know your checkpoint

A retirement plan doesn't have to be daunting—it's important to just get started. Once you know where you're heading, a comprehensive retirement plan is like any good GPS. It helps you get and stay on track to your destination—even as your life, the markets and the economy change.

The retirement savings checkpoint tells you how much you should have invested today to be on pace toward maintaining your current lifestyle through 30 years of retirement. If you're below your checkpoint today or have a very different vision for your retirement tomorrow, you may need to work with a financial advisor to adjust your plan. Be sure to review and update it regularly.

Save, save, save

A key factor in achieving a successful retirement is to save as much as possible during your working years. Your checkpoint assumes that you save 10% of your gross annual income each and every year—nearly twice the average annual savings rate in America. The good news is that you are in complete control of how much you save, and your employer may help with a company match, so make savings a priority.

Retirement savings checkpoints

Saving

Current age	$100,000	$125,000	$150,000	$175,000	$200,000	$250,000	$300,000
	Checkpoint (x current household income)						
25	0.1	0.2	0.4	0.6	0.7	0.9	1.0
30	0.6	0.8	1.0	1.2	1.4	1.6	1.8
35	1.3	1.5	1.8	2.0	2.2	2.5	2.7
40	2.1	2.3	2.7	3.0	3.2	3.6	3.8
45	3.0	3.3	3.8	4.2	4.4	4.9	5.1
50	4.2	4.6	5.1	5.6	5.9	6.4	6.8
55	5.6	6.1	6.7	7.3	7.7	8.3	8.7
60	7.3	7.9	8.7	9.4	9.8	10.6	11.1
65	9.6	10.3	11.3	12.1	12.7	13.7	14.3

MODEL ASSUMPTIONS

Annual gross savings rate: **10%***

Pre-retirement investment return: **6.0%**

Post-retirement investment return: **5.0%**

Inflation rate: **2.0%**

Retirement age –
- Primary earner: **65**
- Spouse: **62**

Years in retirement: **30**

*10% is approximately twice the U.S. average annual savings rate

How to use:
- This analysis assumes you would like to maintain an equivalent lifestyle in retirement.
- Household income is assumed to be gross income (before tax and savings).
- Go to the intersection of your current age and your closest current household income.
- Multiply your salary 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 2.1 = $210,000.

This chart is for illustrative purposes only and must not be relied upon to make investment decisions. J.P. Morgan's model is based on J.P. Morgan Asset Management's (JPMAM) proprietary long-term capital market assumptions (10-15 years) and an 80% confidence level. Household income replacement rates are derived from an inflation-adjusted analysis of: Consumer Expenditure Survey (BLS) data (2013-2016); Social Security benefits using modified scaled earnings in 2019 for a single wage earner at age 65 and a spousal benefit at age 62 reduced by Medicare Part B premiums. For more details, see slide 16.

Consult with a financial advisor for a more personalized assessment. Allocations, assumptions and expected returns are not meant to represent JPMAM performance. Given the complex risk/reward tradeoffs 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.

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2 USE TIME TO YOUR ADVANTAGE

Save and invest based on your time horizon

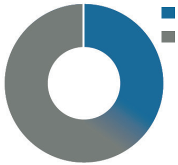
All goals are not created equal, so investing for them as one may not be the best plan. Instead, decide how much of your savings to put toward college, retirement and other goals based on your priorities. Next, create an investment strategy that allows you to take advantage of the longer investment horizon for goals with longer time frames. To keep your strategy on track, be sure to have a short-term fund that can cover emergencies without having to sell your investments during down markets.

Good things come to those who wait

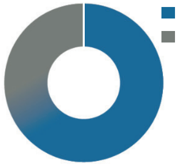
While markets can always have a bad day, week, month or even year, history suggests investors are less likely to suffer losses over longer periods.

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



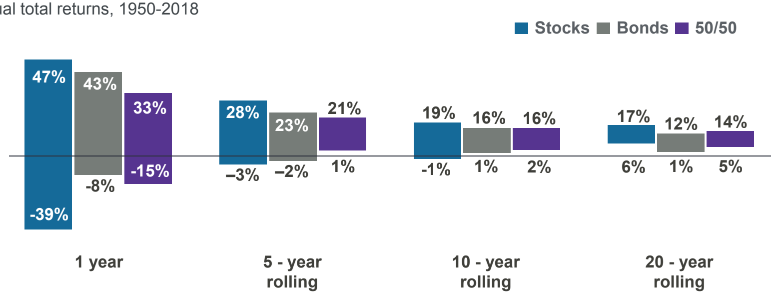
Long-term goals
15+ years, e.g. retirement



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.

Range of stock, bond and blended total returns
Annual total returns, 1950-2018



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

Source (bottom chart): Barclays, Bloomberg, FactSet, Federal Reserve, Robert Shiller, Strategas/Ibbotson, J.P. Morgan Asset Management. Returns shown are based on calendar year returns from 1950 to 2018. Stocks represent the S&P 500 Shiller Composite and Bonds represent Strategas/Ibbotson for periods from 1950 to 2010 and Bloomberg Barclays Aggregate thereafter. Growth of $100,000 is based on annual average total returns from 1950 to 2018.

Note: 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.

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3 PLAN FOR A LONG LIFE

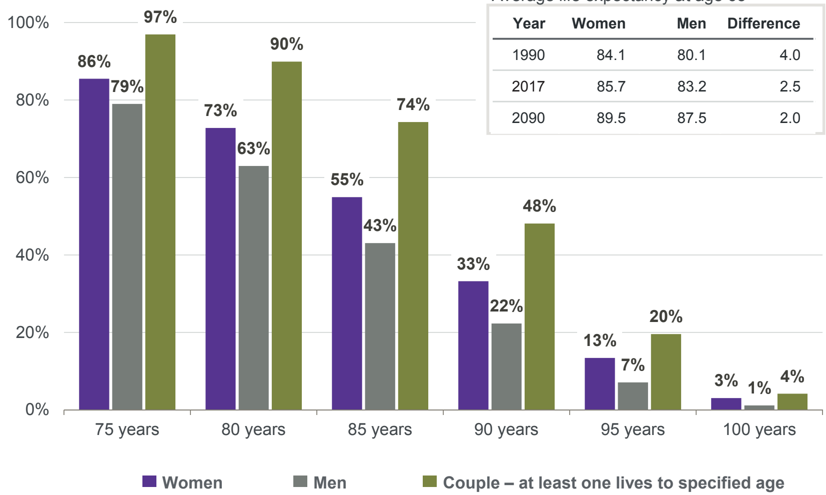
The longer you live, the longer your investments must last

At least one member of a 65-year-old couple now has a 90% chance of living to 80 or beyond, a nearly 50/50 chance of reaching 90 and a one-in-five chance of turning 95 or older. Living longer affects key retirement decisions such as how to make the most of your time, how to invest, when to claim Social Security and whether you might need long-term care.

If you're in good health at 65 and have a family history of longevity, your retirement plan should conservatively account for 30 or more years of living expenses. That means your investments need to continue growing long after you stop working to keep pace with inflation and reduce the risk of outliving your money.

Life expectancy probabilities

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



Average life expectancy at age 65

Year	Women	Men	Difference
1990	84.1	80.1	4.0
2017	85.7	83.2	2.5
2090	89.5	87.5	2.0

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 30+ years in retirement – and invest a portion of your portfolio for growth to maintain your purchasing power over time.

Chart: Social Security Administration, Period Life Table, 2015 (published in 2018), J.P. Morgan Asset Management.
Table: Social Security Administration 2018 OASDI Trustees Report.
Probability at least one member of a same-sex female couple lives to age 90 is 55% and a same-sex male couple is 40%.

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4 MAKE AN INFORMED DECISION ABOUT SOCIAL SECURITY (PART 1)

Social Security pays you more for waiting

Social Security benefits are calculated based on your 35 best earning years. You are eligible for 100% of your benefit at your Full Retirement Age (FRA). Individuals born in 1954 and earlier have an FRA of 66. Claiming at 62 will permanently reduce your benefit by as much as 25%. Waiting to claim after FRA gives you an 8% increase each year in your benefit amount for a maximum of 132%.

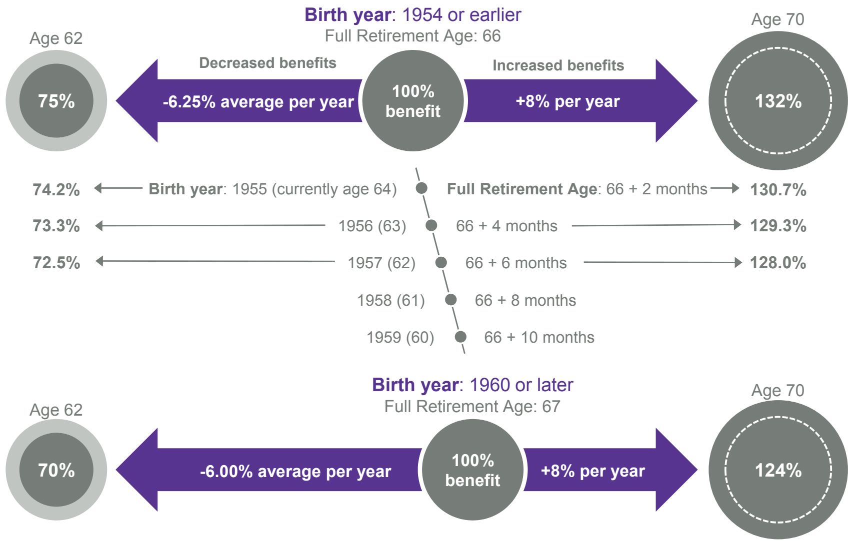
Times they are a-changing

Individuals turning 62 in 2019 will have an FRA of 66 and 6 months as a result of the Social Security Amendments Act of 1983. This Act moves FRA 2 months each year for 6 years until it reaches and stays at age 67 in 2022. An FRA of 67 results in even less if you claim early and not quite as much at age 70.

Retirement landscape

Benefits differ by birth year and claim age

Full Retirement Age = 100% benefit



Cost of living increase for benefits received in 2019	**2.8%**
Average cost of living adjustment (1985-2019)	**2.6%**

UNDERSTAND THE TRADEOFFS

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.

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

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4 MAKE AN INFORMED DECISION ABOUT SOCIAL SECURITY (PART 2)

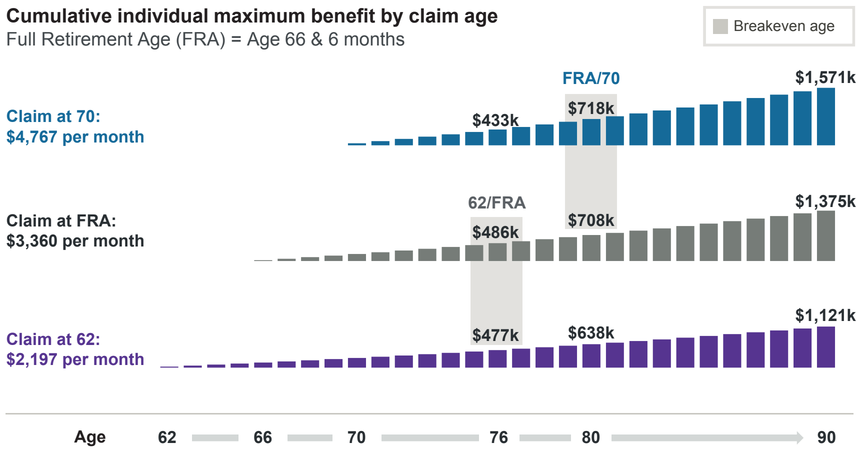
How long until waiting pays off?

Should you take smaller amounts sooner? Or wait for larger amounts later and rely on your portfolio in the meantime? If your goal is to maximize your cumulative benefit, the answer depends on how long you live. You would receive more in total at age 76 by claiming at FRA (66 and 6 months) rather than 62, and at age 80 when choosing between FRA and 70.

The odds of receiving more by waiting are in your favor

Because of the relatively high probability of living to 76 and 80, particularly if you are married, delaying Social Security often pays off in the long run—especially if you are the primary wage earner of a couple and your portfolio gives you that flexibility.

Maximizing Social Security benefits – maximum earner | 10



At age 62, probability of living to at least age:	62	66	70	76	80	90
Male	100%	94%	87%	73%	60%	21%
Female	100%	97%	92%	81%	71%	32%
Couple*	100%	99%	99%	95%	88%	47%

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 1957, earns the maximum wage base, retires at the end of age 61 and claims at 62 & 1 month, 66 & 6 months and 70, respectively. Benefits are assumed to increase each year based on the Social Security Administration 2018 Trustee's Report "intermediate" estimates (annual benefit increase of 2.7% in 2020 and 2.6% thereafter). Monthly amounts without the cost of living adjustments (not shown on the chart) are: $2,197 at age 62; $3,030 at FRA; and $3,879 at age 70. Exact breakeven ages are 76 & 4 months and 80 & 5 months.

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5 KNOW WHAT TO EXPECT WITH HEALTH CARE COSTS

Plan on rapidly rising expenses

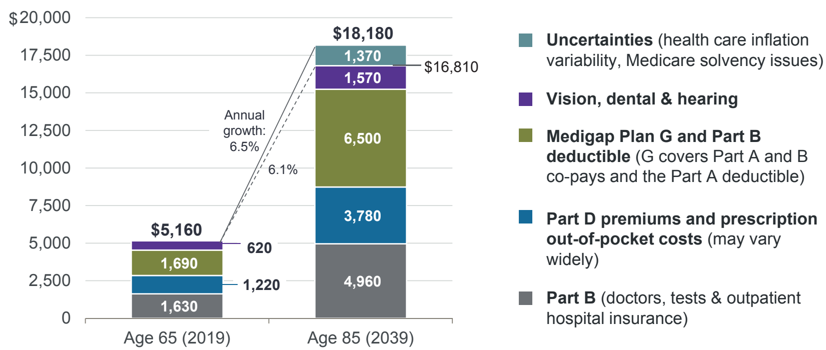
Medical expenses tend to rise sharply throughout retirement as we grow older and require more care at higher prices. Out-of-pocket costs for an average 65-year-old retiree on traditional Medicare are projected to more than triple from around $5,200 this year to over $18,000 by age 85.

These costs are averages per person and do not include most long-term care. Costs may be much higher if you have expensive prescriptions. And you'll pay more in Medicare premiums if your income is higher.

Include health care costs as a separate expense in your retirement plan and assume 6.5% annual inflation to be conservative. You may want to assess your long-term care alternatives when you are healthy, or as early as age 50, when the most options are available to you.

Rising annual health care costs in retirement

Traditional Medicare estimated median health care costs per person



A GROWING CONCERN

Given variation in health care cost inflation from year to year, it may be prudent to assume an annual health care inflation rate of 6.5%, which may require growth as well as current income from your portfolio in retirement.

2019 additional premium per person for Modified Adjusted Gross Incomes (MAGI) of:

FILING SINGLE	MARRIED FILING JOINTLY	ADDITIONAL PREMIUM	TOTAL MEDIAN COSTS
$85,001 – $107,000	$170,001 – $214,000	$798	$5,958
107,001 – 133,500	214,001 – 267,000	2,008	7,168
133,501 – 160,000	267,001 – 320,000	3,217	8,377
160,001 – 499,999	320,001 – 749,999	4,426	9,586
>499,999	>749,999	4,829	9,989

Notes: Age 85 estimated total median cost in 2019 is $6,776. Medigap premiums usually increase due to age, in addition to annual inflation, except for most policies in the following states: AR, CT, MA, ME, MN, NY, VT WA, AZ, FL, ID and MO. If Plan G is not available, analysis includes the most comprehensive plan excluding Plan F.

Parts B and D additional premiums are calculated from federal tax returns two years prior; individuals may file for an exception on form SSA-44 if they reduce or stop work. For the definition of MAGI, please see slide 47.

Source: Employee Benefit Research Institute (EBRI) as of January 18, 2019; SelectQuote as of January 18, 2019; Milliman as of January 21, 2019; CMS website as of January 18, 2019; Consumer Expenditure Survey as of January 18, 2019; J.P. Morgan analysis.

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6 MINIMIZE TAXES TO MAXIMIZE YOUR RETIREMENT (PART 1)

Health Savings Account (HSAs) are a great way to minimize taxes

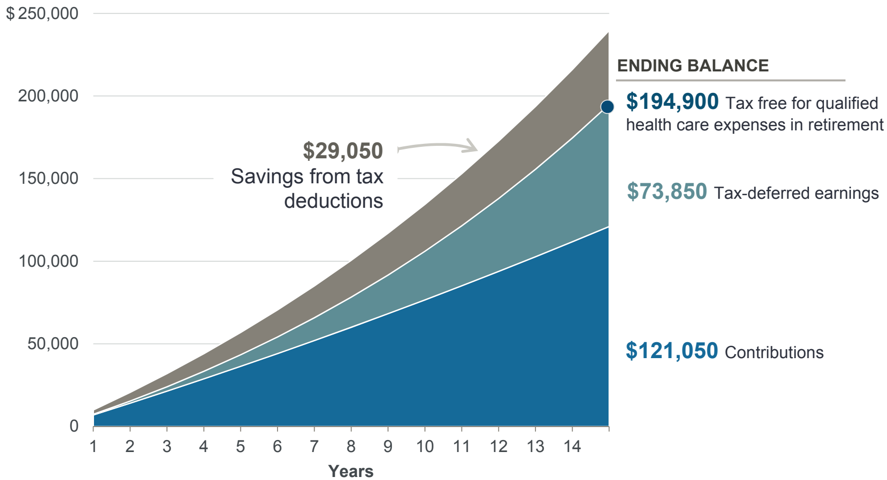
Health savings accounts are triple-tax free, so if you are eligible to contribute, make the most of it. Tax advantages include tax-free or tax-deductible contributions, tax-deferred earnings in the account and tax-free withdrawals for qualified health care expenses. If you invest your HSA dollars, the earnings inside your account may be significant. You are likely to have the best chance to accumulate earnings if you are able to pay for health care expenses outside of your HSA. This approach may help you defray qualified health care expenses in retirement.

If you need to use your HSA for current health care expenses, your balances at retirement will be lower but you will still be able to benefit from the tax-advantaged status of the account.

Note: There are tax penalties for withdrawals that are not qualified before the age of 59 ½; therefore, it is important to have a separate account for other expenses. See IRS publication 502 for details.

Maximizing an HSA for health care expenses in retirement | 22

Health Savings Account (HSA) savings are triple tax advantaged[1]
Maximum annual family contributions, 6% 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, 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.

[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. Health insurance premiums are qualified medical expenses. This includes health insurance premiums prior to retirement, Medicare Part B and D premiums and qualified long-term care insurance premiums up to certain limits, but excludes Medigap / Medicare supplement policies and most long-term care policies that include annuity income or life insurance. See IRS Publication 502 for details. This is not intended to be individual tax advice; consult your tax advisor.

The above example is for illustrative purposes only and not indicative of any investment. Does not include account fees. Present value of illustrated HSA after 15 years is $144,800. Estimated savings from tax deductions at a 37% marginal rate are $44,790. 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 $190,110. 2019 family contribution limit is $7,000 adjusted for inflation of 2.0% for 30 years. Individual 2019 contribution limit is $3,500. $194,900 is projected to be enough to fund about 13 years of projected average qualified Medicare-related health care expenses for a couple.

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6 MINIMIZE TAXES TO MAXIMIZE YOUR RETIREMENT (PART 2)

Four ways to pay less in taxes and keep more for retirement

1. Optimize savings vehicles by opening tax-advantaged accounts (401(k)s, IRAs, HSAs) and consider diversifying across pre-tax/deductible and Roth options if available to you. As a general rule, saving into a Roth when income is relatively low and shifting as your income rises may result in lower taxes overall.

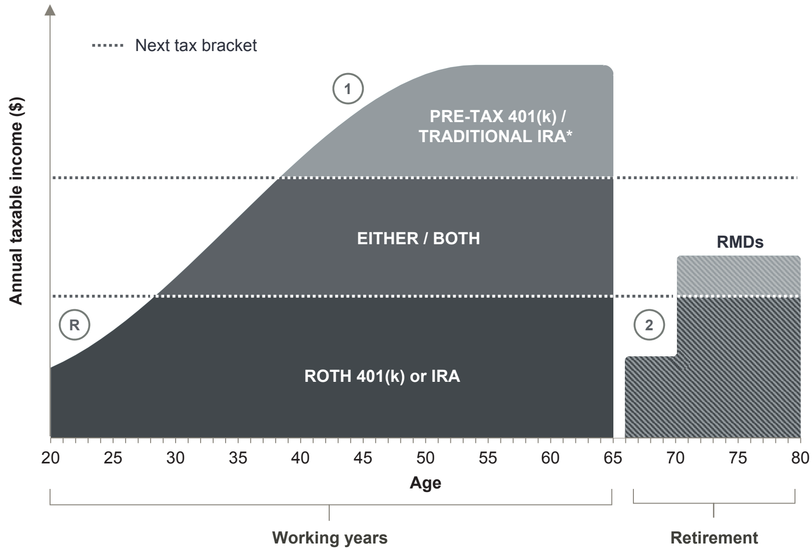
2. Consider deferring income when you are in your peak earnings years until you are in a lower tax bracket in retirement. However, if you are already concentrated in tax-deferred accounts, contributing to a Roth may help you diversify your retirement tax picture.

3. Work with your accountant and advisor to actively manage your tax picture throughout retirement. Higher incomes can also affect your Medicare premiums and taxability of Social Security benefits. Consider proactive Roth conversions in years when your tax rate is low.

4. Maximize your after-tax return by holding your highest-taxed investments (those generating ordinary income or short-term gains) in tax-advantaged accounts, after funding your emergency reserves. Look to offset gains with losses when rebalancing your portfolio or taking withdrawals from taxable accounts.

Evaluate a Roth at different life stages

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 70½ 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.

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7 DON'T SPEND TOO MUCH OR INVEST TOO CONSERVATIVELY

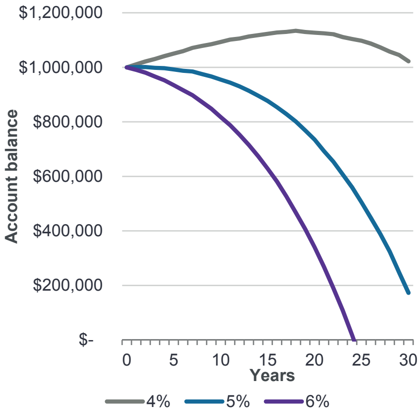
Be flexible with your retirement income

How you invest and how much you can consistently spend in retirement are interdependent. Investing too conservatively puts a portfolio at risk of running out of money at a 4% initial withdrawal rate. Withdrawing 5% or 6% may not be sustainable even with more aggressive portfolios, especially if markets fall during early retirement years.

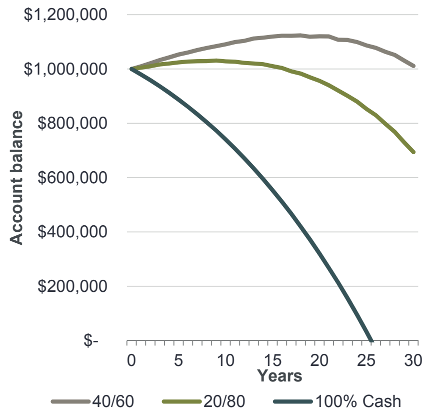
Instead of holding a static mix of investments or withdrawing a set amount each year, you may want to consider a more flexible approach that allows you and your advisor to adjust as circumstances change. This can better reflect how your spending will shift as you age, factoring in the likelihood that you will tend to spend less during down markets and more when your investments recover and enable you to adjust your portfolio as markets and your time horizon evolve.

Effects of withdrawal rates and portfolio allocations

40/60 portfolio at various initial withdrawal rates
Projected nominal outcomes, 50th percentile



Various portfolios at 4% initial withdrawal rate
Projected nominal outcomes, 50th percentile



ONE SIZE DOES NOT FIT ALL

Higher initial withdrawal rates or overly conservative portfolios can put your retirement at risk. However, setting your spending at retirement too low and not adjusting along the way may require unnecessary lifestyle sacrifices in retirement. You may want to consider a dynamic approach that adjusts over time to more effectively use your retirement savings.

The 50th percentile may be considered the most likely due to the high percentage of outcomes that tend to be clustered near the median. Ending value of the 4% initial withdrawal rate and 40/60 portfolio value is $1,011,237 ($558,275 in today's dollars) and the 20/80 portfolio value is $694,232 ($383,265 in today's dollars).

These charts are for illustrative purposes only and must not be used, or relied upon, to make investment decisions. Portfolios are described using equity/bond denotation (e.g. a 40/60 portfolio is 40% equities and 60% bonds). Hypothetical portfolios are composed of All Country World Equity, US Aggregate Bonds and US Cash, with compound returns projected to be 6.0%, 4.0% and 2.0%, respectively. J.P. Morgan's model is based on J.P. Morgan Asset Management's (JPMAM) proprietary Long-Term Capital Market Assumptions (10–15 years). The resulting projections include only the benchmark return associated with the portfolio and does 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 (2.0%). Allocations, assumptions and expected returns are not meant to represent JPMAM performance. Given the complex risk/reward tradeoffs 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.

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FOR MORE INFORMATION ABOUT THE RETIREMENT INSIGHTS PROGRAM OR TO VIEW THE ENTIRE *GUIDE TO RETIREMENT*, PLEASE VISIT WWW.JPMORGANFUNDS.COM/GTR

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