



RETIREMENT INSIGHTS

Guide to RetirementSM

2018 Edition



J.P.Morgan
Asset Management

4 ■ Retirement landscape

Factors that shape today's retirement experience

13 ■ Saving

Behaviors and best practices while saving for retirement

21 ■ Spending

Considerations for living in retirement

37 ■ Investing

Building a retirement portfolio

41 ■ Reference

J.P. MORGAN RETIREMENT STRATEGIST TEAM

S. Katherine Roy, CFP®
Chief Retirement Strategist

Sharon Carson, CRPC®
Retirement Strategist, Americas

Lena Rizkallah, J.D., CRPC®
Retirement Strategist, Americas

Wina Appleton, CFA
Retirement Strategist, Asia

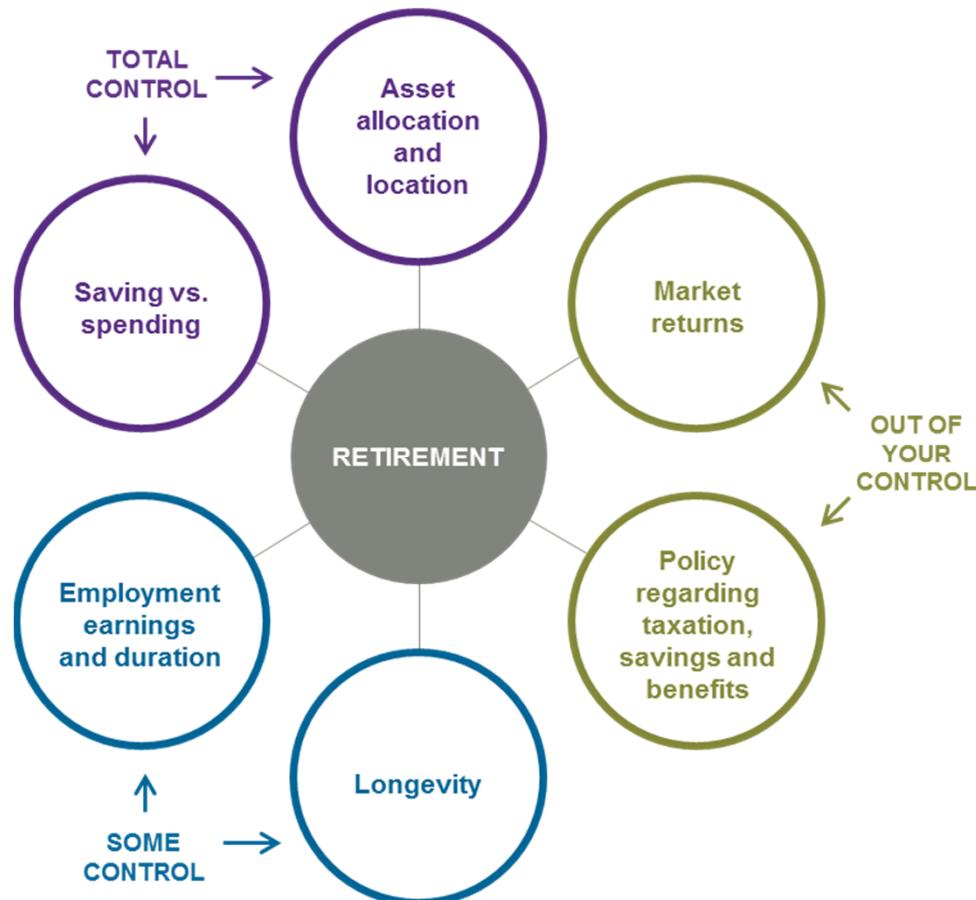
Je Oh
Quantitative Strategist

Joseph Marlo
Quantitative Strategist

The retirement equation

4

Retirement landscape

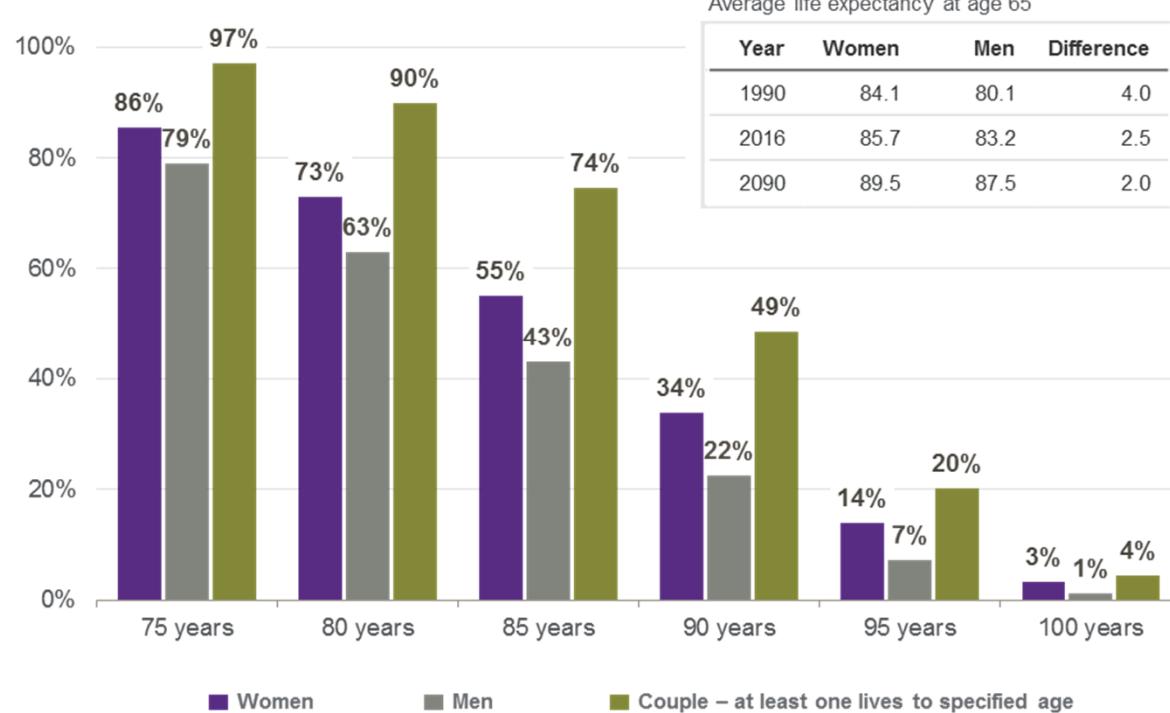


A SOUND RETIREMENT PLAN

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 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 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, 2014 (published in 2017), J.P. Morgan Asset Management.

Table: Social Security Administration 2017 OASDI Trustees Report.

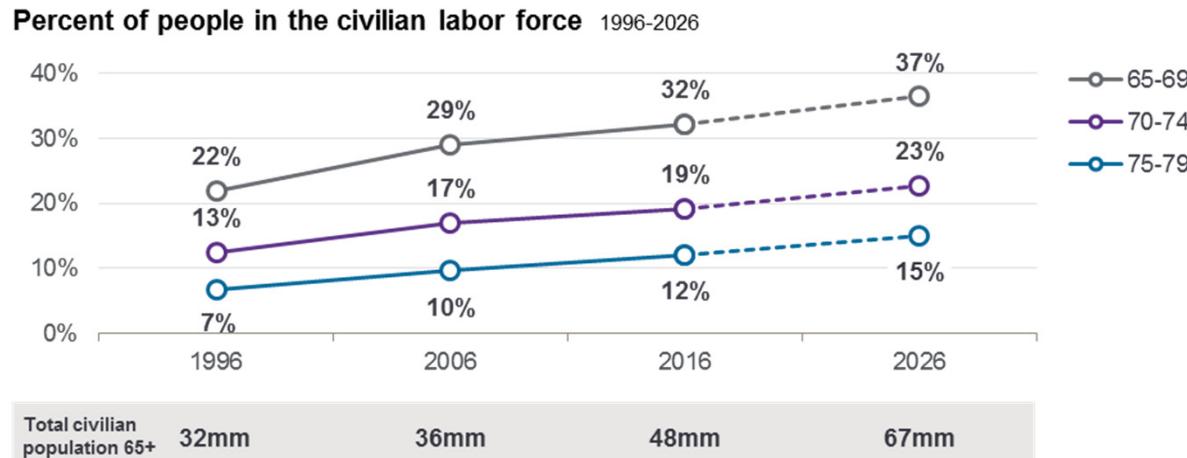
Probability at least one member of a same-sex female couple lives to age 90 is 56% and a same-sex male couple is 40%.



Older Americans in the workforce

6

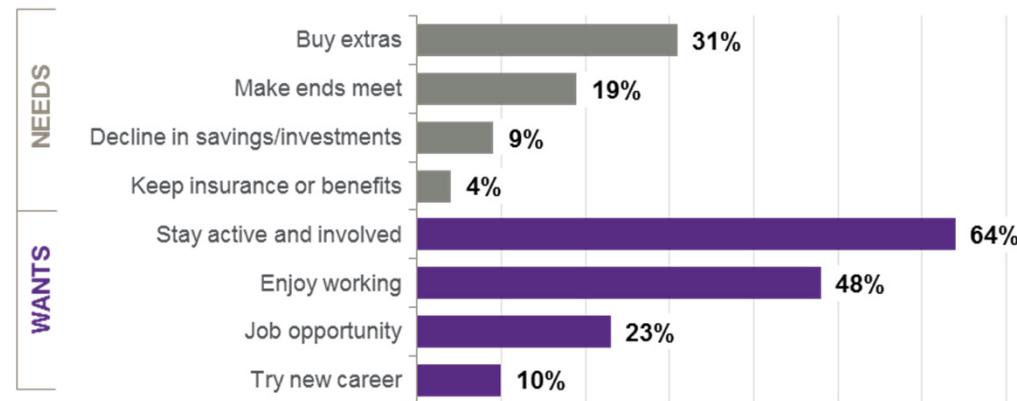
Retirement landscape



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 2016 and projection to 2026. Civilian population age 65+ is non-institutionalized population.

Source (bottom chart): Employee Benefit Research Institute, Mathew Greenwald & Associates, Inc., 2017 Retirement Confidence Survey. Data as of March 2017. Latest available data through December 31, 2017.

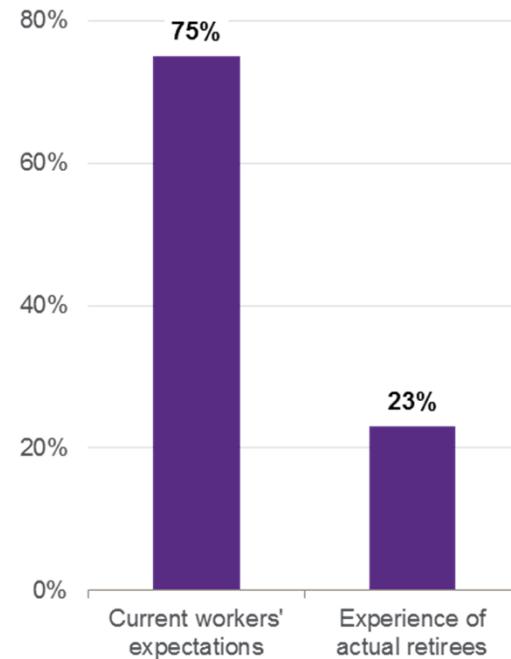
5

J.P.Morgan
Asset Management

Managing expectations of ability to work

Expectations of workers vs. retirees

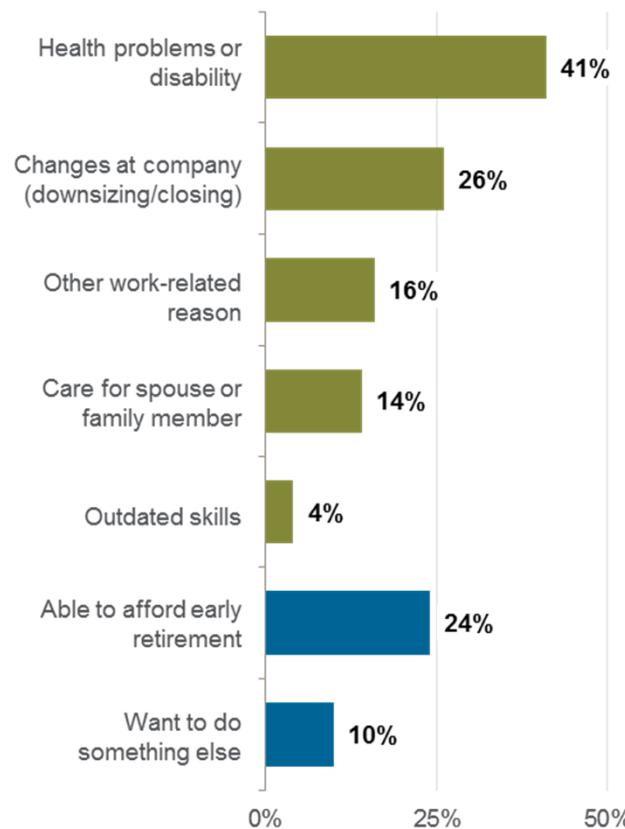
To retire at age 65 or older



Median retirement age

Expected:	65
Actual:	62

Reasons cited for retiring earlier than planned



EARLY RETIREMENT

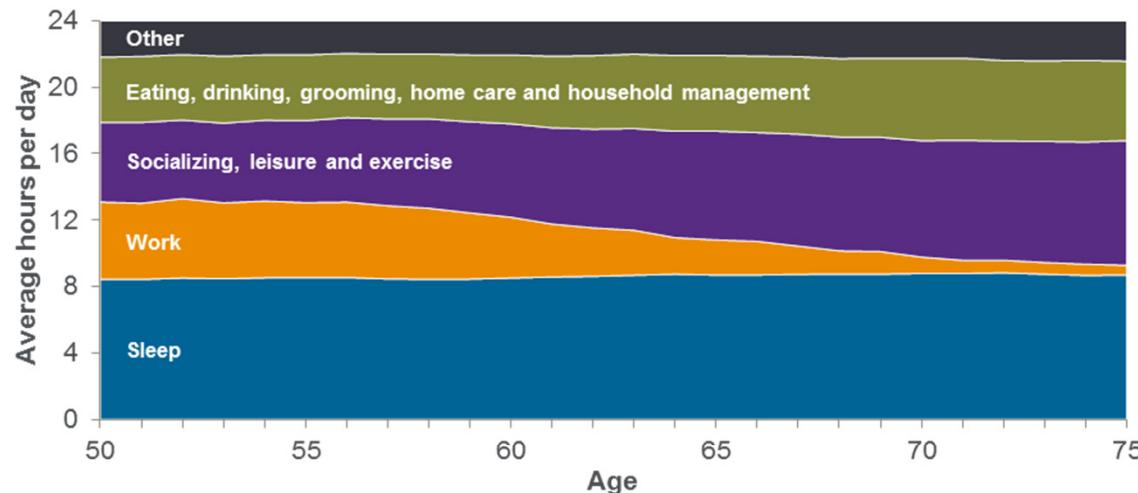
You may not have complete control over when you retire, so you should consider having a back-up plan. You may have to draw income earlier and make your portfolio last longer than you anticipate.

Changes in lifestyle

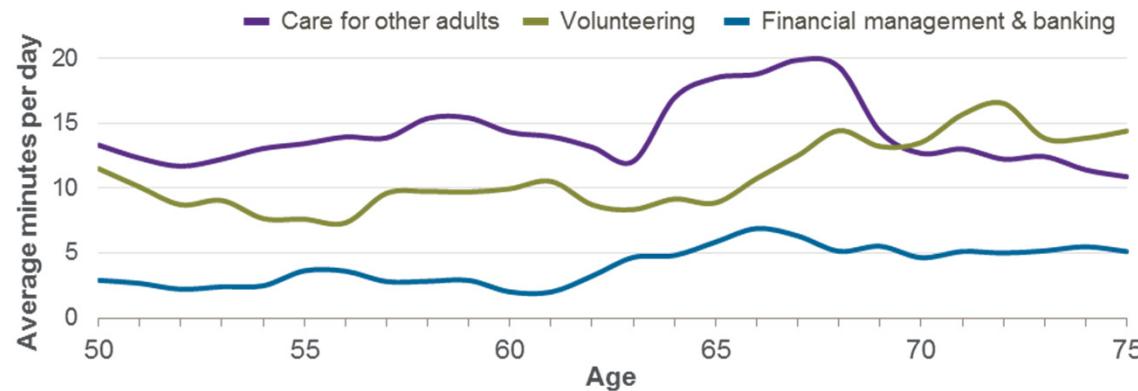
| 8

Retirement landscape

Amount of daily hours spent per activity by age



Activity trends in retirement



Values include people who do and do not participate in the activities. Values are weighted by the age and then averaged across rolling five-year age groups. Each category includes time spent traveling to and from the activity if applicable.

Source: Bureau of Labor Statistics American Time Use Survey 2016, J.P. Morgan Asset Management analysis.

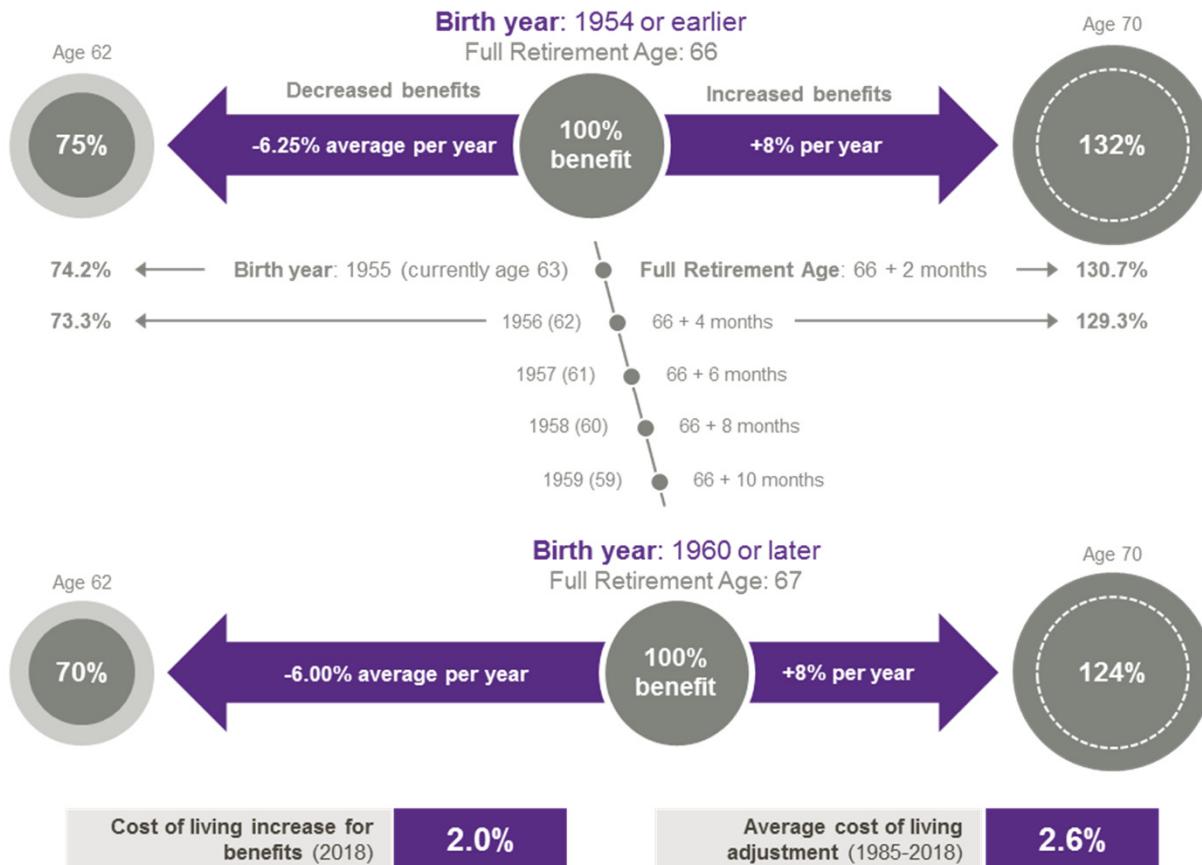
SPEND TIME PLANNING YOUR TIME

Retirement offers the gift of time to do the things that matter most to you. Knowing what those activities are prior to retiring can ease the transition into this new life stage.

Social Security timing tradeoffs

Benefits differ by birth year and claim age

Full Retirement Age = 100% benefit



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. For those born in 1956 or earlier, there is a 7.3% compound growth rate for each year of waiting to take benefits; 7.4% for those born in 1957 or after. 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.

Maximizing Social Security benefits

| 10

Retirement landscape

Cumulative individual benefit by claim age
Full Retirement Age (FRA) = Age 66 & 4 months

Claim at 70:
\$4,672 per month



Claim at FRA:
\$3,260 per month

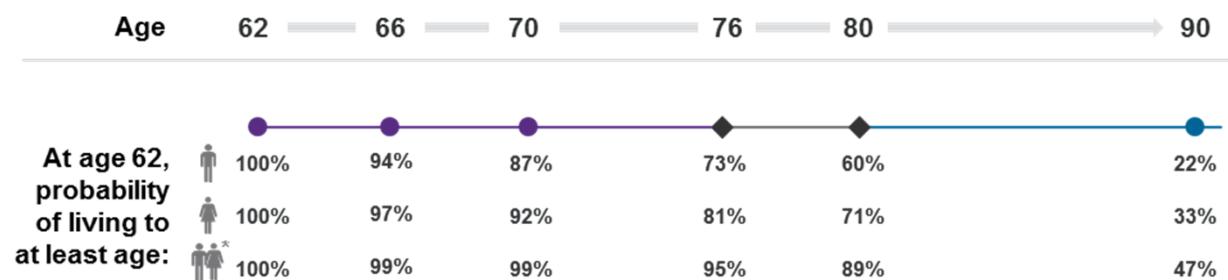


Claim at 62:
\$2,147 per month



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.

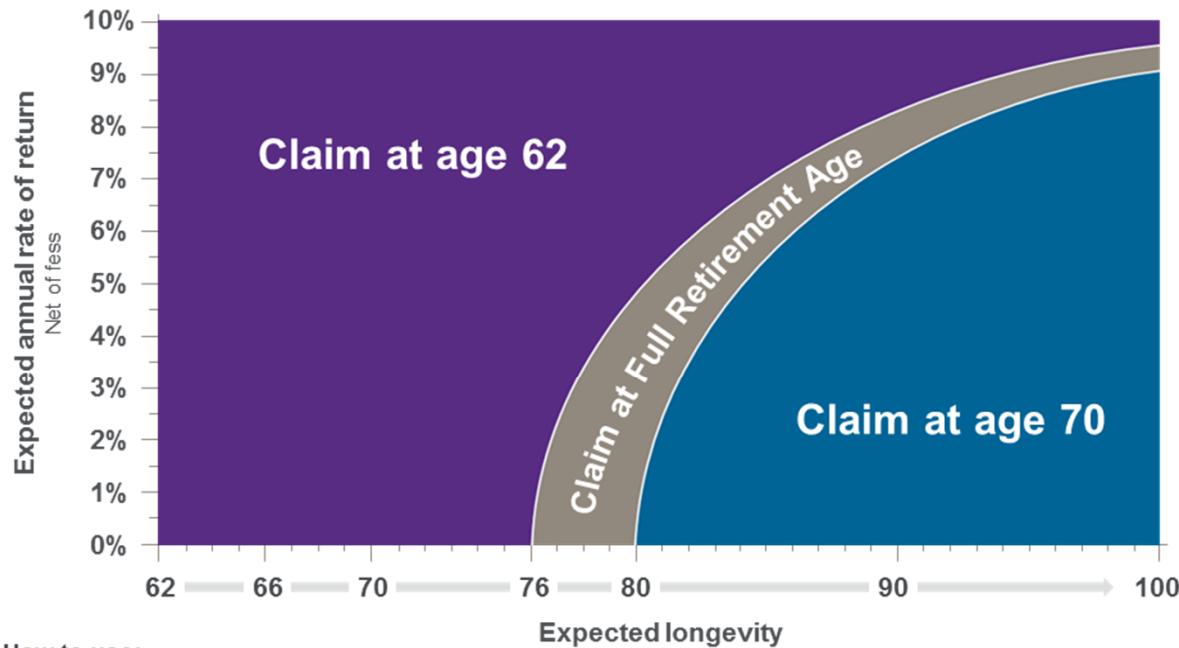
*Couple assumes at least one lives to the specified age or beyond. Breakeven assumes the same individual, born in 1956, earns the maximum wage base, retires at the end of age 61 and claims at 62 & 1 month, 66 & 4 months and 70, respectively. Benefits are assumed to increase each year based on the Social Security Administration 2017 Trustee's Report "intermediate" estimates (annual benefit increase of 3.1% in 2019 and 2.6% thereafter). Monthly amounts without the cost of living adjustments (not shown on the chart) are: \$2,147 at age 62; \$2,928 at FRA; and \$3,787 at age 70. Exact breakeven ages are 76 & 3 months and 80 & 5 months.

Social Security benefit claiming considerations

| 11

Retirement landscape

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



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 Social Security benefits over the course of one's life – given the three options of age 62, Full Retirement Age (age 66 & 4 months) and age 70.
- Example: For an individual invested in a diversified 40/60 portfolio (expected rate of return of 5%) and average expected female longevity (age 86) = Claim at age 70.

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

Source (longevity at age 62): Social Security Administration, Period Life Table, 2014 (published in 2017), J.P. Morgan Asset Management.

Source (expected returns): J.P. Morgan Asset Management Long-Term Capital Market Assumptions.

Assumes the same individual, born in 1956, retires at the end of age 61 and claims at 62 & 1 month, 66 & 4 months and 70, respectively.

Benefits are assumed to increase each year based on the Social Security Administration 2017 Trustee's Report "intermediate" estimates (annual benefit increase of 3.1% in 2019 and 2.6% thereafter). Expected rate of return is deterministic, in nominal terms, and net of fees.

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.

Retirement savings checkpoints

| 13

Modest forward-looking returns may require higher savings going forward

Values assume you would like to maintain an equivalent lifestyle in retirement

	\$50,000	\$75,000	\$100,000	\$150,000	\$200,000	\$250,000	\$300,000
Current age	Checkpoint (x current household income)						
25	-	0.3	0.6	1.0	1.3	1.5	1.7
30	0.3	0.9	1.2	1.7	2.1	2.4	2.5
35	0.9	1.6	2.0	2.6	3.0	3.4	3.5
40	1.6	2.4	2.9	3.6	4.2	4.6	4.8
45	2.5	3.4	4.0	4.8	5.5	6.0	6.2
50	3.5	4.6	5.3	6.3	7.1	7.7	8.0
55	4.7	6.0	6.9	8.1	9.1	9.7	10.1
60	6.2	7.7	8.8	10.2	11.4	12.2	12.6
65	8.1	10.0	11.3	13.0	14.5	15.5	16.0

How to use:

- 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: $\$100,000 \times 2.9 = \$290,000$.

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 (2011-2014); Social Security benefits using modified scaled earnings in 2017 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 15.

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.

MODEL ASSUMPTIONS

Assumed annual gross savings rate: 10%*

Pre-retirement investment return: 6.0%

Post-retirement investment return: 5.0%

Inflation rate: 2.25%

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

Years in retirement: 30

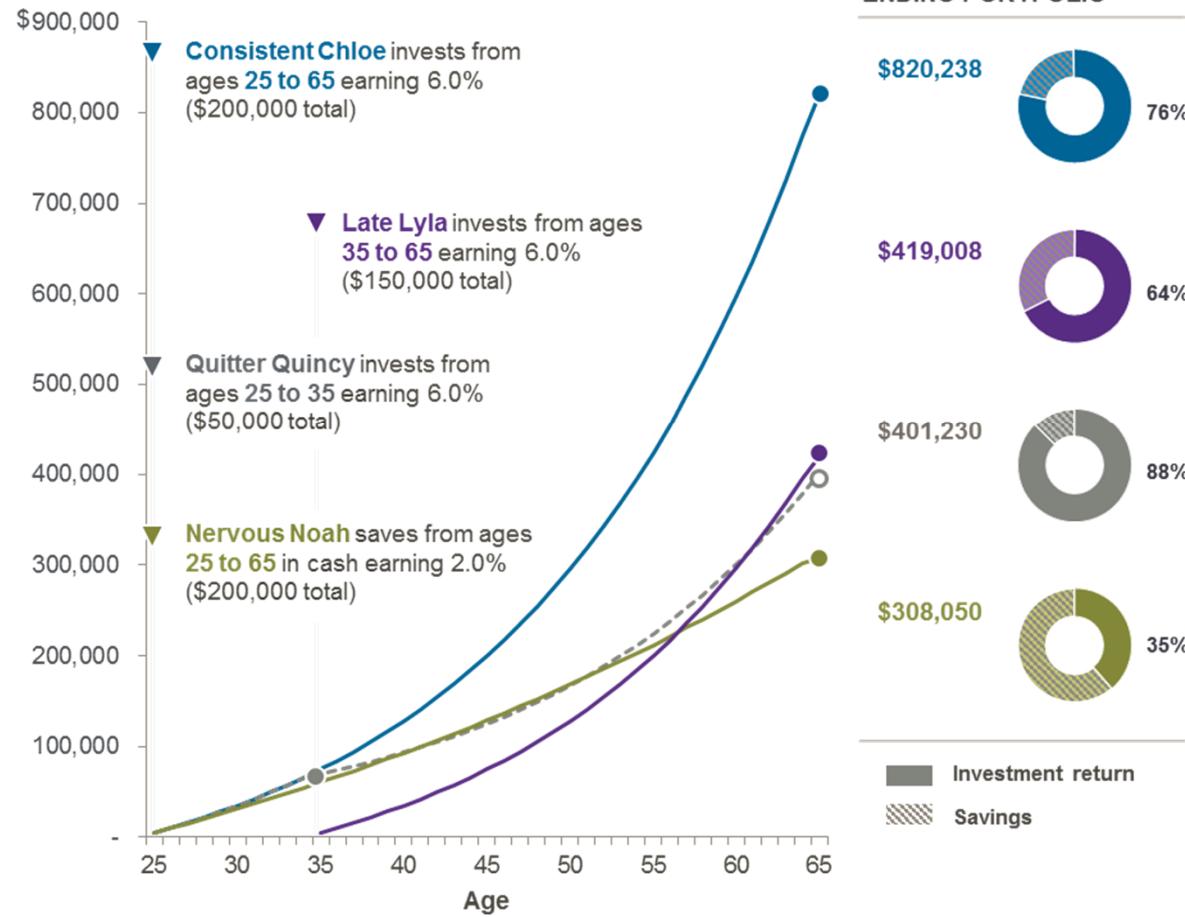
*10% is approximately twice the U.S. average annual savings rate

Benefit of saving and investing early

| 16

Saving

Account growth of \$5,000 invested/saved annually



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 compounding over the long term.

The above example is for illustrative purposes only and not indicative of any investment. Account value in this example assumes a 6.0% annual return and cash assumes a 2.0% annual return. Source: J.P. Morgan Asset Management, Long-Term Capital Market Assumptions. Compounding refers to the process of earning return on principal plus the return that was earned earlier.

J.P.Morgan
Asset Management



Options to consider when retiring or changing jobs

| 44

There are typically four options to consider when leaving an employer's retirement plan, each with its benefits and considerations. Converting a portion of tax-deferred assets to a Roth IRA may be a fifth option to consider in certain circumstances described below.

Options	Potential benefits	Considerations
Roll the retirement account into an IRA account (IRA rollover) (May also roll the Roth 401(k) portion of a retirement account into a Roth IRA)	<ul style="list-style-type: none"> No income taxes or penalties for a direct rollover¹ Assets maintain tax-deferred status Ability to make additional contributions subject to income limitations² Potential for a broader range of investment choices Opportunity to consolidate multiple retirement accounts If balance includes employer stock, may be eligible for preferable tax treatment (Net Unrealized Appreciation) if the stock is not rolled over³ 	<ul style="list-style-type: none"> Loans are not allowed Fees may vary, and may be higher than what is charged in an employer plan
Leave the money in former employer plan	<ul style="list-style-type: none"> Not a taxable event Assets maintain tax-deferred status If you are at least age 55 and are separated from service, you may be able to take withdrawals without penalties Fees may be lower depending on plan size 	<ul style="list-style-type: none"> Investment options vary according to the plan and may be more limited Ability to leave assets in the plan as well as ongoing plan options are subject to policies and contractual terms of the plan Some plans may not provide periodic payments to retirees
Move the assets into a new employer plan	<ul style="list-style-type: none"> No income taxes or penalties for a direct rollover¹ Assets maintain tax-deferred status New employer plan may allow loans Ability to make additional contributions potentially with a company match Fees may be low based on plan and size of employer (number of participants) 	<ul style="list-style-type: none"> Investment options vary according to the plan and may be more limited Assets are subject to policies or terms of new employer plan
Withdraw balance of assets or "cash out" of plan	<ul style="list-style-type: none"> Individual may use remaining funds (after taxes and potential penalties) for other purposes 	<ul style="list-style-type: none"> Upon withdrawal, account balance is subject to ordinary income tax on pre-tax contributions and investment earnings 20% automatically withheld for taxes upon distribution Additional 10% withdrawal penalty tax may apply for owners younger than age 59½ Additional federal, state or local income taxes may apply Loss of tax-deferred growth of assets
Convert all or part of retirement account into Roth IRA (Roth IRA conversion)	<ul style="list-style-type: none"> May provide income tax diversification in retirement After taxes are paid at conversion, future distributions are tax free⁴ Required minimum distributions do not apply at 70½ 	<ul style="list-style-type: none"> The pre-tax amount is included in gross income in the year of conversion (and is subject to the aggregation rule) Sufficient taxable assets to pay income taxes owed is strongly recommended

¹ In a direct rollover, qualified retirement assets are transferred directly from the former employer plan to the institution holding the new IRA or plan account, and no taxes or penalties will apply. If an owner chooses to receive the plan assets first, the distribution is subject to 20% mandatory withholding and the entire amount of the distribution must be deposited into a new plan or IRA account within 60 days of receipt to avoid further potential taxes and penalties.

² Subject to IRA contribution limits: \$5,500 in 2018 (\$6,500 if age 50 or older); single filers may make Roth contributions if MAGI is \$120,000 or below; married filing jointly if MAGI is \$189,000 or below; phase-outs on contributions thereafter.

³ With the Net Unrealized Appreciation (NUA) strategy, an employee may transfer the employer stock portion of a retirement account to a brokerage account. The employee pays ordinary income tax on the cost basis of the stock at the time of transfer, but will owe capital gains tax when he/she later sells the stock.

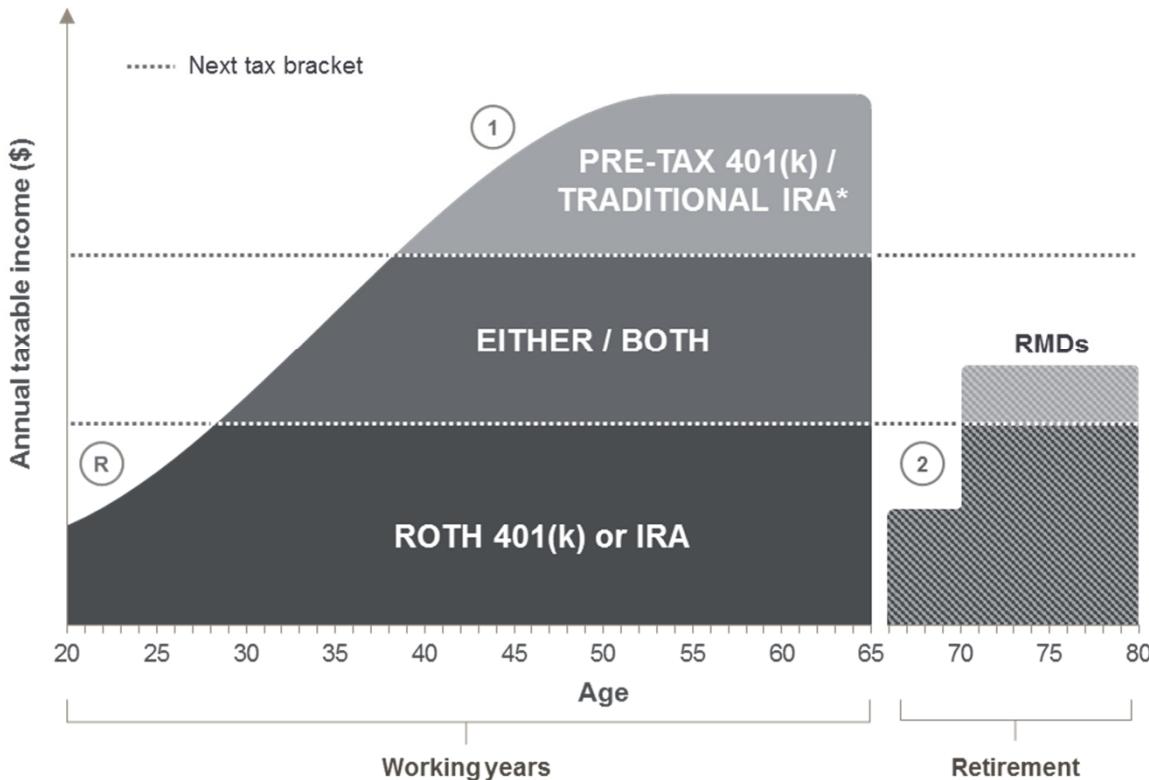
⁴ Subject to 5-year Roth account holding period and age requirements.

Evaluate a Roth at different life stages

| 19

Changes in lifetime taxable income

Hypothetical wage curve



THINK OPPORTUNISTICALLY

Effectively managing taxes over a lifetime requires a careful balance of your current income tax picture and a focus on income tax diversification. Consider:

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 retirement and Roth 401(k) accounts.

RMD = Required Minimum Distribution. RMDs are calculated every year based on the account value and the owner's life expectancy using IRS actuarial data. IRA owners must begin taking RMDs no later than April 1 following the year the owner turns age 70½. For owners of employer-based qualified plans, RMDs must begin at age 70½ or when the owner retires, whichever is later. Owners of Roth IRAs are not required to take RMDs; however, RMDs are required in Roth 401(k) accounts. Any employer contribution will be applied to the participant's pre-tax retirement account for both Traditional and Roth 401(k) plans, and subsequent distributions will be subject to tax.

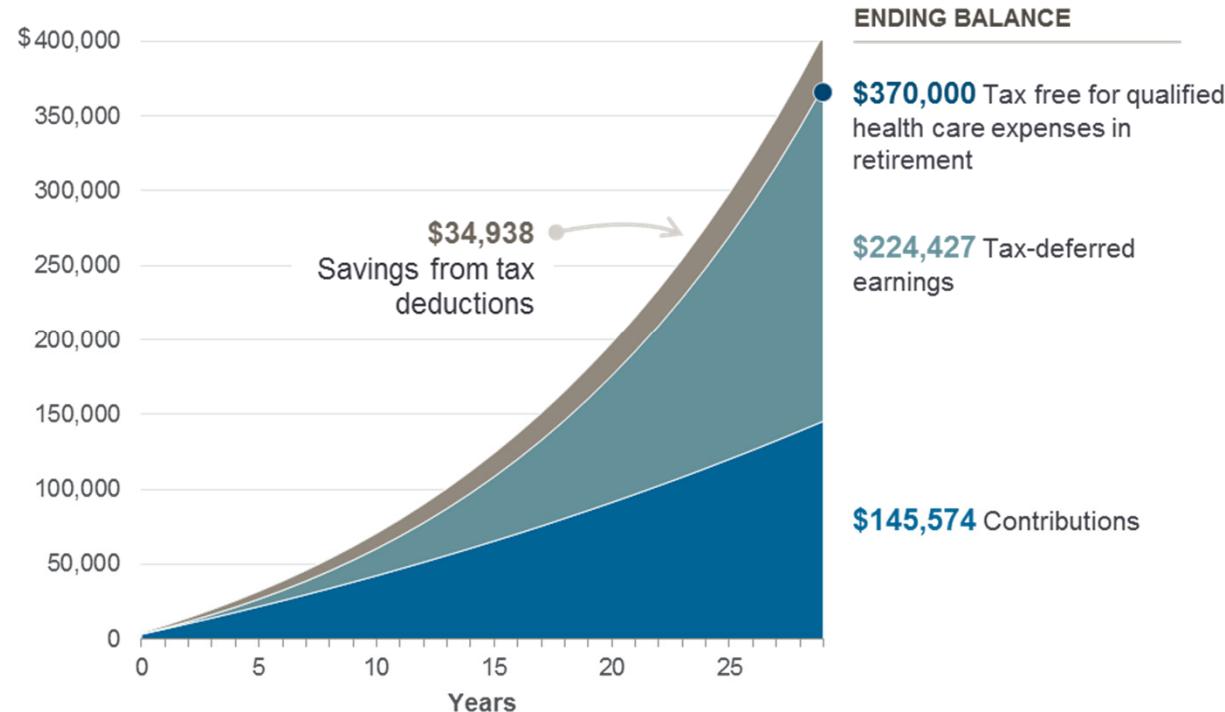
The above example is for illustrative purposes only. Source: J.P. Morgan Asset Management.

Maximizing an HSA for health care expenses in retirement

| 20

Health Savings Account (HSA) savings are triple tax advantaged¹

Maximum annual individual contributions, 6% return and 24% marginal tax rate



MAKE THE MOST OF IT

If you are enrolled in a high-deductible health plan, be sure to contribute to an 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. After age 65 funds in the HSA may be withdrawn tax free for qualified medical expenses or withdrawn at ordinary income tax rates for other expenses. See IRS Publication 502 for details.

The above example is for illustrative purposes only and not indicative of any investment. Federal taxes; states may differ. Does not include account fees. Present value of illustrated HSA after 30 years is \$189,803. If the annual tax deduction is invested with an after-tax return of 4.56%, the cumulative hypothetical return is \$34,809. 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 \$360,516. 2018 contribution limit is \$3,450 adjusted for inflation of 2.25% for 30 years.

HSA contributions made through payroll deduction or qualified employer 457 cafeteria plans may also avoid federal payroll and unemployment taxes unless you are self-employed. These tax reductions may result in lower Social Security and unemployment insurance benefit amounts. Contributions outside of an employer plan are generally tax deductible but do not avoid payroll and unemployment taxes. This is not intended to be individual tax advice; consult your tax advisor.

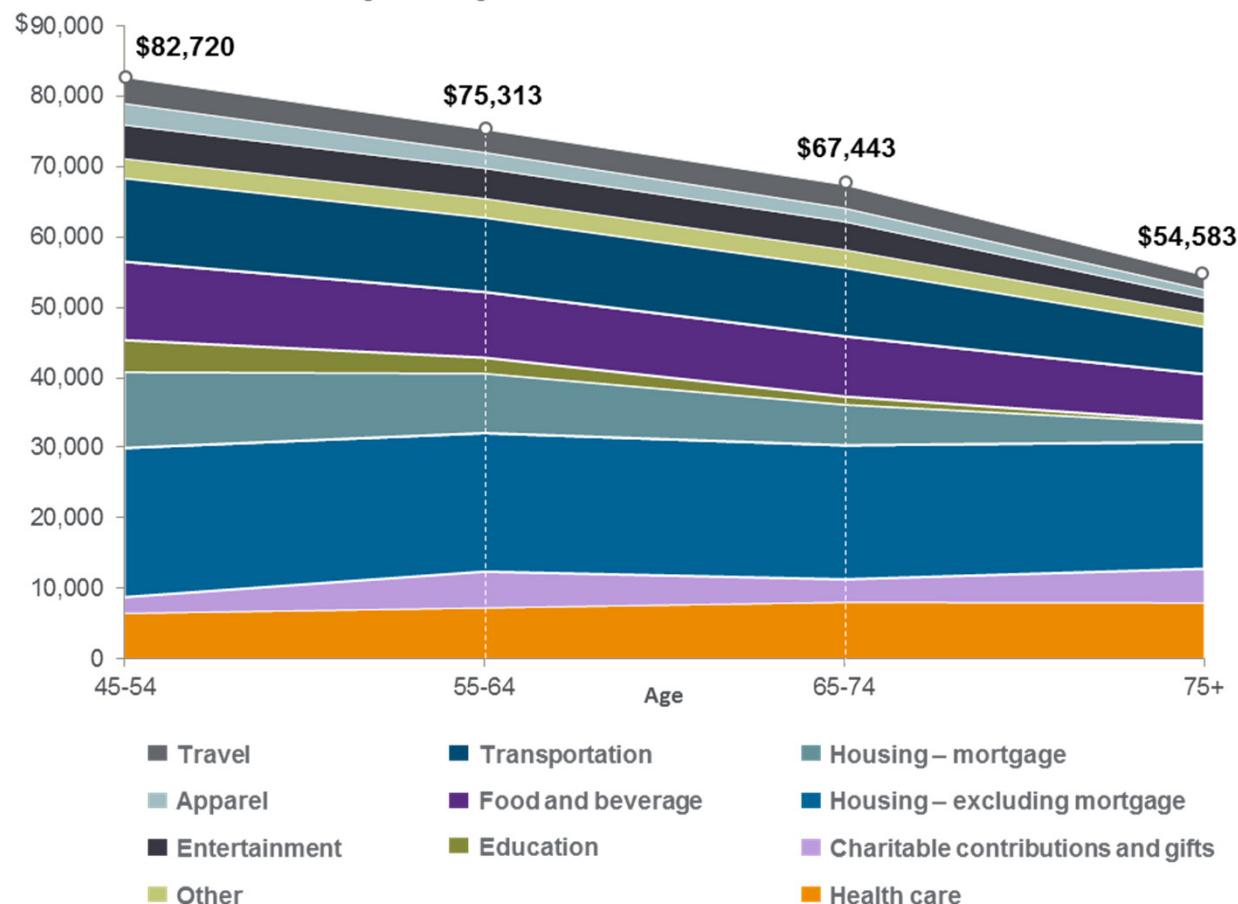
Changes in spending

| 21

Average household spending patterns by various age groups

For those with a bachelor's degree or higher

Spending



WHAT TO EXPECT

Household spending peaks at the age of 45, after which spending declines in all categories but health care and charitable contributions and gifts. Housing is the largest expense, even at older ages.

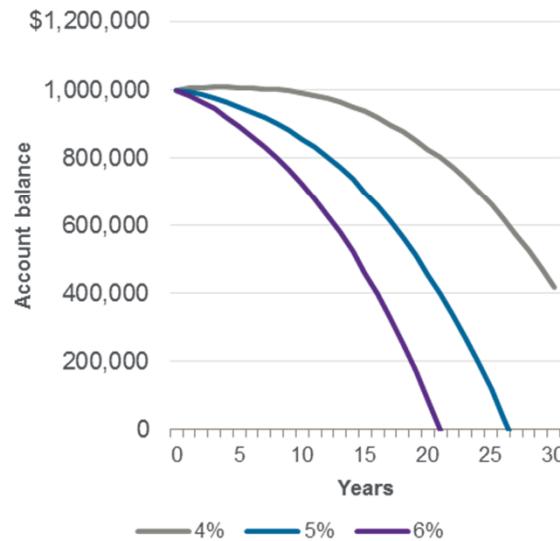
Effects of withdrawal rates and portfolio allocations

| 22

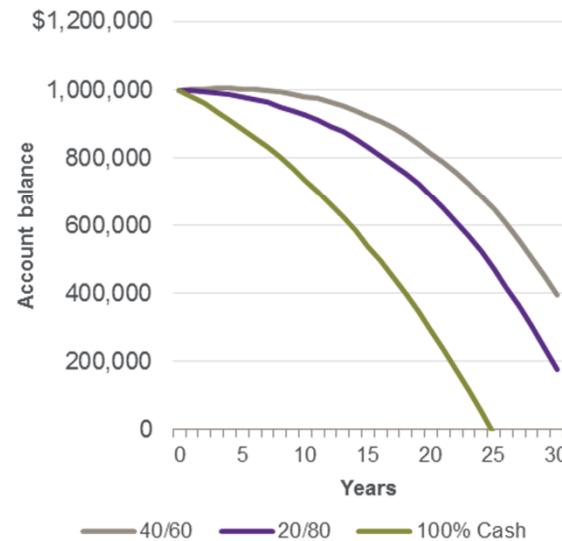
Years of sustainable withdrawals for a portfolio for typical markets

Projected nominal outcomes, 50th percentile

40/60 portfolio at various initial withdrawal rates



Various portfolios at 4% initial withdrawal rate



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.

50th percentile means that 50% of the time you'll have better outcomes. Based on the high percentage of outcomes that tend to be clustered near the median, this may be considered the most likely potential outcome. For the 40/60 portfolio at a 4% withdrawal rate, the real portfolio value at period 30 is \$214,164 vs. \$417,489 nominal.

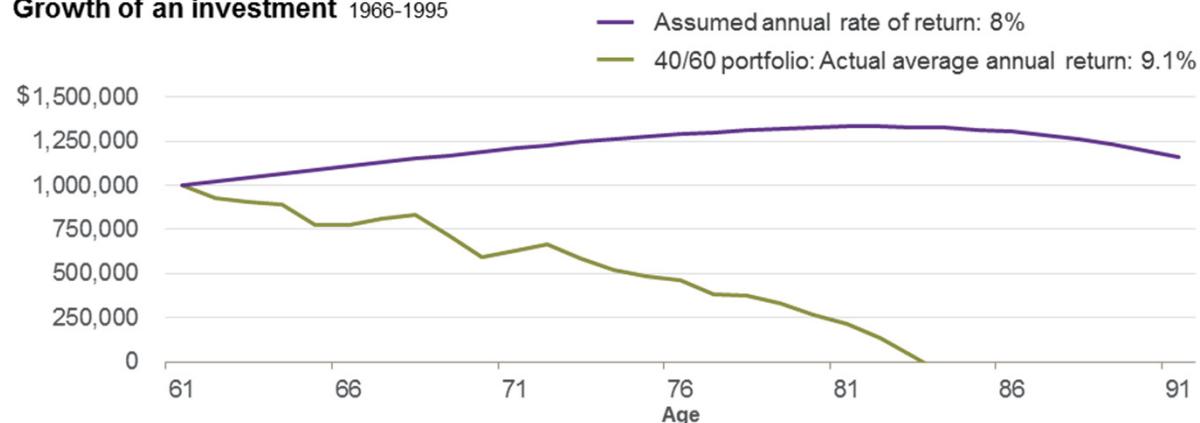
These charts are for illustrative purposes only and must not be used, or relied upon, to make investment decisions. Portfolios are described using equity/bond denotation (e.g. a 40/60 portfolio is 40% equities and 60% bonds). Hypothetical portfolios are composed of US Large Cap for equity, US Aggregate Bonds and US Cash for cash, with compound returns projected to be 5.50%, 3.25% and 2.00%, 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 (2.25%). 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.

Dollar cost ravaging—timing risk of withdrawals

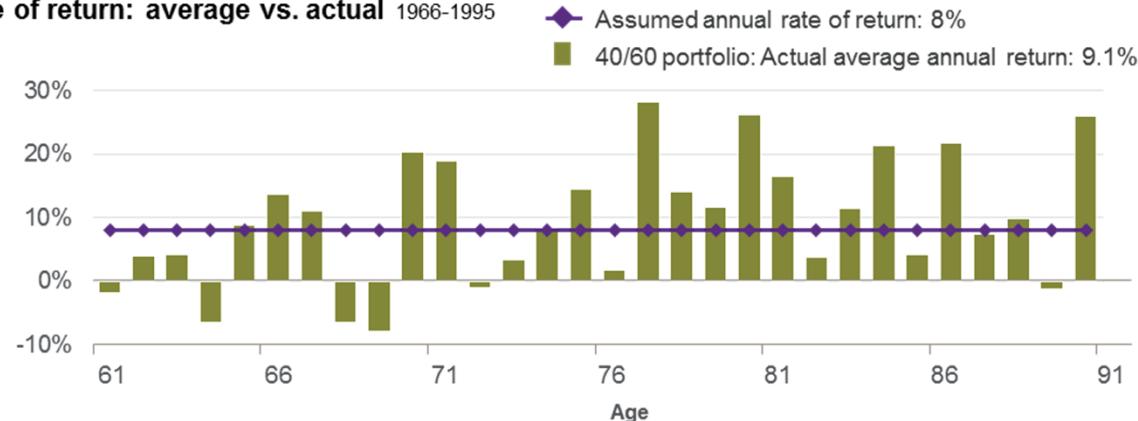
| 23

Spending

Growth of an investment 1966-1995



Rate of return: average vs. actual 1966-1995



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 Barclays 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.

SEQUENCE OF RETURN RISK

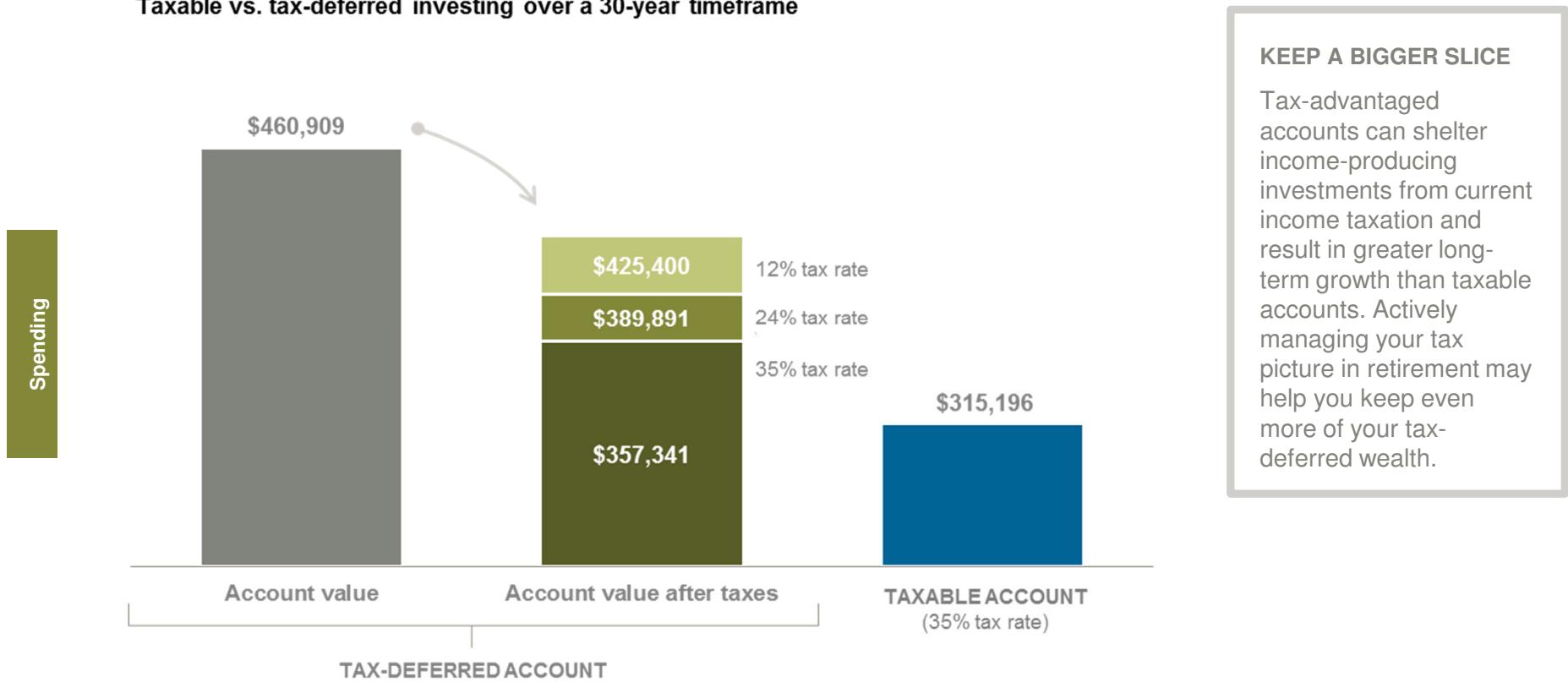
Withdrawing assets in down markets early in retirement can ravage a portfolio. Consider investment solutions that incorporate downside protection such as:

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

Consider proactive tax management strategies

| 29

Taxable vs. tax-deferred investing over a 30-year timeframe



Source: J.P. Morgan Asset Management. Assumes \$5,500 after-tax contributions at the beginning of each year for 30 years and 6.0% annual investment return that is assumed to be subject to ordinary income taxes (capital gains and qualified dividends are not considered in this analysis). Tax-deferred account balance is taken as lump sum and taxed at the 12%, 24% and 35% federal tax rate, respectively, at time of withdrawal. Taxable account contributions are after tax and assume a 35% federal tax rate during accumulation. This hypothetical illustration is not indicative of any specific investment and does not reflect the impact of fees or expenses. This chart is shown for illustrative purposes only. Past performance is no guarantee of future results.



Top tax changes for individuals and small business owners

| 24

	2017	2018
Individual income tax brackets¹	<ul style="list-style-type: none"> Seven income tax brackets Top bracket: 39.6% at \$418,400 individual / \$470,700 married 	<ul style="list-style-type: none"> Seven income tax brackets Top bracket: 37% at \$500,000 individual / \$600,000 married
Alternative Minimum Tax	<ul style="list-style-type: none"> Exemption: \$54,300 / \$160,900 Phase-out threshold: \$120,700 / \$160,900 	<ul style="list-style-type: none"> Exemption: \$70,300 / \$109,400 Phase-out threshold: \$500,000 / \$1mm
Standard Deduction	<ul style="list-style-type: none"> \$6,350 / \$12,700 	<ul style="list-style-type: none"> \$12,000 / \$24,000
State and local tax deduction	<ul style="list-style-type: none"> Deductible² 	<ul style="list-style-type: none"> Capped at \$10,000 on state / local income, property and sales tax
Mortgage interest deduction	<ul style="list-style-type: none"> Interest deductible up to \$1mm for primary and secondary homes; \$100k home equity debt 	<ul style="list-style-type: none"> Limited to \$750,000 debt on primary and secondary homes; no deduction for home equity debt
Estate, gift and Generation Skipping Transfer (GST) tax	<ul style="list-style-type: none"> \$5.49mm / \$10.98mm 	<ul style="list-style-type: none"> \$11.2mm / \$22.4mm³
Tax rate for owners of pass-through entities	<ul style="list-style-type: none"> Business income taxed at individual rate (max 39.6%) 	<ul style="list-style-type: none"> May deduct 20% of qualified business income⁴; 29.6% effective rate

HOW DOES THE NEW TAX LAW IMPACT YOUR BOTTOM LINE?

Comprehensive tax reform through the Tax Cuts and Jobs Act of 2017 (TCJA) may affect almost every taxpayer beginning in 2018.

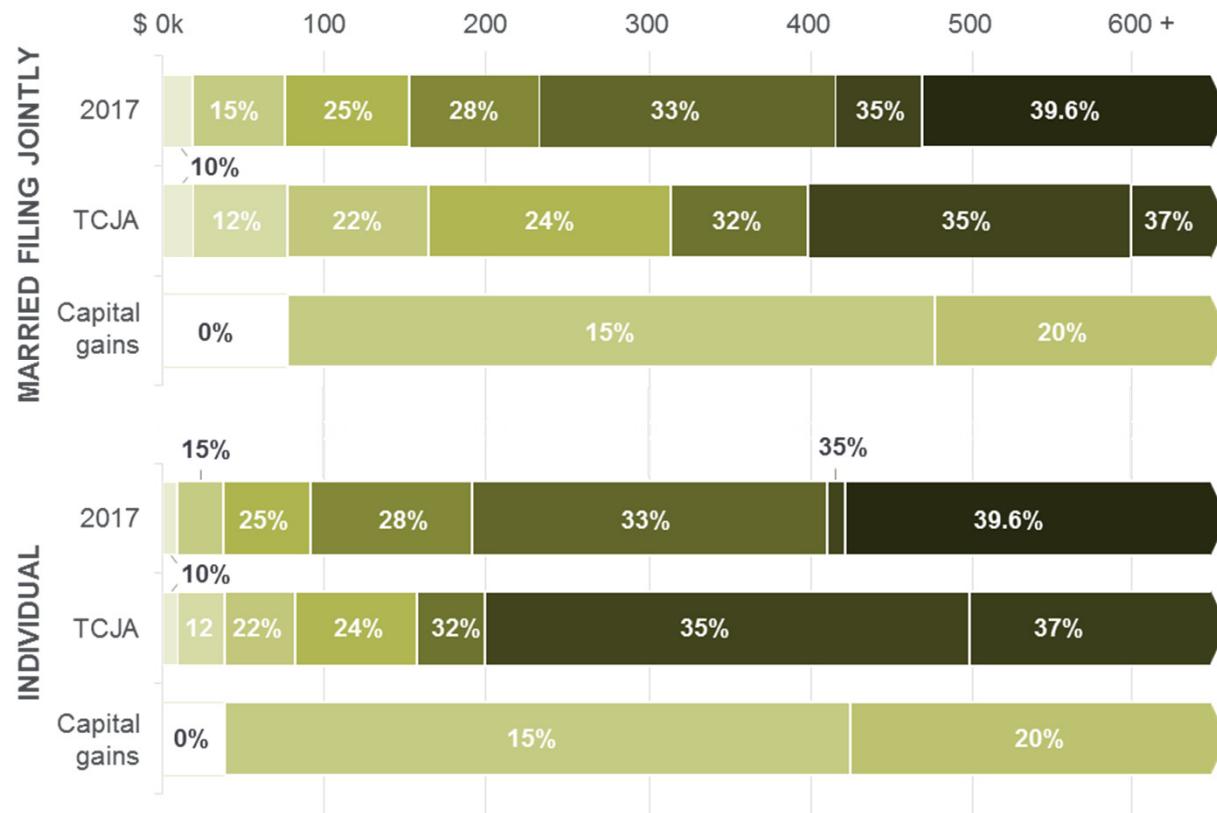
¹ 2018 top income tax bracket 40.8% inclusive of 3.8% Medicare Surtax on unearned/investment income; for 2017, top rate was 43.4%.
² Deduction was limited or phased-out for AMT filers. ³ Subject to IRS guidance. ⁴ The 20% deduction phases out for individuals earning \$157,500/\$315,000 (married) and disappears entirely for individuals with income exceeding \$207,500/\$415,000 (married) engaged in a "specific service business." These are businesses that focus on health, law, consulting, athletics, financial services, brokerage service or where the main asset is the skill or reputation of employees/owners. For business owners in other businesses and with income above the thresholds, the deduction may not exceed 50% of owner's share of W-2 employee wages paid by the business or 25% of W-2 wages paid by the business plus 2.5% of original purchase price of long-term property used in production of income. Further IRS guidance to follow.

The Tax Cuts and Jobs Act: Marginal tax brackets

| 25

Federal income tax rates

Comparison of marginal tax brackets by filing status



OUT WITH THE OLD, IN WITH THE NEW

While the number of tax brackets remains the same with the Tax Cuts and Jobs Act (TCJA), income ranges and marginal rates are significantly modified.

Income thresholds for capital gains and qualified dividends remain unchanged.

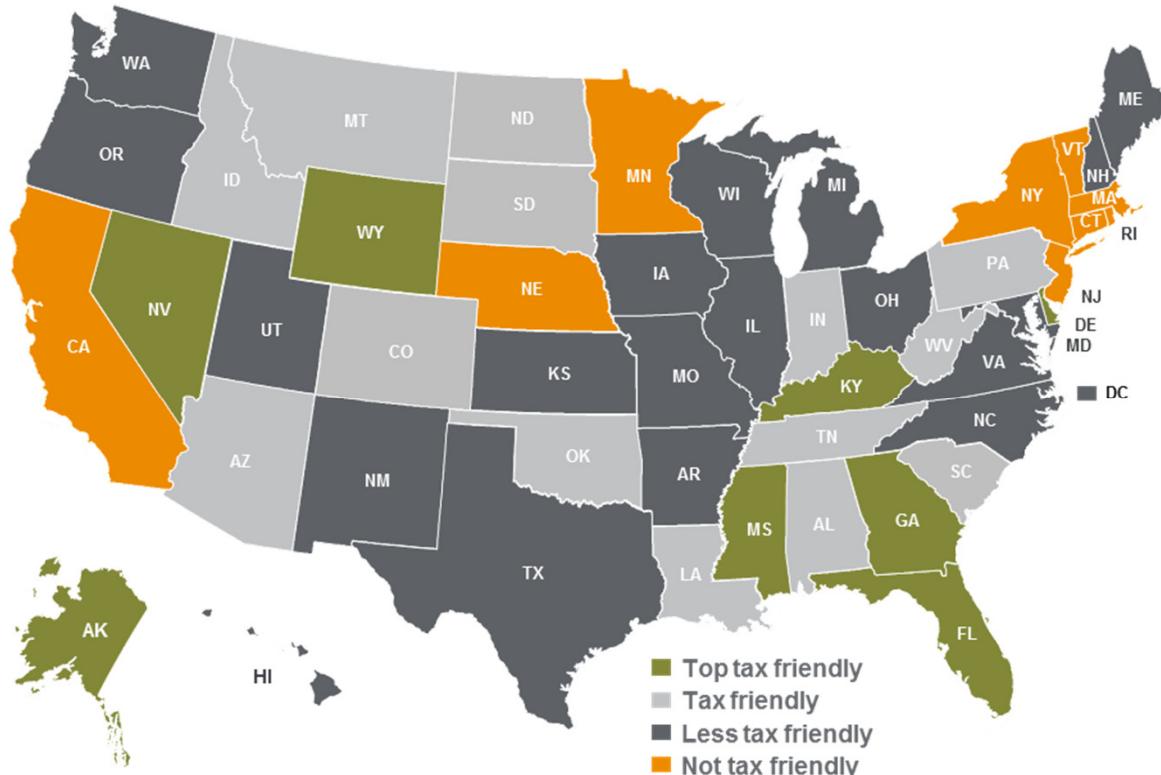
Top tax rate not reflective of additional 3.8% Medicare Surtax on unearned/investment income for individuals/married couples with MAGI at or exceeding \$200,000/\$250,000. Marginal tax brackets under TCJA will sunset after 2025. Note that capital gains and qualified dividends are aligned to income thresholds and not marginal brackets under the new law. In the future, tax brackets will be adjusted for inflation using chained-CPI (also known as C-CPI-U); this is a permanent feature under TCJA.

J.P.Morgan
Asset Management

Comparison of state taxes paid by a retiree household

| 27

Spending



MODEL ASSUMPTIONS

Scenario based on retired married couple filing jointly

State income tax on¹ –

- Annual retirement plan distribution: \$80,000
- Total Social Security benefits: \$42,000

Property tax on²: 2.5x median home value by state

Sales/average local sales tax on³: Remaining income net of federal & state income and property tax

Tax favorability based on household overall effective state tax rate: Top tax friendly (<8%), Tax friendly (8%-9.9%), Less tax friendly (10%-13%), Not tax friendly (>13%). Retired married household age 65. ¹ State income tax liability is based on all taxable sources of retirement income minus allowable state personal exemptions and a standard deduction. State-specific exemptions, deductions and/or credits related to eligible retirement income and Social Security are included. States with no income tax: AK, FL, NV, SD, TX, WA, WY. States that tax interest and dividends only: TN and NH. States that tax Social Security: CO, CT, KS, MN, MO, MT, NE, NM, ND, RI, UT, VT, WV. States that do not tax retirement plan distributions or Social Security: IL, MS, PA. ² State property tax applies to home value only and includes state-specific homestead exemptions/credits. ³ States with no sales tax: AK, DE, MT, NH, OR (local taxes may apply).

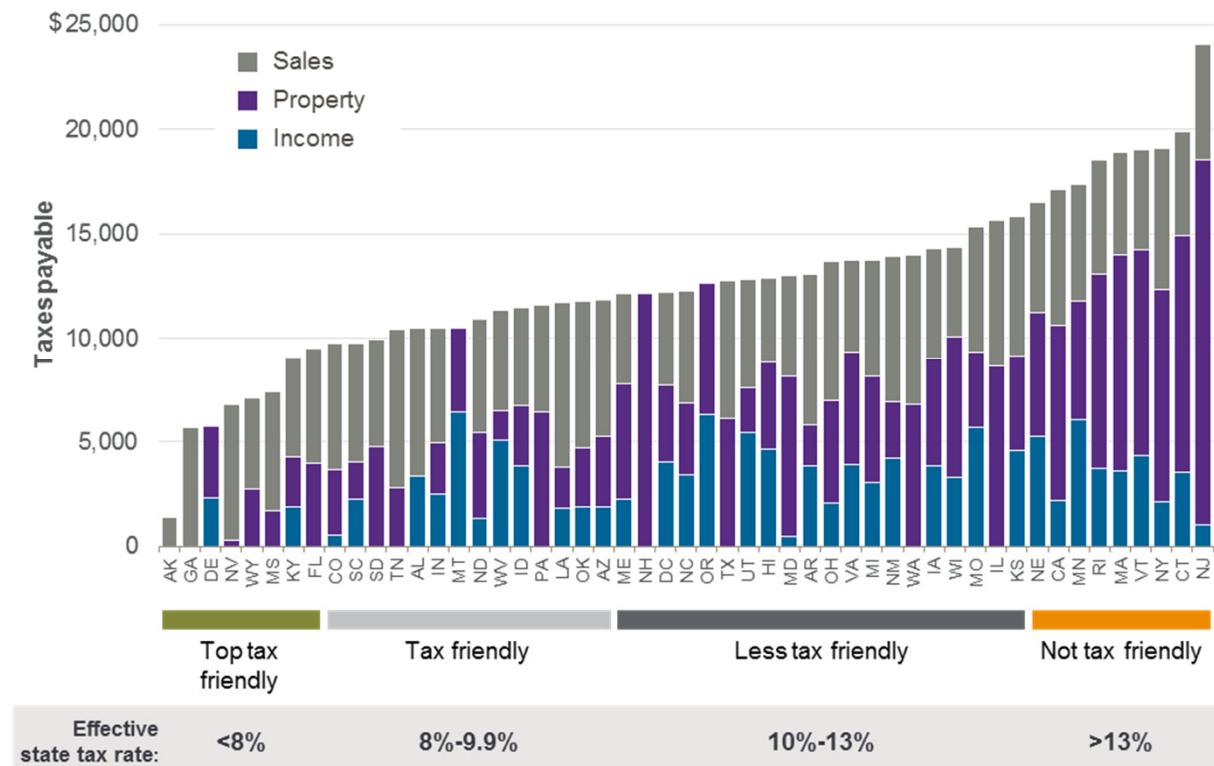
Of note: CA imposes a 1% surtax on taxpayers earning more than \$1mm (\$1,074,996 married) for a top marginal tax rate of 13.3%. NYC levies an additional 3.078-3.876% on taxable income. From 2018 to 2025, certain New York tax rates will be incrementally reduced. HI top marginal income tax rate reduced to 8.25% in 2017 and increased to 11% in 2018. Illinois tax rate increased to 4.95% on all income in 2018.

Source: J.P. Morgan Asset Management. The presenter of this slide is not a tax or legal advisor, and this slide should not be used as such. Clients should consult a personal tax or legal advisor prior to making any tax- or legal-related investment decisions.

A closer look at state taxes paid by a retiree household

28

Composition of estimated state taxes



MODEL ASSUMPTIONS

Scenario based on retired married couple filing jointly

State income tax on¹ –

- Annual retirement plan distribution: \$80,000
 - Total Social Security benefits: \$42,000

Property tax on²: 2.5x median home value by state

Sales/average local sales tax on³: Remaining income net of federal & state income and property tax

Retired married household age 65.¹ State income tax liability is based on all taxable sources of retirement income minus allowable state personal exemptions and a standard deduction. State-specific exemptions, deductions and/or credits related to eligible retirement income and Social Security are included. States with no income tax: AK, FL, NV, SD, TX, WA, WY. States that tax interest and dividends only: TN and NH. States that tax Social Security: CO, CT, KS, MN, MO, MT, NE, NM, ND, RI, UT, VT, WV. States that do not tax retirement plan distributions or Social Security: IL, MS, PA.² State property tax applies to home value only and includes state-specific homestead exemptions/credits.³ States with no sales tax: AK, DE, MT, NH, OR (local taxes may apply).

Of note: CA imposes a 1% surtax on taxpayers earning more than \$1M (\$1,074,996 married) for a top marginal tax rate of 13.3%. NYC levies an additional 3.078-3.876% on taxable income. From 2018 to 2025, certain New York tax rates will be incrementally reduced. HI top marginal income tax rate reduced to 8.25% in 2017 and increased to 11% in 2018. Illinois tax rate increased to 4.95% on all income in 2018.

Source: J.P. Morgan Asset Management. The presenter of this slide is not a tax or legal advisor, and this slide should not be used as such. Clients should consult a personal tax or legal advisor prior to making any tax- or legal-related investment decisions.

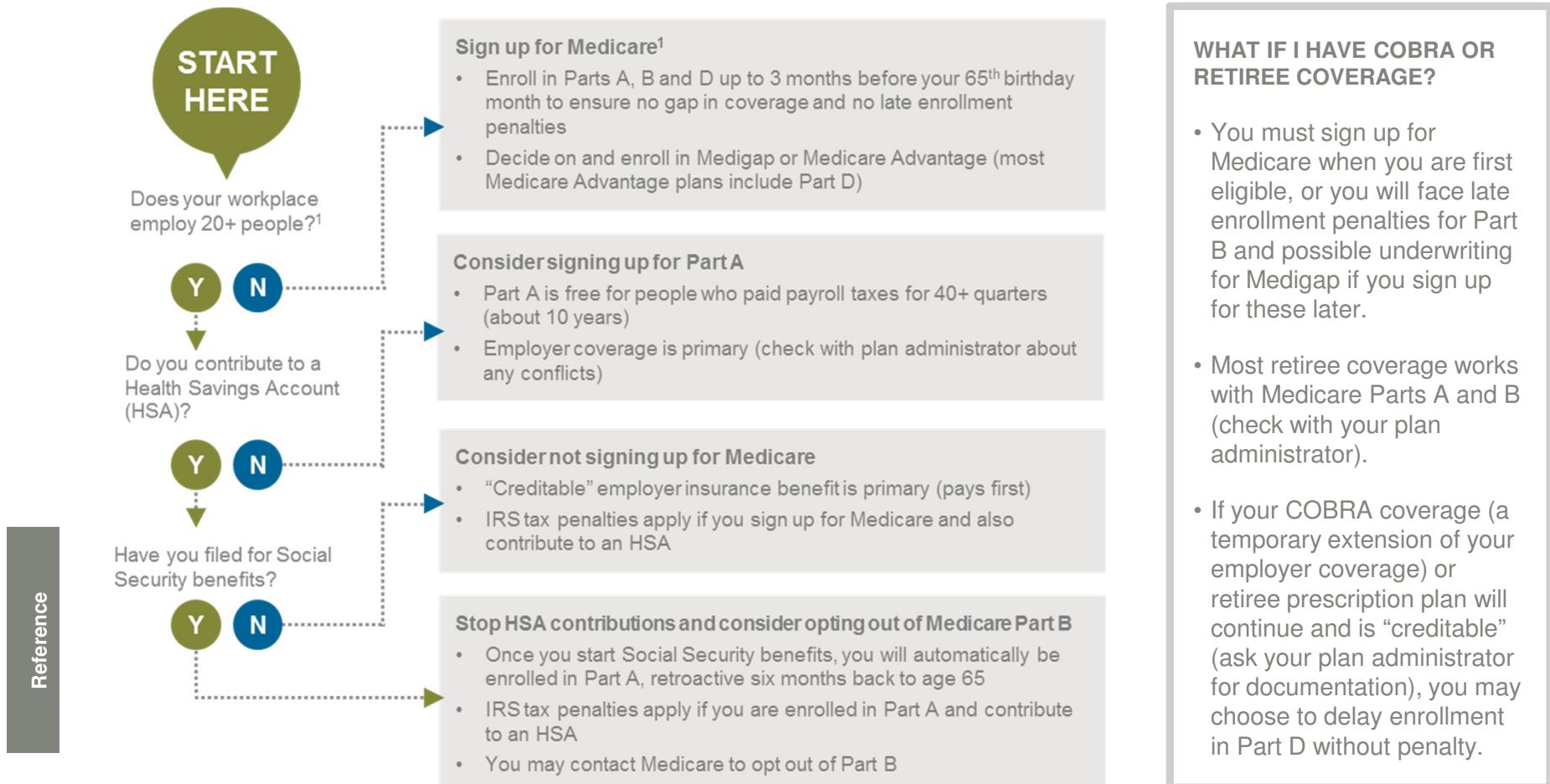


What is Medicare?

| 46

Medicare is a government health care program available to those who have paid Medicare taxes while working or to non-working spouses of such individuals. Medicare is available when these individuals reach age 65. Citizens who have never paid Medicare taxes may be eligible if they pay a Medicare premium. Individuals under age 65 may also be eligible if they are considered disabled by Social Security or the Railroad Retirement Board for more than 24 months.

	Traditional Medicare	Medicare Advantage (usually limited to a network of providers)
Part A: inpatient hospital insurance	✓	✓
Part B: doctors, tests and outpatient hospital insurance	✓	✓
Medigap: standardized plans that cover Part A and Part B co-pays and deductibles	✓	Not available
Part D: prescription drug insurance	✓	✓ Most plans include Part D
Prescription drug co-pays and deductibles	Not covered	Not covered
Most vision, dental and hearing expenses	Not covered	✓ Coverage varies by plan
Long-term care*	Not covered	Not covered



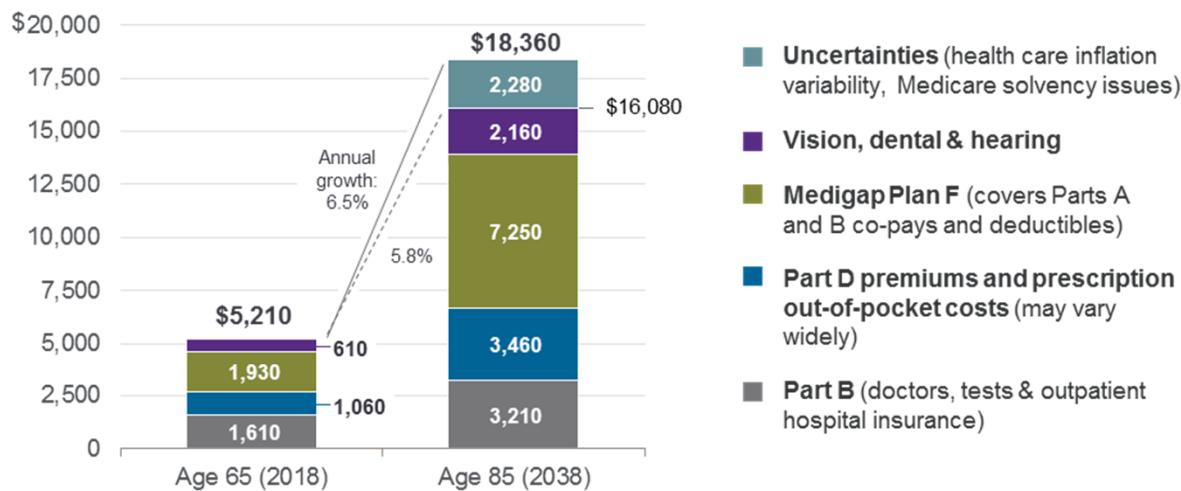
¹ Most employer coverage for <20 people will end at age 65 or become secondary after Medicare has paid. Late penalties will apply if you don't sign up in your initial enrollment window and Medigap plans may deny coverage or underwrite after the initial enrollment period.

For more information see www.mymedicarematters.org/enrollment/am-i-eligible, sponsored by the National Council on Aging and Medicare.gov.

Rising annual health care costs in retirement

| 30

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.

Spending

2018 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	\$6,008
107,001 – 133,500	214,001 – 267,000	2,010	7,220
133,501 – 160,000	267,001 – 320,000	3,222	8,432
>160,000	>320,000	4,433	9,643

Notes: Age 85 estimated total median cost in 2018 is \$7,097. 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. Analysis includes the most comprehensive and expensive plan available in each state.

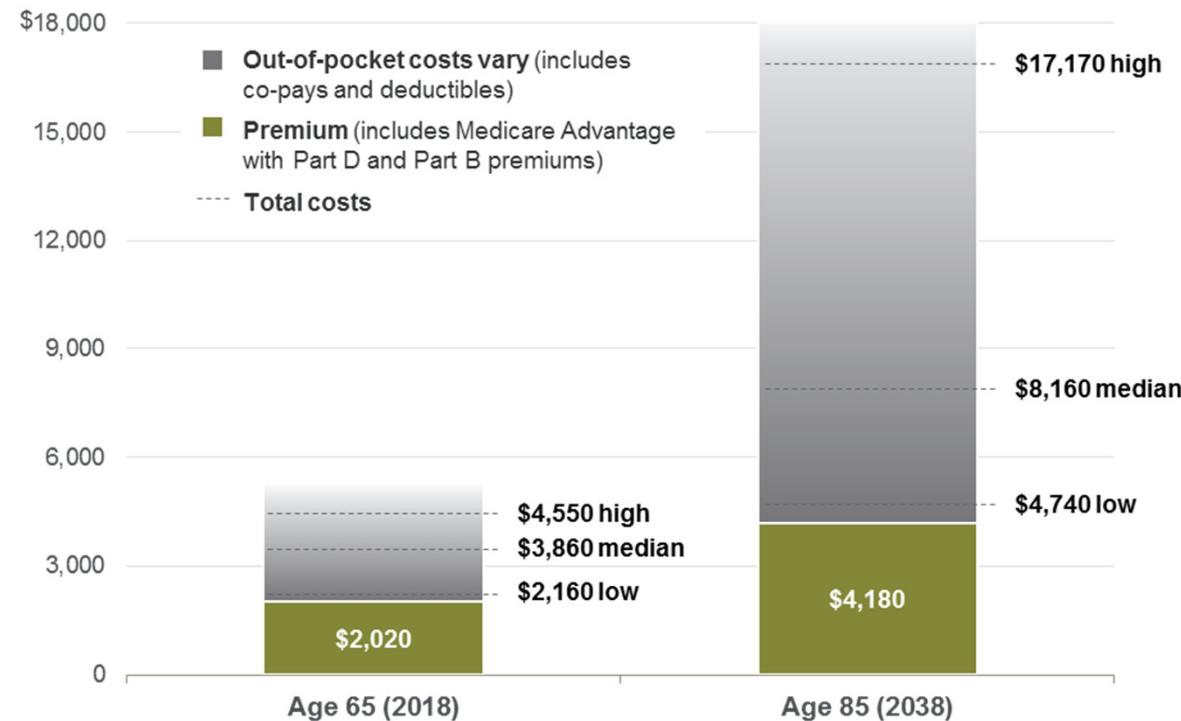
Parts B and D additional premiums are calculated from federal tax returns two years prior; individuals may file for an exception on form SSA-44 if they reduce or stop work. For the definition of MAGI, please see slide 41.

Source: Employee Benefit Research Institute (EBRI) data as of December 31, 2017; SelectQuote data as of January 18, 2018; Centers for Medicare and Medicaid Services website, January 22, 2018; CMS Annual Release of Part D National Average Bid Amount, July 31, 2017; 2017 Medicare Trustees Report, July 13, 2017; Consumer Expenditure Survey data as of December 31, 2017; J.P. Morgan analysis.

Variation in Medicare Advantage costs

Estimated Medicare Advantage with Part D and out-of-pocket expenses

Annual amount per person



DRAMATIC DIFFERENCES IN COSTS DEPENDING ON HEALTH

Be prepared to pay more for health care in the event you experience a health issue, which becomes more common as one ages.

- Be aware: Although Medicare Advantage plans have out-of-pocket caps, those limits do not include prescriptions
- Consider maintaining an emergency reserve fund for high out-of-pocket cost years

Total costs = annual premium + out-of-pocket costs for those with relatively low costs (those in the lowest third of the cost distribution), median costs and high costs (those in the highest third of the cost distribution).

Age 85 estimated median cost in 2018 is \$4,617. Cost estimates above show age 85 in 2038 adjusted for inflation and increased use of medical care at older ages. Since plans are sold by private companies, premiums will vary based on plan characteristics. Out-of-pocket expenses, including out-of-pocket prescription costs, will vary by plan and include co-pays and deductibles. Those with high incomes pay higher premiums (above \$85,000 single or \$170,000 filing jointly).

Source: Employee Benefit Research Institute (EBRI) data as of December 31, 2017; SelectQuote data as of January 18, 2018; 2017 Medicare Trustees Report, July 13, 2017; J.P. Morgan analysis.

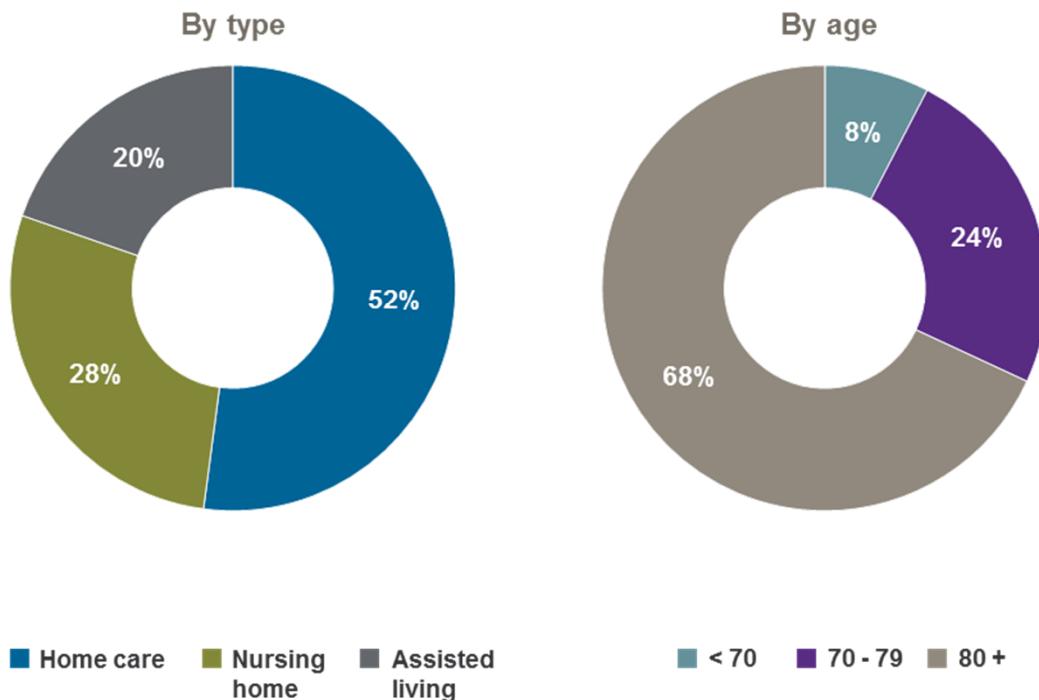


Long-term care considerations

| 33

New long-term care insurance claims

Spending



LONG-TERM CARE: NOT JUST NURSING HOMES

Many individuals will need long-term care, which often starts with home care and may progress to assisted living or care in a nursing home.

While the majority had care needs at age 80 or older, nearly one-third experienced a care need before then.

Source (charts): American Long-Term Care Association for Long-Term Care Insurance, 2015 LTC Sourcebook.

Annualized historical inflation for nursing home (private room): 3.8%; assisted living (one-bedroom): 2.6%; home health aide: 2.5%. 5-year CAGR represents the compound annual growth rate based on Genworth Cost of Care Survey. Source for cost of care inflation information: Genworth 2017 Cost of Care Survey, conducted by CareScout®, June 2017. © 2017 Genworth Financial, Inc. All rights reserved. Methodology document for inflation information: https://www.genworth.com/dam/Americas/US/PDFs/Consumer/corporate/cost-of-care/131168_081417.pdf

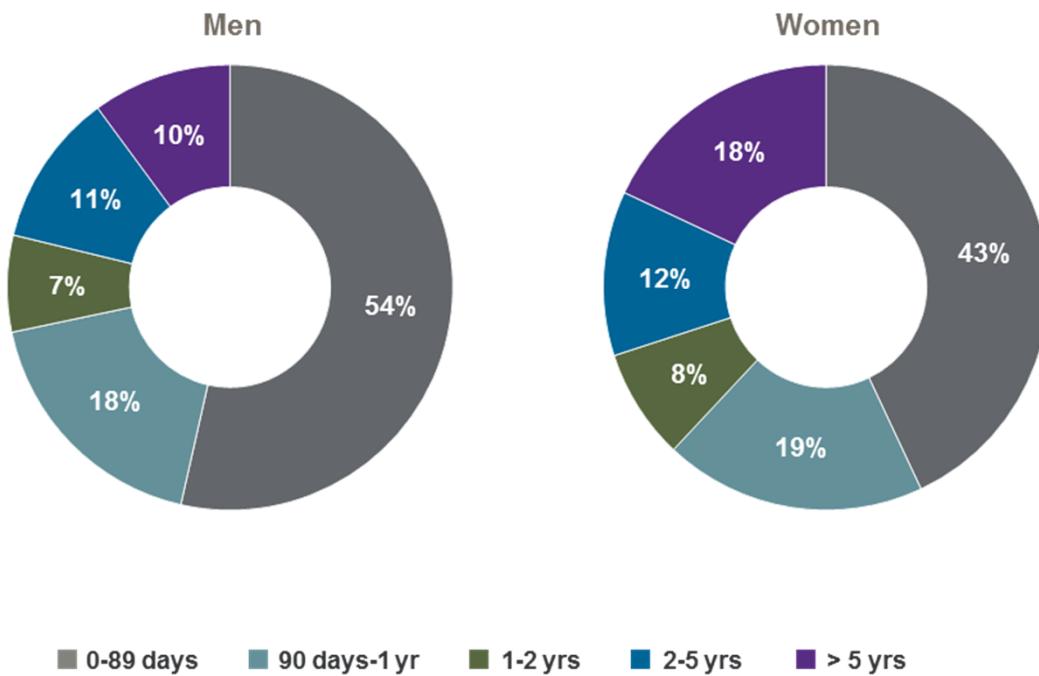


Long-term care planning

| 34

Projected lifetime need for significant long-term care for individuals at age 65¹

Spending



HOW LONG MIGHT YOU NEED CARE?

Average care needs don't tell the whole story since some individuals won't need care, some have a short-term need and others will need significant care for more than 5 years.

¹ Significant long-term care needs include requiring assistance with at least 2 or more activities of daily living that are expected to last at least 90 days or the need for substantial supervision for health and safety threats due to severe cognitive impairment. Activities of daily living include eating, dressing, bathing, transferring and toileting. Those who meet the cognitive impairment criteria who require care for less than 90 days are included in the 90 days – 1 year category above.

Not included: non-acute care for rehabilitation; less severe impairment such as requiring assistance with 1 activity of daily living; needing assistance with incidental activities of daily living such as shopping, cooking, taking medication, using transportation and paying bills.

29

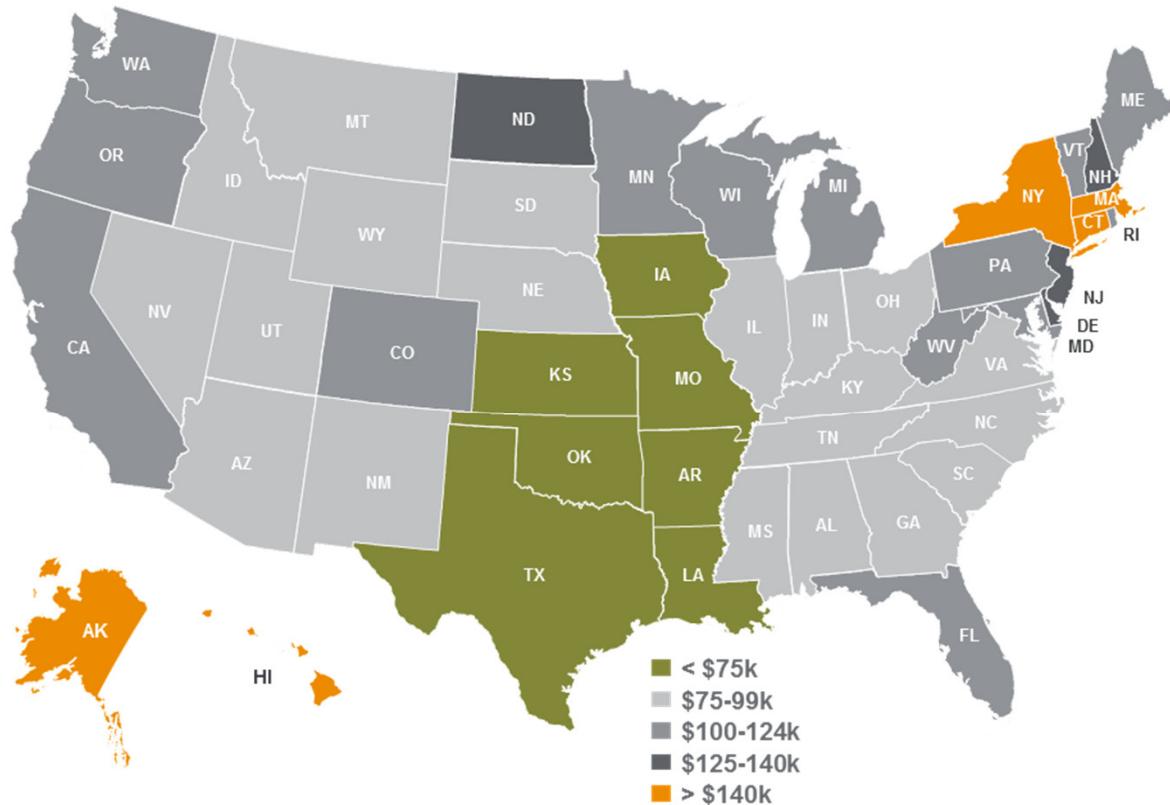
Source: U.S. Department of Health and Human Services, ASPE Issue Brief, Revised February 2016, Table 1.



Median annual cost of nursing home care (private room)

| 35

Spending



THE COST OF CARE

There can be significant variations in cost depending on where care is utilized.

Methodology document: https://www.genworth.com/dam/Americas/US/PDFs/Consumer/corporate/cost-of-care/48590_081417.pdf

For more information on cost of care from Genworth see: <https://www.genworth.com/about-us/industry-expertise/cost-of-care.html>

Source: Genworth 2017 Cost of Care Survey, conducted by CareScout®, June 2017. Annual median costs based on 365 days of care.

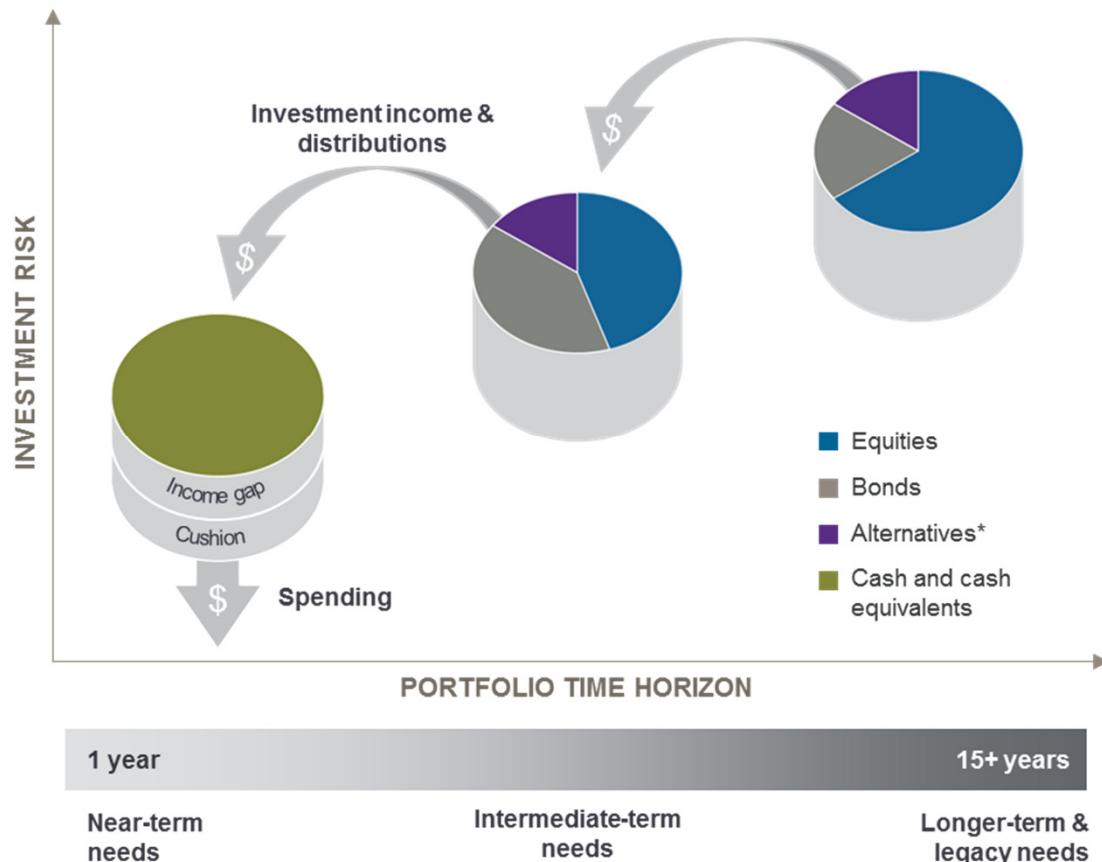
© 2017 Genworth Financial, Inc. All rights reserved.



Structuring a portfolio in retirement: The bucket strategy

| 39

Investing



TIME-BASED SEGMENTATION

Aligning your time horizon with an investment approach may help you 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.



Power of attorney and asset transfer considerations

| 45

Principal: Individual who directs another to act for his/her own benefit | **Agent:** Individual appointed to fulfill specified directives of principal

	APPOINTS OR INSTRUCTS				TIMING	
	Appoints an agent to manage the day-to-day affairs of the principal	Appoints an agent to manage the health care of the principal	Provides instruction to manage the health care of the principal	Provides instructions for managing and transferring principal's assets	Powers/instructions applicable during <i>life of principal</i>	Powers/instructions applicable at <i>death of principal</i>
General power of attorney (POA)¹	✓				✓	
Durable power of attorney¹	✓	✓ Used in place of General POA			✓	
Health care proxy		✓			✓	
Advance health care directive / Living will²			✓		✓	
Will				✓	Review/update periodically	✓
Revocable trust³				✓	✓	✓
Irrevocable trust⁴				✓	✓	✓

¹ Terminates when the principal becomes incapacitated or unable to make decisions about finances and health, whereas Durable POA continues when principal becomes incapacitated. ² Principal provides written instructions in advance to ensure specific medical care in case he/she becomes incapacitated; many states combine the living will with durable power of attorney. Some states may not recognize health care directive of another state. ³ Provides instructions in the event of principal's mental disability and to avoid probate of his/her assets; principal is the owner and beneficiary of the trust; the trust may be revoked at any time during life and becomes irrevocable at death.
⁴ Principal/grantor gifts assets to trust during life to remove from his/her estate, or at death, assets are moved to the trust. Trust becomes owner of assets and any future growth is removed from grantor's taxable estate.



J.P. Morgan Asset Management—Index definitions & disclosures

| 49

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

Past performance is no guarantee of comparable future results.

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

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

The **S&P 500 Index** is widely regarded as the best single gauge of the U.S. equities market.

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

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

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

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

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

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

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

JPMorgan Distribution Services, Inc., member FINRA / SIPC.

J.P. Morgan Asset Management is the marketing name for the asset management businesses of JPMorgan Chase & Co. and its affiliates worldwide.

Copyright © 2018 JPMorgan Chase & Co. All rights reserved.

JP-GTR | 0903c02a81c9c127

NOT FDIC INSURED. NO BANK GUARANTEE. MAY LOSE VALUE.