RETIREMENT INSIGHTS

Guide to Retirement℠

The Millennials

J.P.Morgan
Asset Management

Agenda

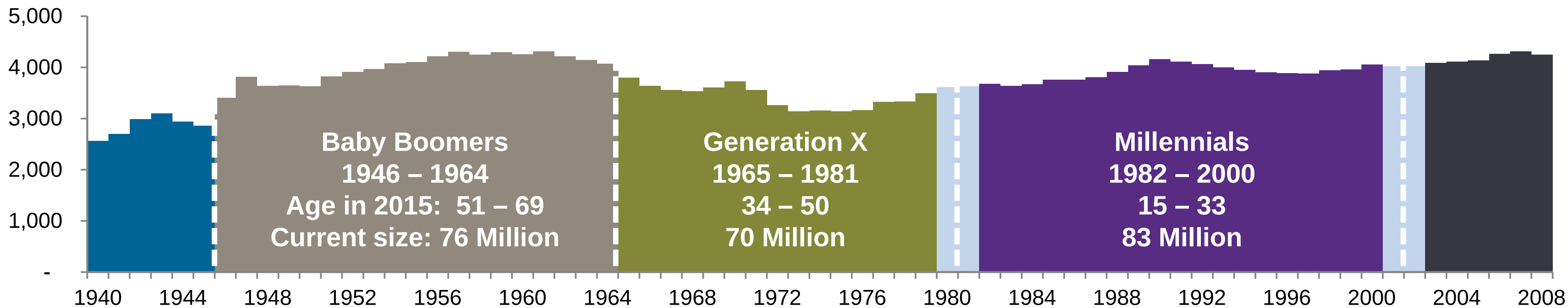
Who are the millennials?

The median and affluent millennials

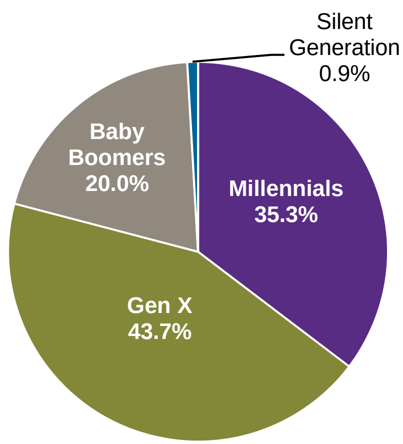
How to have the conversation

Who are the millennials

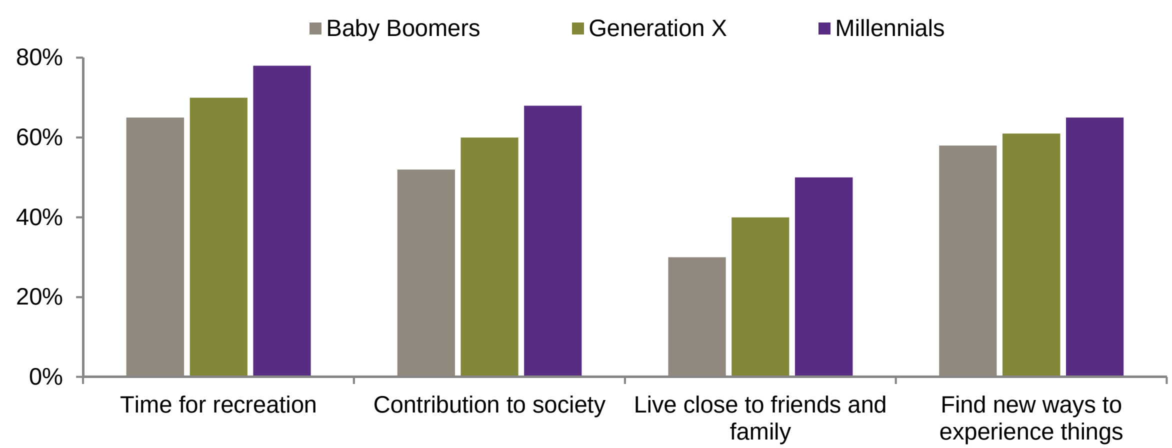
U.S. births by year (thousands)[1]



% distribution of the American workforce, 2013[2]



% reporting life goals as being "quite or extremely important" [3]



1 Census Statistical Abstracts, 2012, 1970, 1960

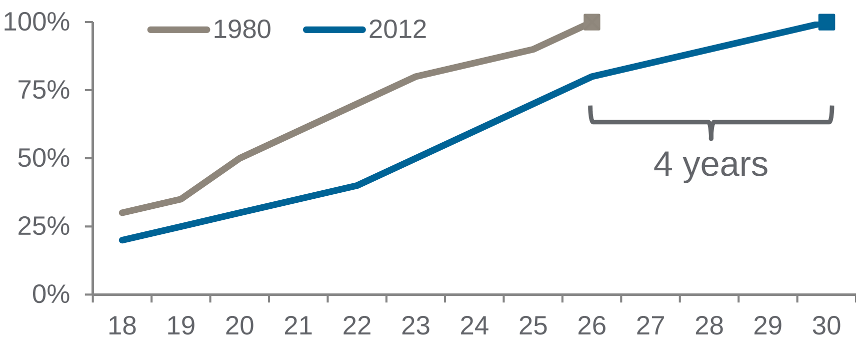
2 BLS 2013. For the purposes of this chart, the generational age cohorts are as follows: Millennials: 16-34. Gen X: 35 to 54. Baby Boomers: 55 to 74. Silent Generation: 75+

3 Monitoring the Future, 1976-2011; CEA calculations

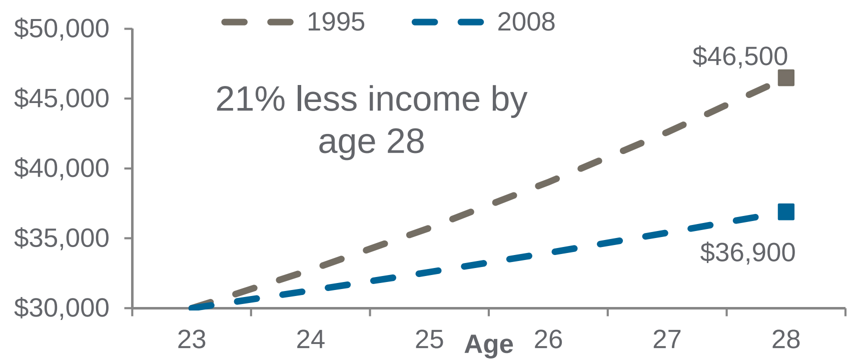
J.P.Morgan Asset Management

Who are the millennials

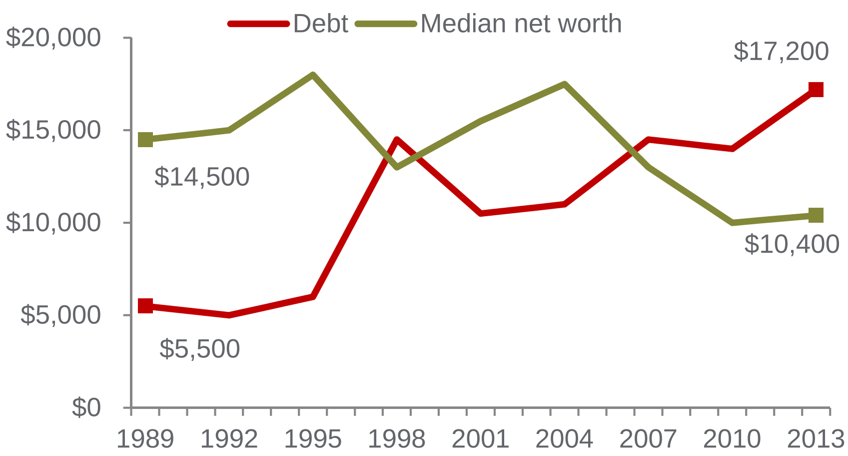
Earnings relative to median[1]



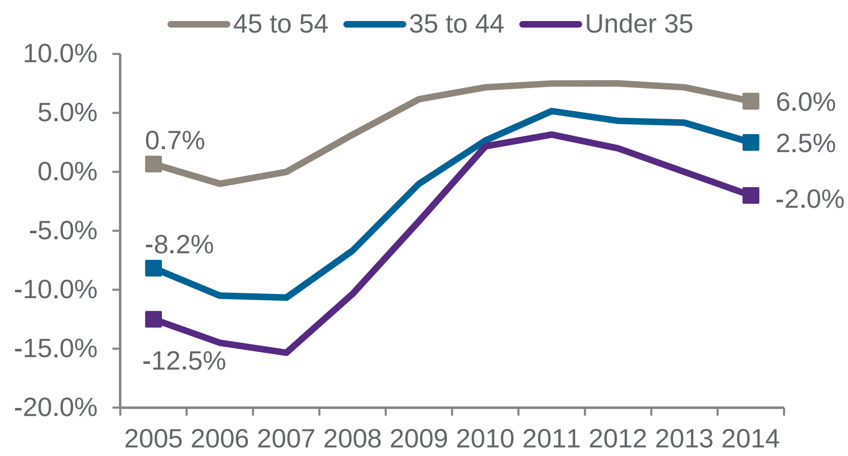
Income growth for college-educated workers, ages 23 to 28[2]



Student debt and median net worth, under age 35, 2013 dollars[3]



Savings rate by age[3]

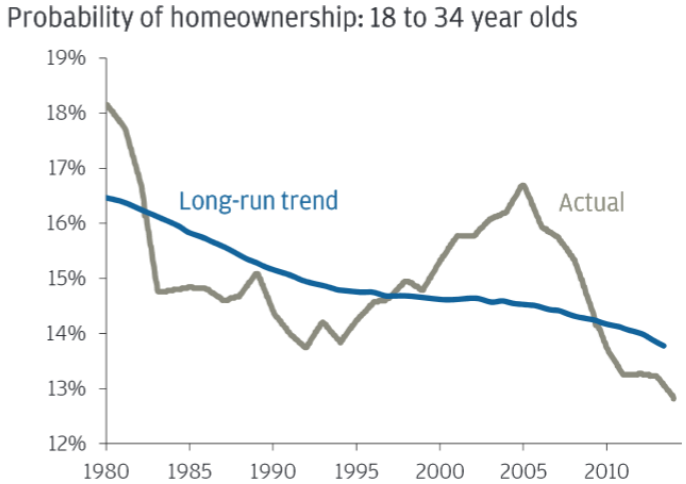


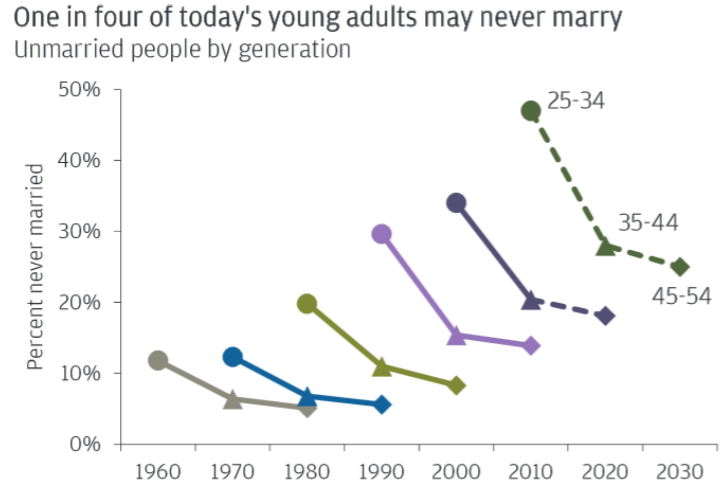
1 Failure to Launch: Structural Shift and the New Lost Generation," Georgetown University, 2013 p.13

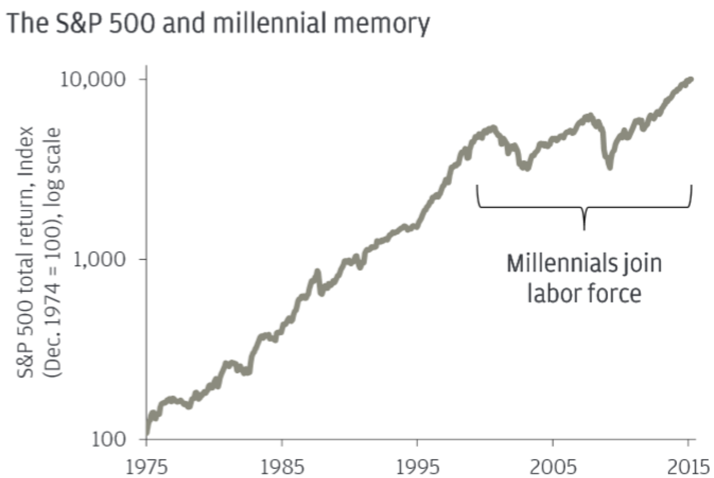
2 CPS 1994-2008; CEA Calculations. JPMAM analysis, today's dollars

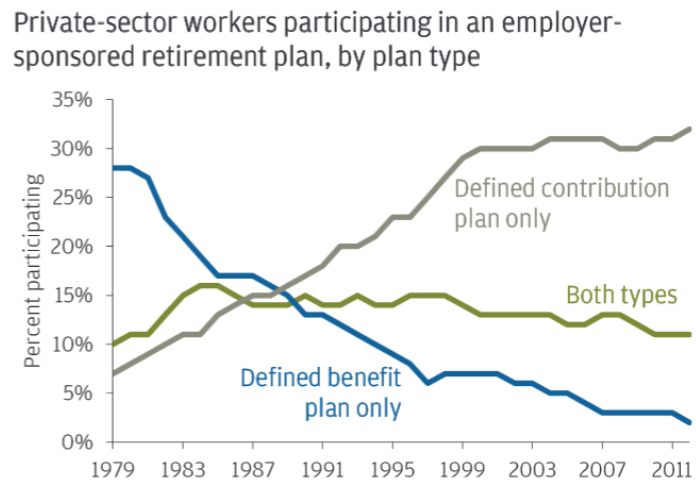
3 Source: Moody's Analytics (savings rate); Federal Reserve (debt and net worth). " Younger Generation Faces a Savings Deficit," The Wall Street Journal, 11/9/14; savings rates are rolling three-year averages

Who are the millennials









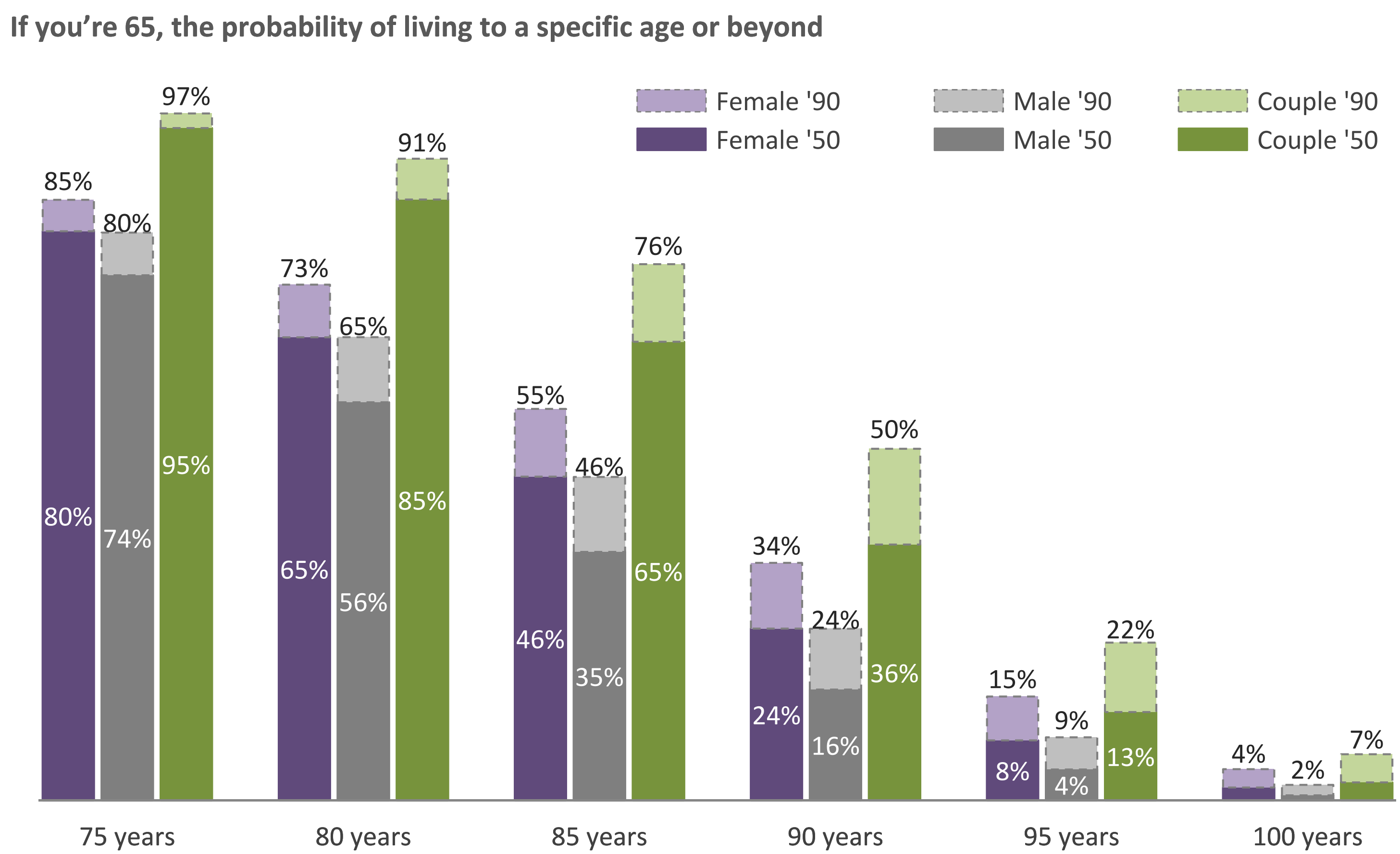
1 Bureau of Labor Statistics, Council of Economic Advisers, 2014

2 Pew Research Center. 2014. Dotted lines are projections

3 Robert Shiller. March 2015.

4 Employee Benefit Research Institute. 2012

Longer retirements as life expectancy increases



1 Cohort life tables. Social Security Administration: J.P. Morgan Asset Management. %s differ from GTR slide 6 due to use of cohort vs. period life tables

J.P.Morgan
Asset Management

Agenda

Who are the millennials?

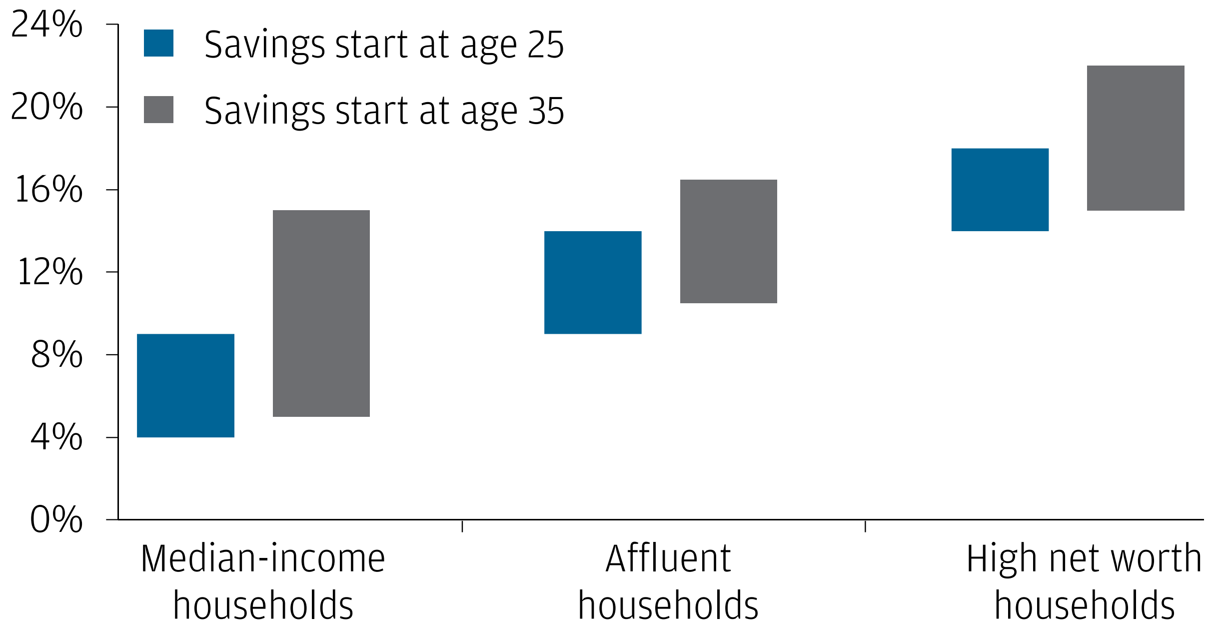
The median and affluent millennials

How to have the conversation

There is hope

Recommended annual pre-tax contribution to savings by each working spouse to offset impact of adverse events

Percent of pre-tax income



In addition to contributions shown, households assumed to save 2% of after-tax income, and benefit from a 50% employer match of pre-tax savings, capped at 3%. Source: JPMAM. 2015.

J.P.Morgan Asset Management

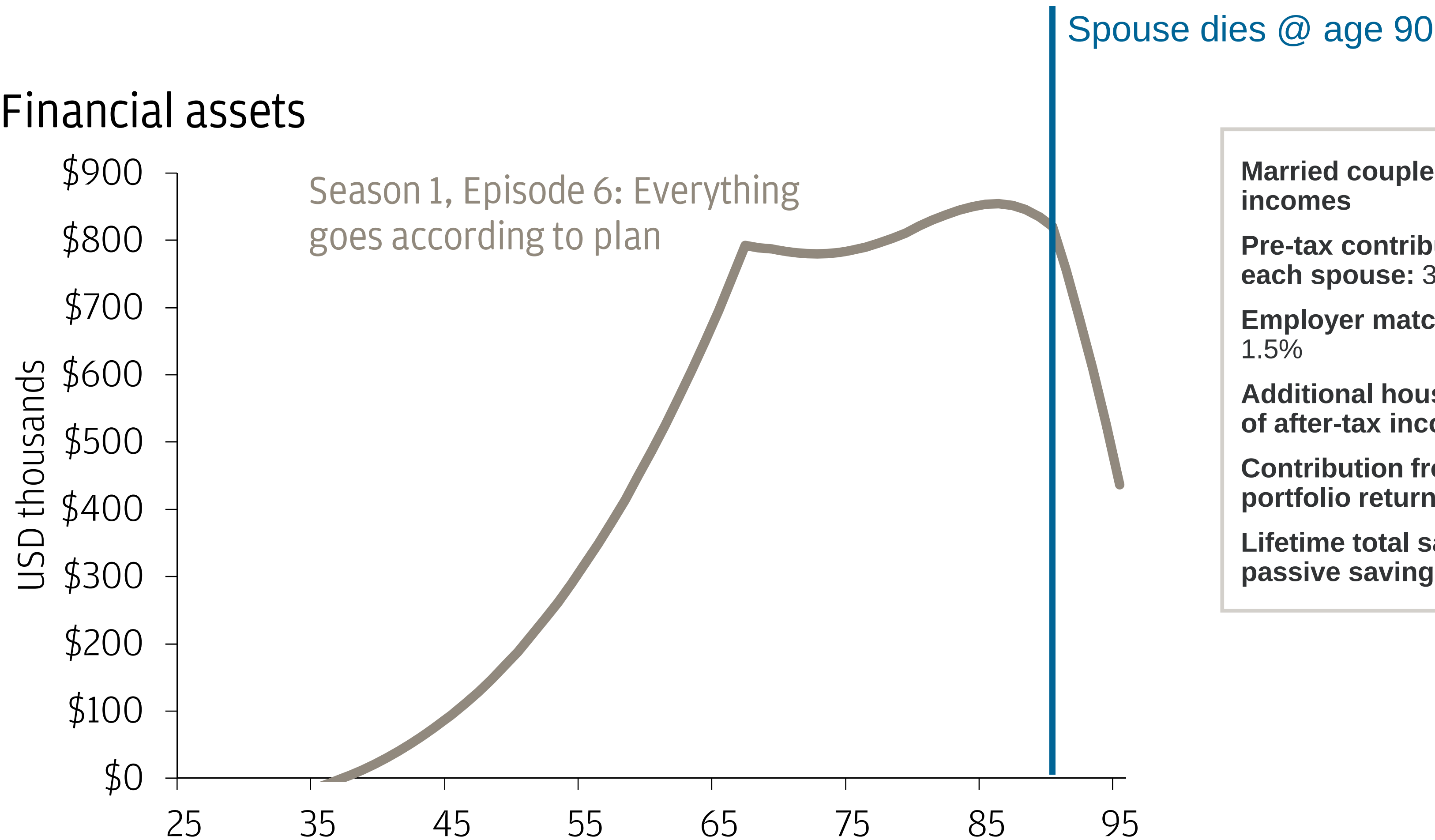
Our millennials – Chad and Jane Selphy

Median income

- Music teachers
- Enjoy taking pictures of themselves
- Both work until retirement @ age 67
- Active savers – 3% of pre-tax income, benefit from employer match, and save another 2% after-tax
- Accustomed to a high standard of living since they live off two incomes – they intend on replacing 100% of pre-retirement disposable income
- Paid off their student debt ($54,000 total) but as a result never bought a home since they could not afford the down payment
- Take Social Security @ age 68 with 108% of benefits
- Chad passes away @ age 90, reducing their total Social Security income, but also reduces their spending by 20%

When everything goes according to plan

Median income



Married couple, two median incomes

Pre-tax contribution to savings by each spouse: 3%

Employer match for each spouse: 1.5%

Additional household savings as % of after-tax income: 2%

Contribution from pre- and after-tax portfolio returns: 5.5%

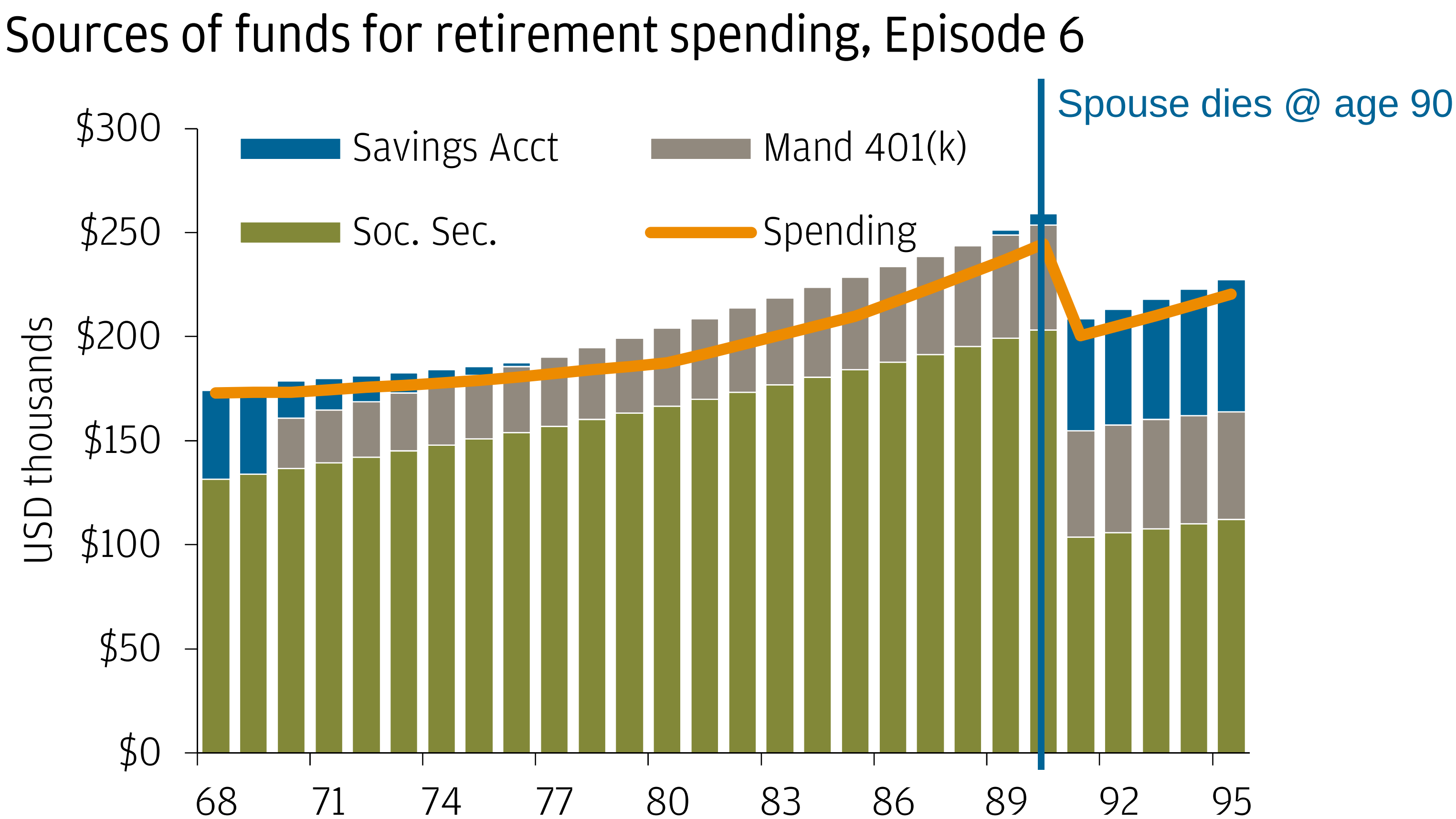
Lifetime total savings rate (active + passive savings): 11.1%

J.P. Morgan Asset Management

J.P.Morgan Asset Management

Retirement financed by Social Security and mandatory 401(k) withdrawals

Median income



J.P. Morgan Asset Management

Sometimes life gets in the way

Family emergencies and accidents

Health and forced early retirement

Too much consumption

Late bloomers pursue dreams first

Extended bouts of unemployment

No 401(k) plan from employer

Home values lag national levels

Social Security benefit changes

Divorce, separation and child support

Elder-care expenses for parents

Overly conservative investing

Cap on 401(k) contributions

Job redundancy & reduced income

Unanticipated medical expenses

Market returns below normal level

College tuition, less student loans

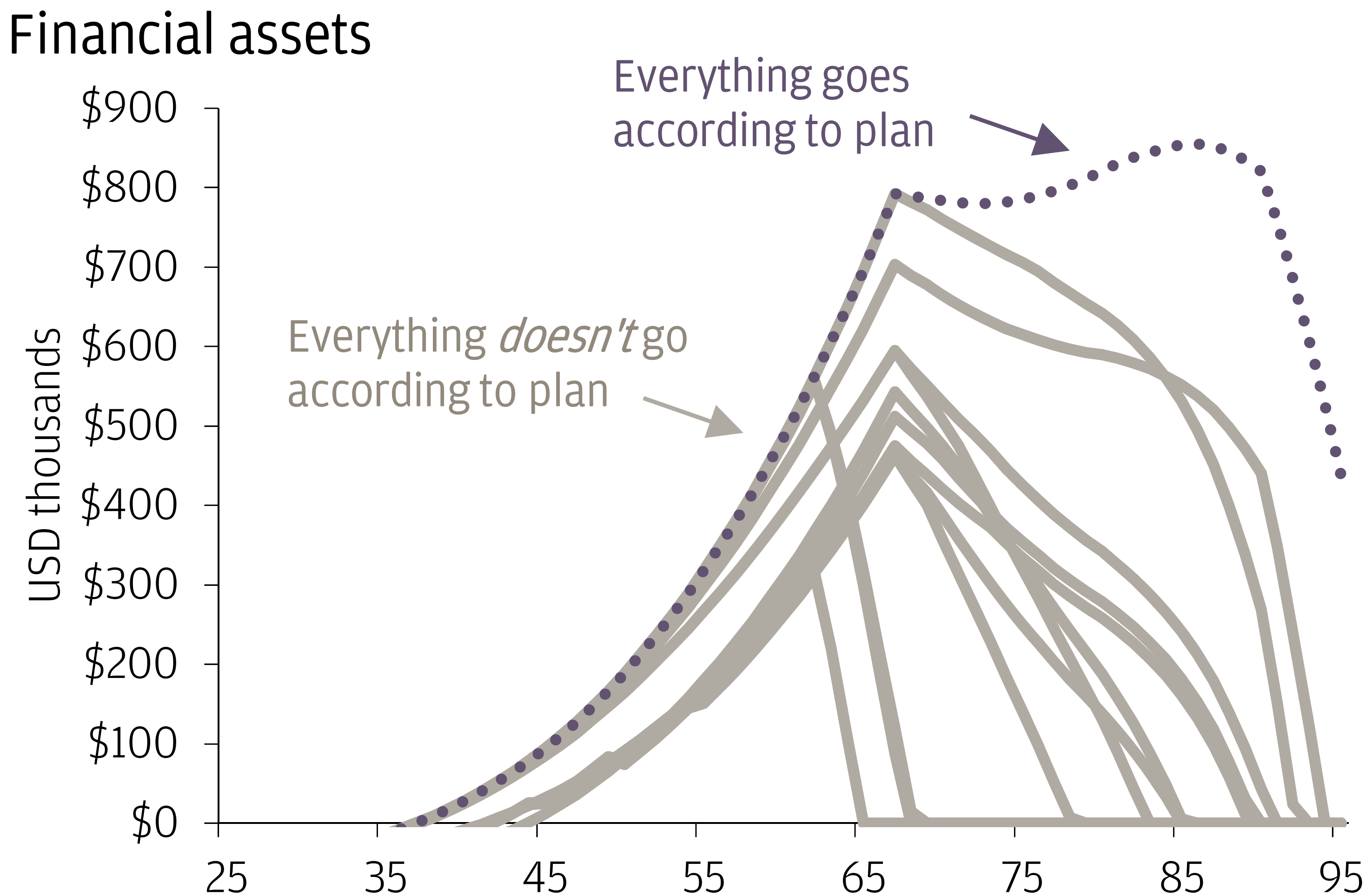
Higher effective tax rates

The perfect storm hits all at once

J.P.Morgan Asset Management

Financial assets when everything *doesn't* go according to plan

Median income



J.P. Morgan Asset Management

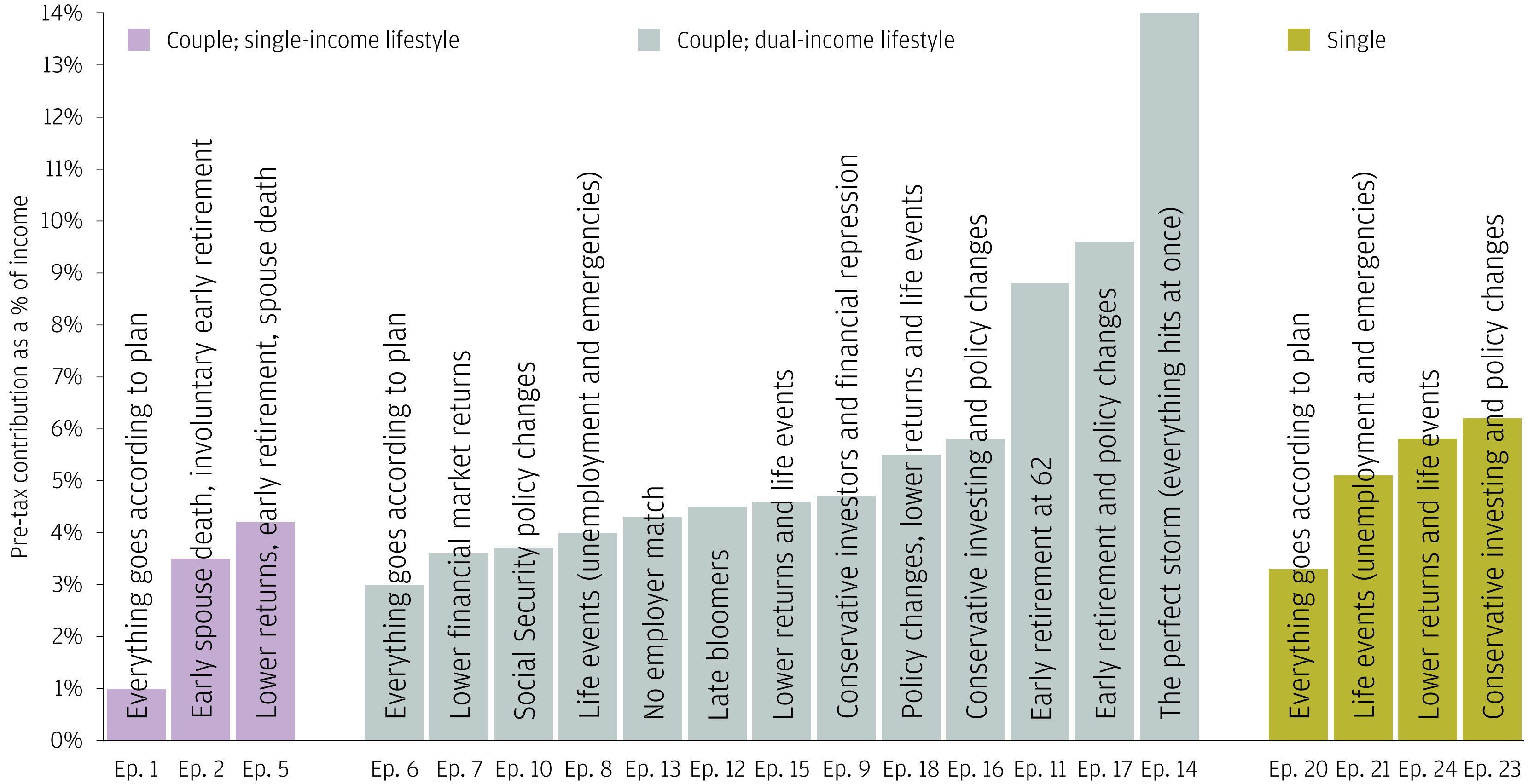
J.P.Morgan Asset Management

Season 1: Median-income episodes and corresponding contribution rates

The Millennials: Summary of Season 1

Annual pre-tax contribution to savings required by each median earner for financial wealth to last through end of retirement

All savings begin at age 25 and continue to retirement. In addition to retirement account contributions shown in the bars, households are assumed to save 2% of after-tax income, and benefit from a 50% employer match of pre-tax savings, capped at 3%. For couples, pre-tax contribution rates apply to both spouses.



Source: JPMAM. 2015.

J.P.Morgan Asset Management

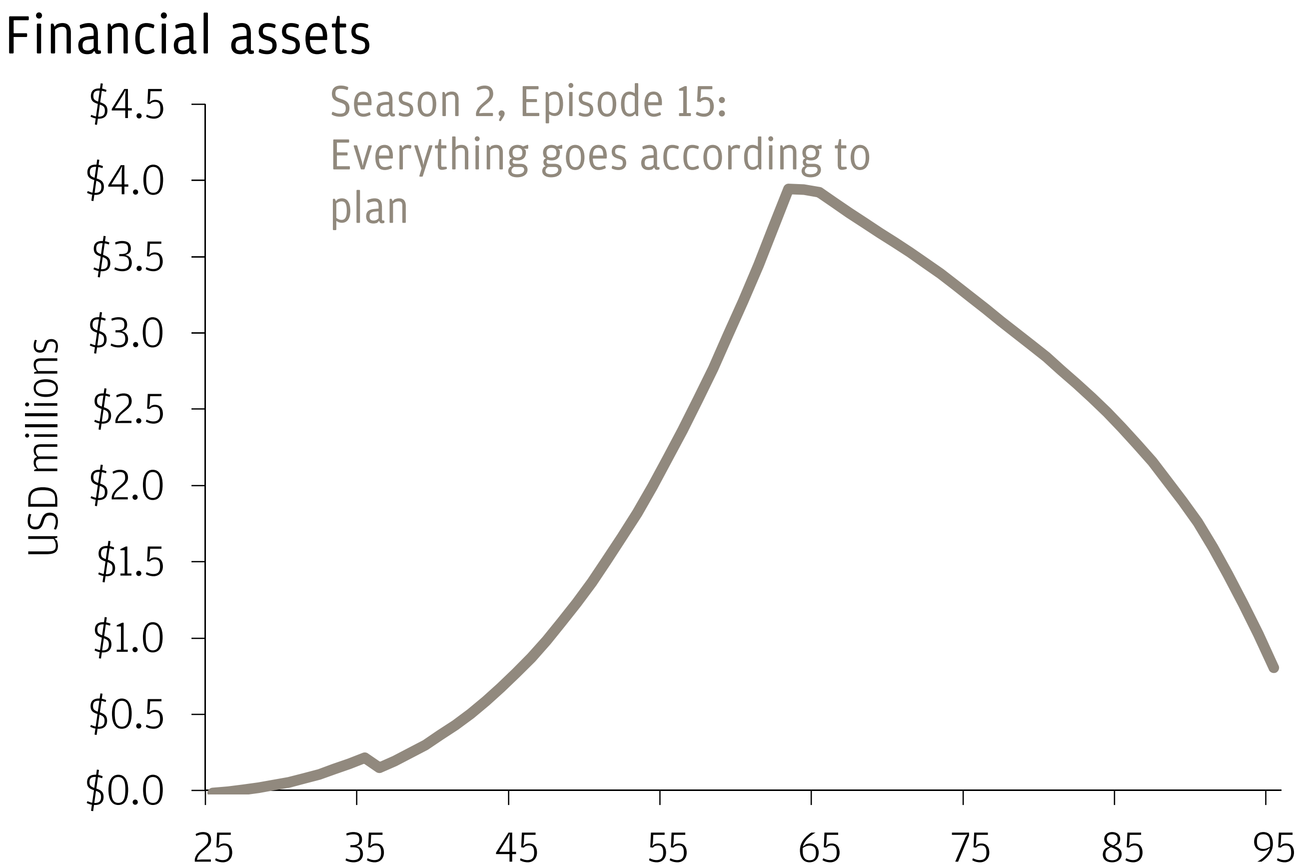
Our millennials – Anita and Chip Oately

Affluent income

- An attorney who specializes in defending against “microaggressions”
- An agribusiness sales rep who specializes in GMOs
- Both work until retirement @ age 63
- Active savers – 8.3% of pre-tax income, benefit from employer match, and save another 2% after-tax
- Accustomed to a high standard of living since they live off two incomes – they intend on replacing 85% of pre-retirement disposable income
- Paid off their student debt ($27,000 total) and bought a home @ age 36
- Take Social Security @ age 64 with 80% of benefits
- Chip passes away @ age 90, reducing their total Social Security income, but also reduces their spending by 20%

When everything goes according to plan

Affluent income



Married couple, two affluent incomes

Pre-tax contribution to savings by each spouse: 8.3%

Employer match for each spouse: 3.0%

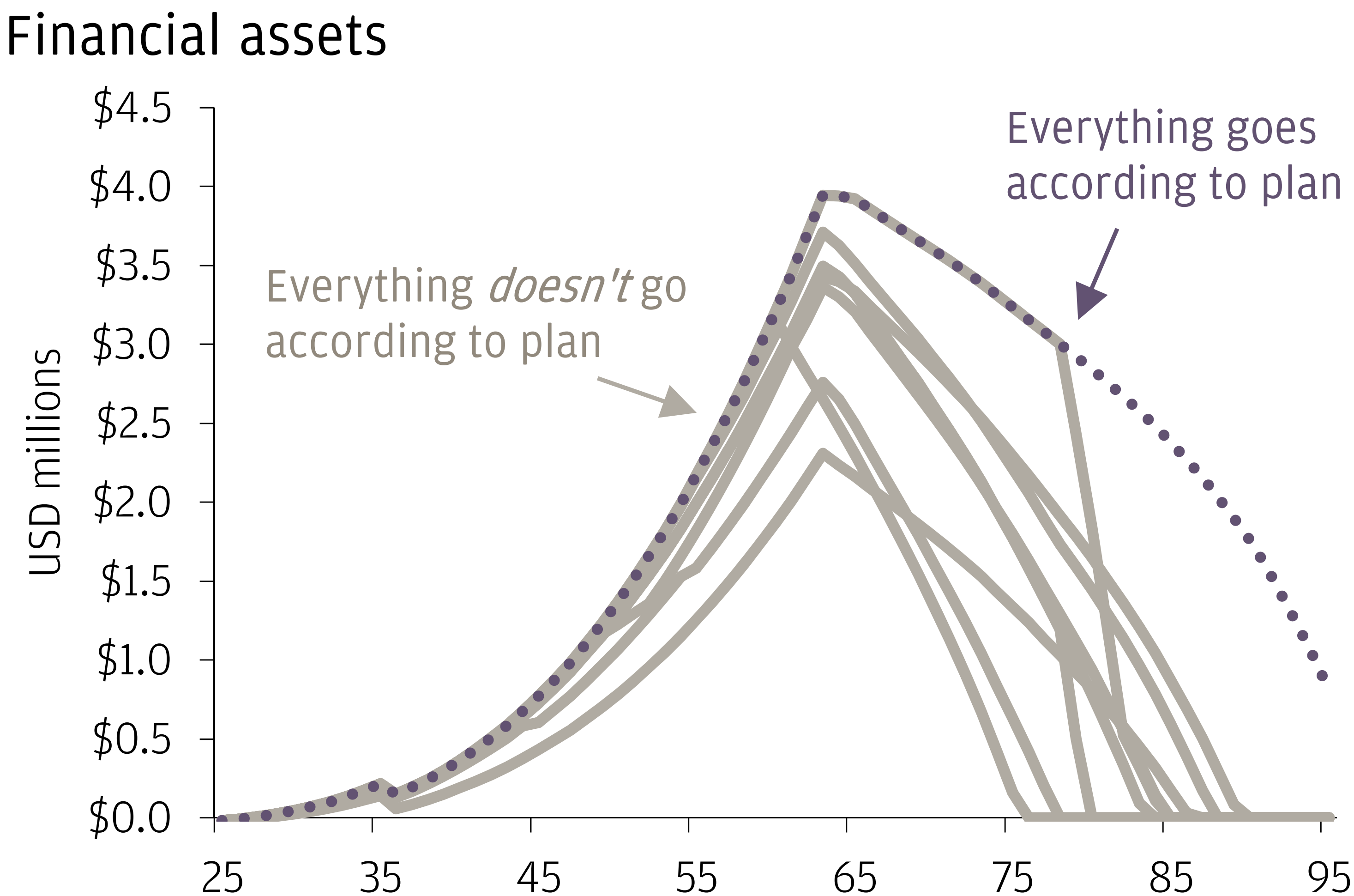
Additional household savings as % of after-tax income: 2.0%

Contribution from pre- and after-tax portfolio returns: 11.9%

Lifetime total savings rate (active + passive savings): 22.9%

Financial assets when everything *doesn't* go according to plan

Affluent income



J.P. Morgan Asset Management

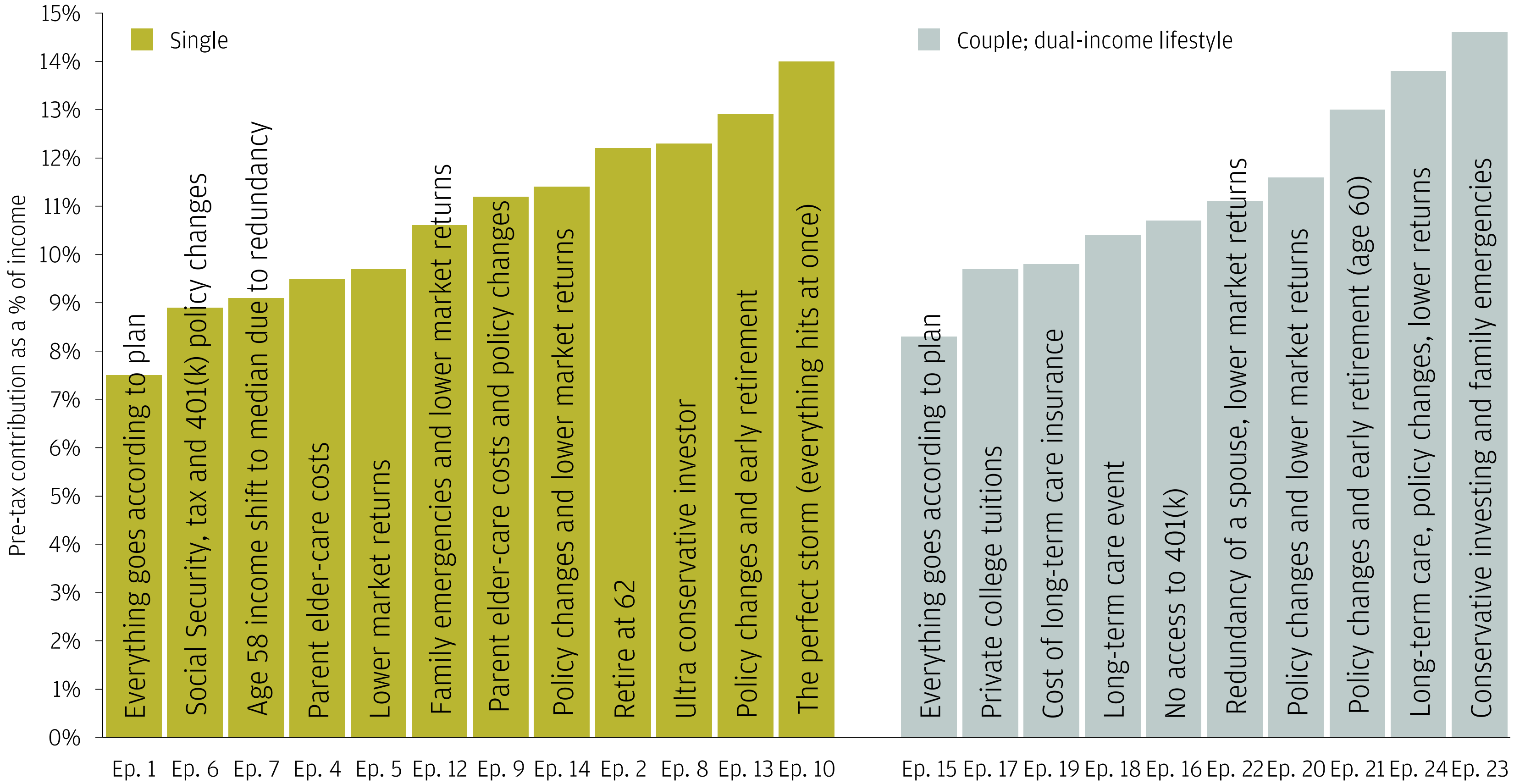
J.P.Morgan Asset Management

Season 2: Affluent episodes and corresponding contribution rates

The Millennials: Summary of Season 2

Annual pre-tax contribution to savings required by each affluent earner for financial wealth to last through end of

All savings begin at age 25 and continue to retirement. In addition to retirement account contributions shown in the bars, households are assumed to save 2% of after-tax income, and benefit from a 50% employer match of pre-tax savings, capped at 3%. For couples, pre-tax contribution rates apply to both spouses.



Source: JPMAM. 2015.

J.P.Morgan
Asset Management

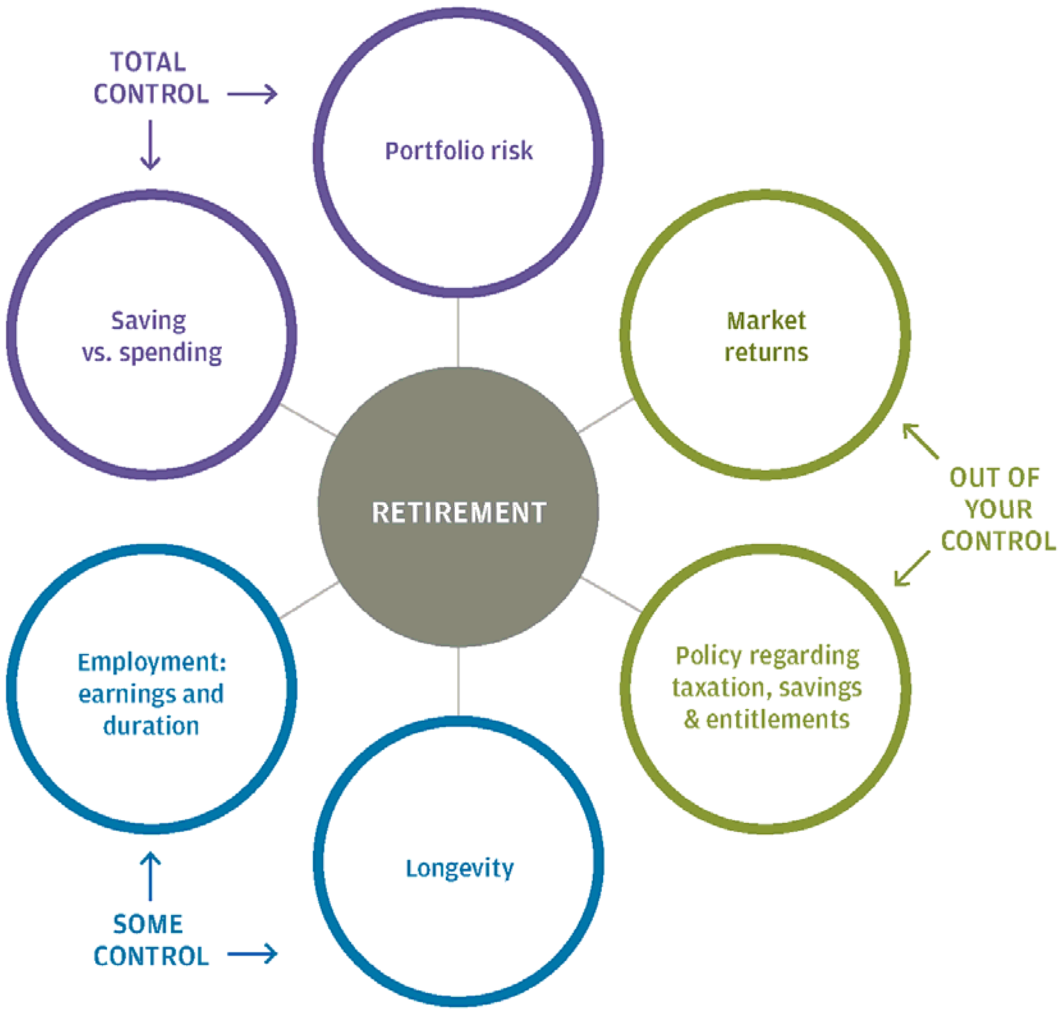
Agenda

Who are the millennials?

The median and affluent millennials

How to have the conversation

The retirement equation



A SOUND RETIREMENTPLAN

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.

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

Saving

Current Age	$50,000	$75,000	$100,000	$150,000	$200,000	$250,000	$300,000	$400,000
	Checkpoint (x Current Salary)							
30	0.3	0.5	0.9	1.5	1.8	2.0	2.2	2.5
35	0.6	1.0	1.4	2.1	2.5	2.8	3.0	3.4
40	1.1	1.5	2.0	3.0	3.5	3.8	4.1	4.6
45	1.6	2.2	2.8	4.0	4.6	5.0	5.4	6.0
50	2.3	3.0	3.8	5.3	6.1	6.6	7.0	7.8
55	3.2	4.1	5.0	7.0	7.9	8.5	9.1	10.1
60	4.3	5.4	6.6	9.0	10.2	11.0	11.7	13.0
65	5.7	7.1	8.6	11.6	13.1	14.1	15.0	16.6

How to use:

- Go to the intersection of your current age and your closest current salary.
- Multiply your salary by the checkpoint shown to get the amount you should have saved today, assuming you continue annual contributions of 5% going forward.
- Example: for a 40-year-old making $100,000: $100,000 x 2.0 = $200,000.

MODEL ASSUMPTIONS

Pre-retirement investment return: **7.0%**

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

Retirement age: **65**

Years in retirement: **30**

Inflation rate: **2.25%**

Confidence level represented: **80%**

Assumed annual contribution rate: **5%**

This chart is for illustrative purposes only and must not be used, or 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 markets assumptions (10 – 15 years). Post-retirement volatility assumption is 6.3%. Salary replacement rates are derived from Aon Consulting's 2008 Replacement Ratio Study data, which assumes individuals receive Social Security payments in retirement. Calculations assume an individual earning $50,000 at retirement will need to replace at least 30% of their pre-retirement income; individuals earning $75,000 will need to replace at least 37%; individuals earning $100,000 will need to replace at least 45%; individuals earning $150,000 will need to replace at least 61%; individuals earning $200,000 will need to replace at least 69%; individuals earning $250,000 will need to replace at least 74%; individuals earning $300,000 will need to replace at least 79%; and those earning $400,000 will need to replace 87%. 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.

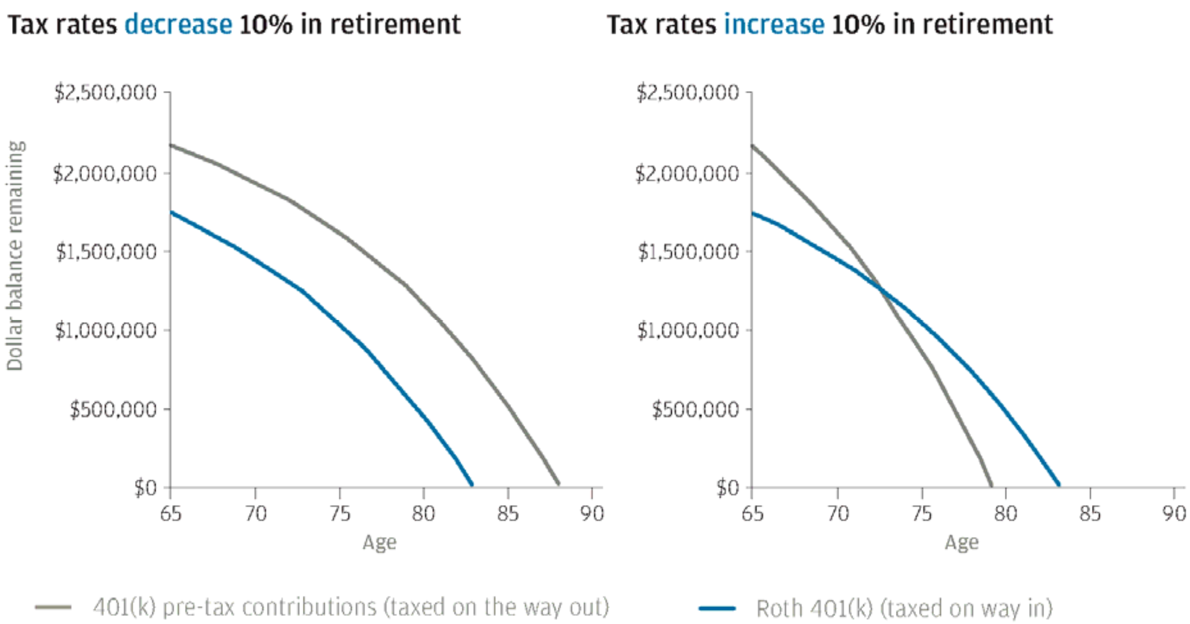
Growth of savings accounts

SAVING FUNDAMENTALS

Harnessing the power of compounding can greatly impact the amount of savings 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 7% annual return. Source: J.P. Morgan Asset Management.

Compounding refers to the process of earning return on principal plus the return that was earned earlier.



CONSIDER INCOME TAX DIVERSIFICATION

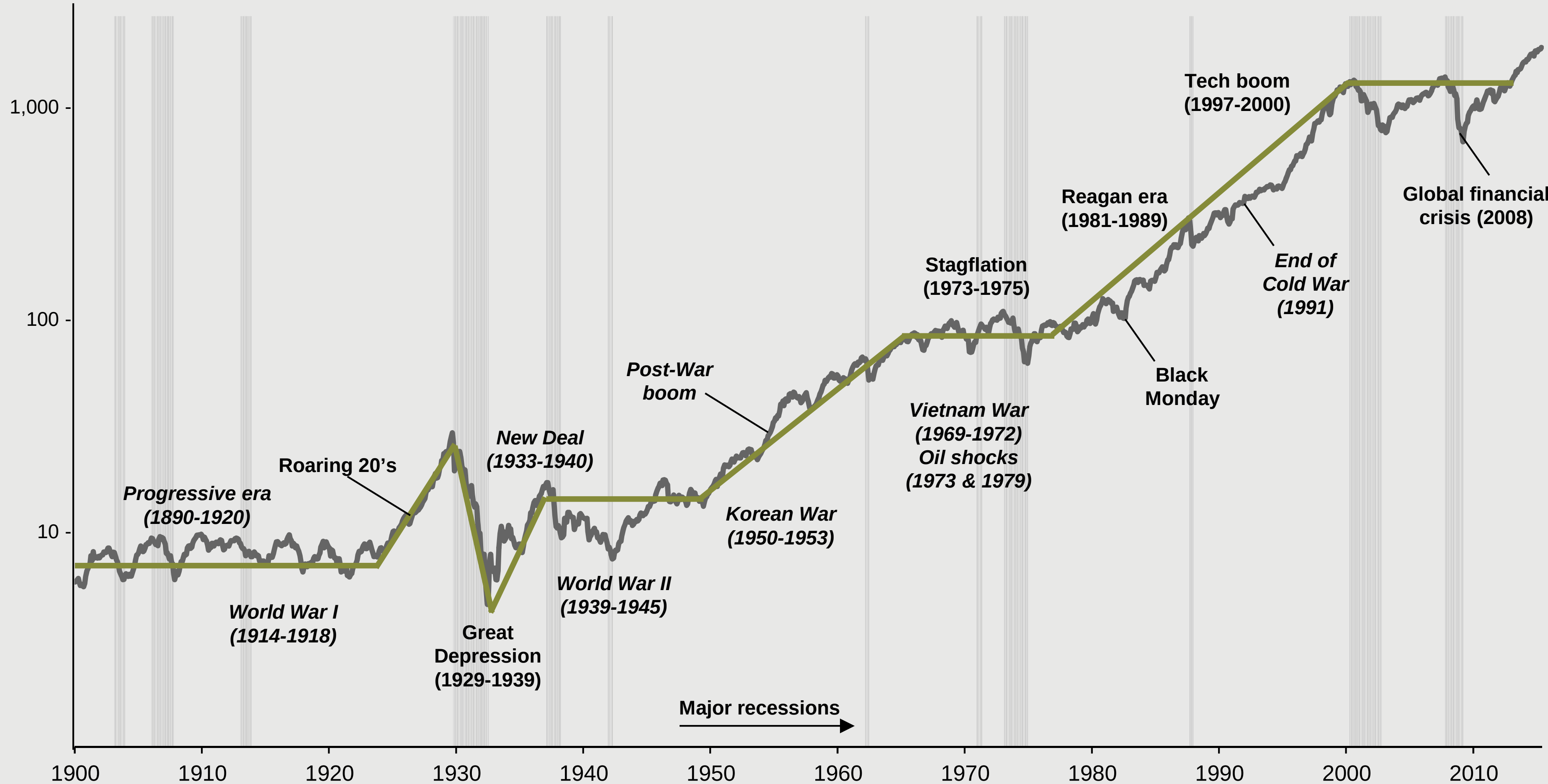
A Roth option may make sense if your income taxes are higher in the future — but also can provide flexibility in higher income tax years when meeting your retirement income needs.

For illustrative purposes only. Hypothetical contribution to 401(k) accounts is assumed as an illustrative example. 401(k) pre-tax contributions: $10,000 is contributed and is taxed upon withdrawal. Roth 401(k): $10,000 is taxed at 25% resulting in a $7,500 annual contribution amount. This ensures a direct comparison of current and future income tax rates between the two account types. The assumed annual rate of return is 7%. In retirement, the person withdraws $150,000 after tax [$150,000 for Roth in both scenarios, $176,471 in the 10% decrease scenario and $230,769 in the 10% increase scenario for the pre-tax 401(k) account] each year until the account is depleted. The breakeven point in the 10% rate increase scenario will change depending on the specific circumstances of the individual and tax rates.

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

Stock market since 1900

S&P Composite Index
Log scale, annual



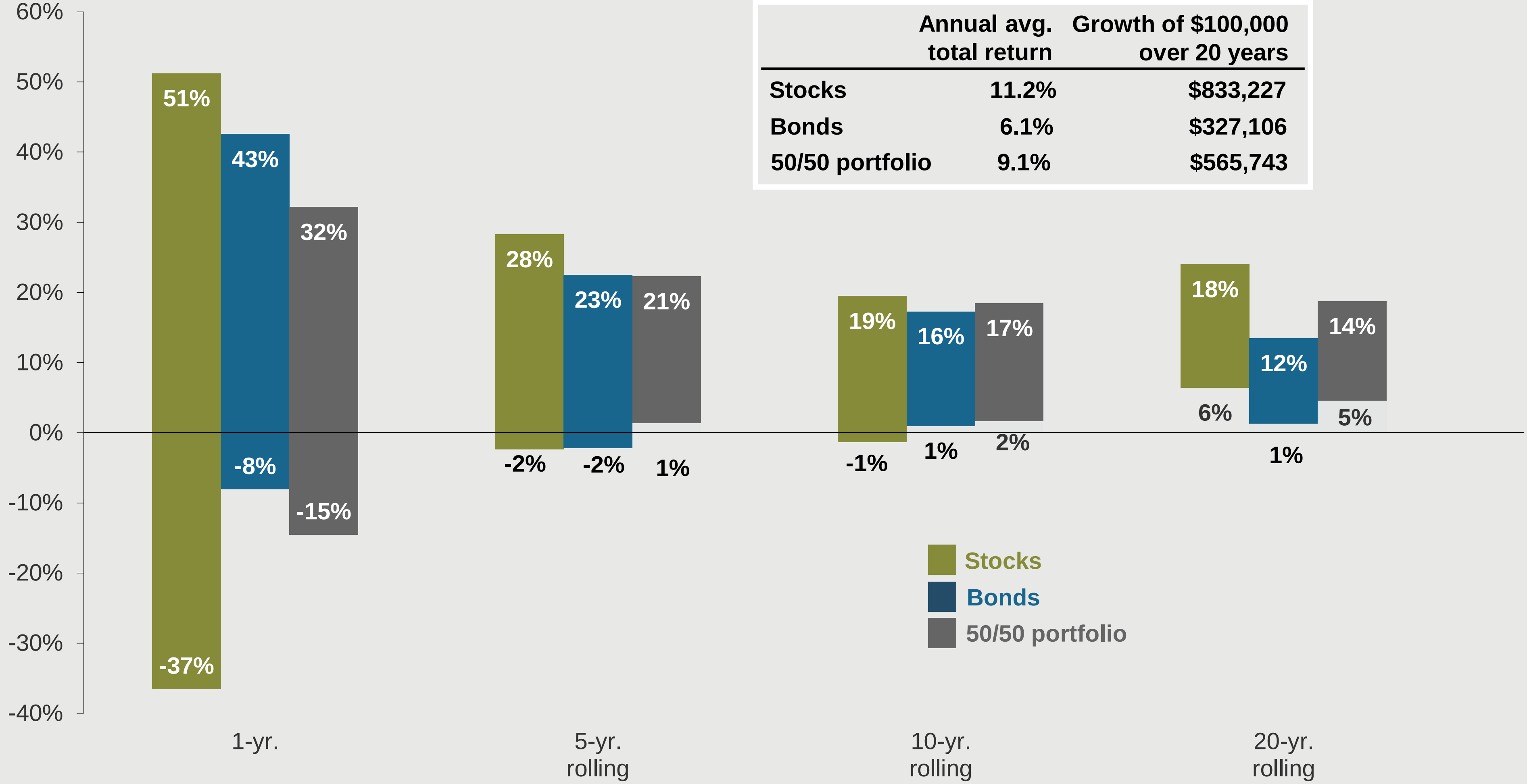
Source: FactSet, Robert Shiller, J.P. Morgan Asset Management.
Data shown in log scale to best illustrate long-term index patterns.
Past performance is not indicative of future returns. Chart is for illustrative purposes only.
Guide to the Markets – U.S. Data are as of June 30, 2015.

Historical returns by holding period

Asset class

Range of stock, bond and blended total returns

Annual total returns, 1950 – 2014



	Annual avg. total return	Growth of $100,000 over 20 years
Stocks	11.2%	$833,227
Bonds	6.1%	$327,106
50/50 portfolio	9.1%	$565,743

Sources: Barclays Capital, FactSet, Federal Reserve, Robert Shiller, Strategas/Ibbotson, J.P. Morgan Asset Management.
Returns shown are based on calendar year returns from 1950 to 2014. Stocks represent the S&P 500 and Bonds represent Strategas/Ibbotson for periods from 1950-1980 and Barclays Aggregate after index inception in 1980. Growth of $100,000 is based on annual average total returns from 1950-2014.
Guide to the Markets – U.S. Data are as of June 30, 2015.

J.P.Morgan Asset Management

Key takeaways

The Millennials are the most educated and diverse generation, they love Beyonce, and Disney Movies and are 4+ years "behind" other generations when they were their age.

They face significant headwinds but they control the tools necessary to successfully save for retirement – targeting a 15% pre-tax savings rate by age 25.

Investing will require some convincing – but overcoming a cash-bias in favor of a balanced approach is a must.

Agenda

Who are the millennials?

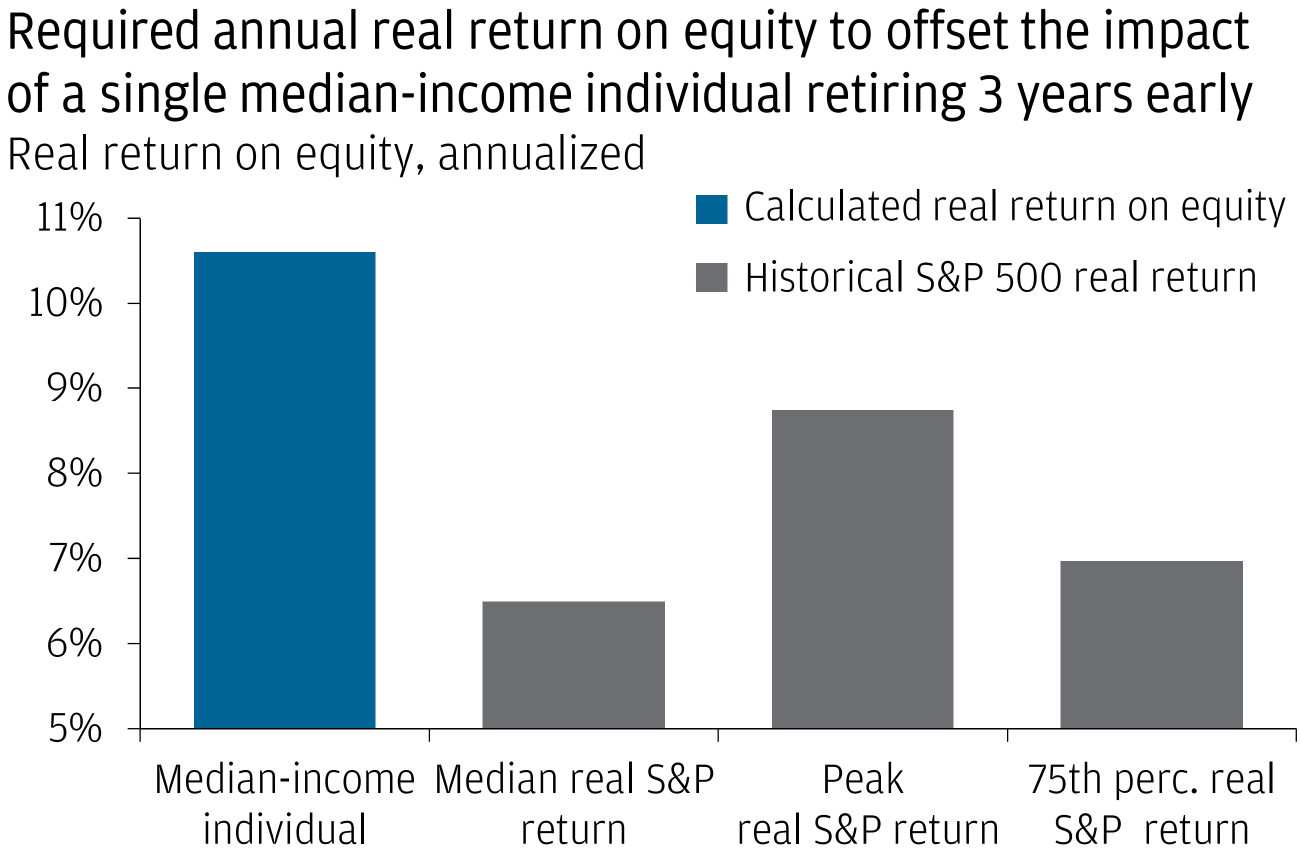
The median and affluent millennials

How to have the conversation

Appendix

Invest your way out of a retirement savings gap? Unlikely

Median income



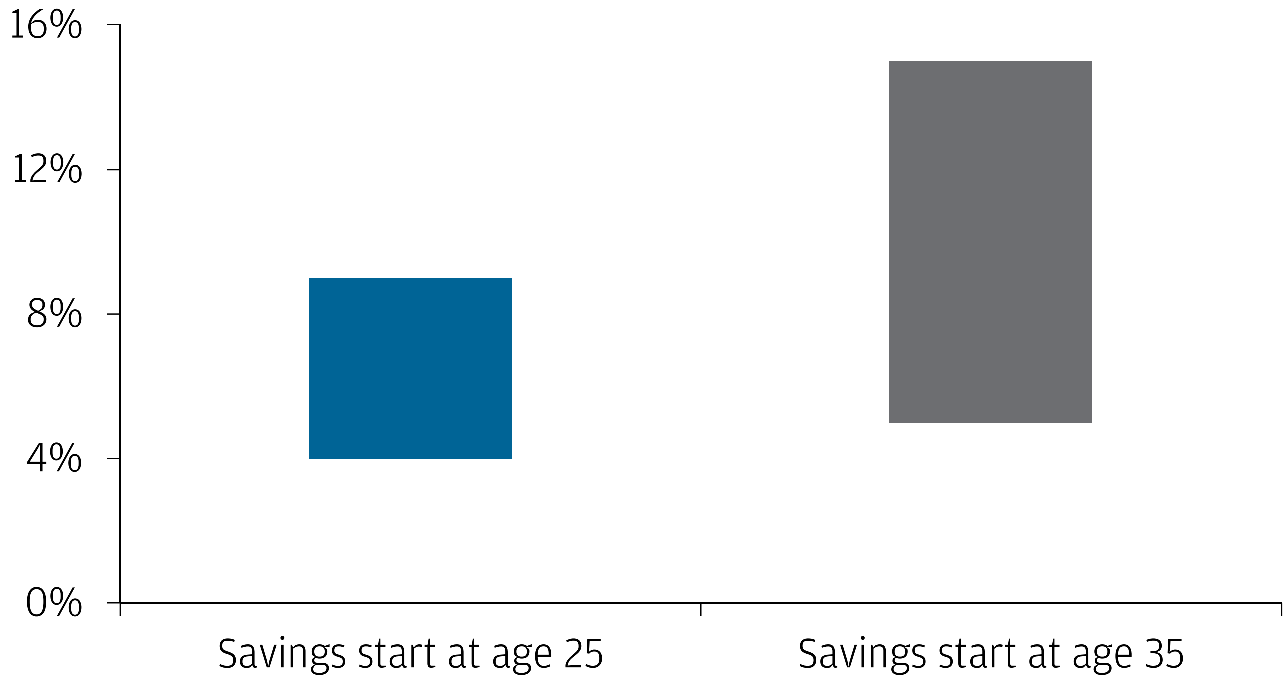
Original planned retirement age for median is 67.
Median, peak and 75th percentile returns based on 35-year rolling periods from 1935 to 2015. Source: Robert Shiller, JPMAM. 2015.

Implications of a late start to saving for median-income households

Median income

Recommended annual pre-tax contribution to savings by each working spouse to offset impact of adverse events

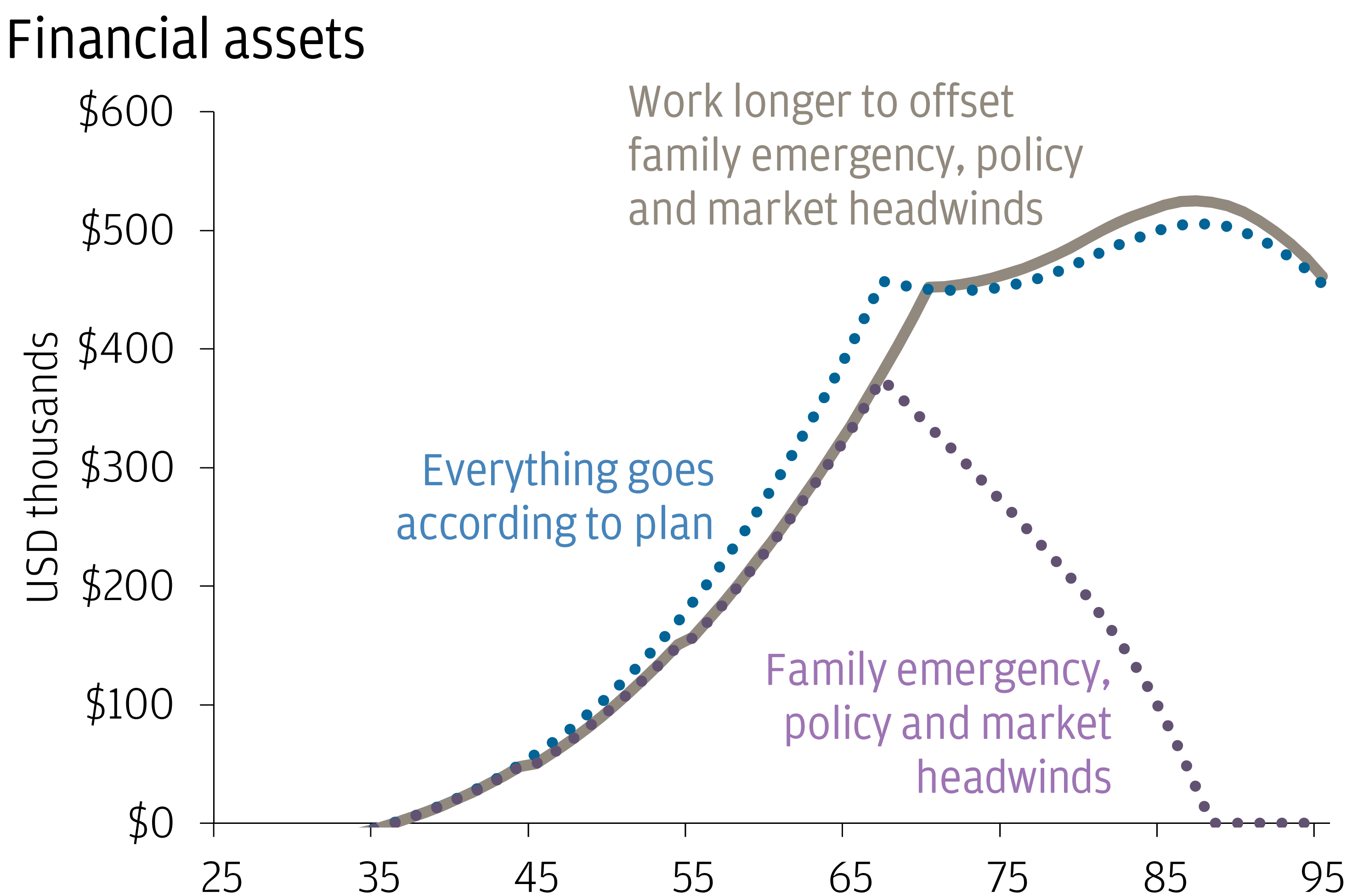
Median-income households, percent of pre-tax income



In addition to contributions shown, households assumed to save 2% of after-tax income, and benefit from a 50% employer match of pre-tax savings, capped at 3%. Source: JPMAM. 2015.

Working longer helps, but isn't always possible

Median income

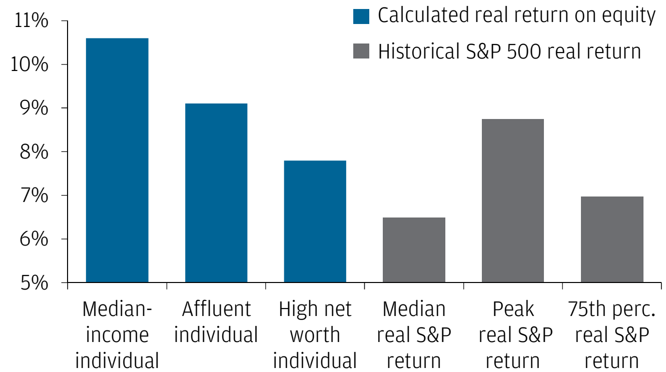


Median individual that originally planned to retire at age 67 works until age 70. J.P. Morgan Asset Management

Summarized findings

Required annual real return on equity to offset the impact of a single individual retiring 3 years early

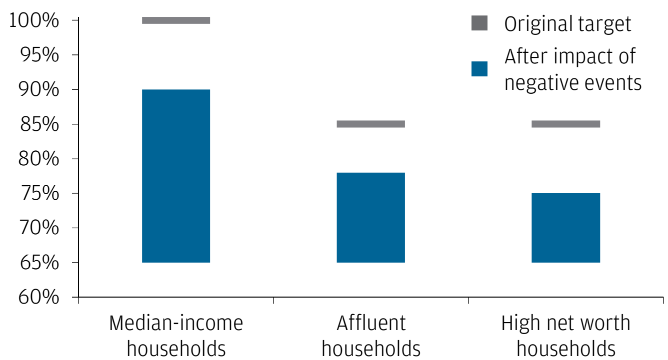
Real return on equity, annualized



Original planned retirement age for median is 67; for affluent and high net worth, 65. Median, peak and 75th percentile returns based on 35-year rolling periods from 1935 to 2015. Source: Robert Shiller, JPMAM. 2015.

Income replacement ratios if no savings adjustments take place to offset adverse events

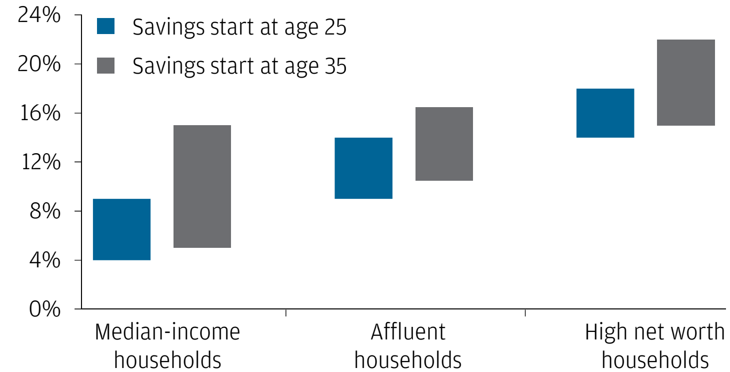
Retiree spending as a percent of pre-retirement disposable income



See Section 1 of the Production Notes in the full white paper for an explanation of initial income replacement ratios and the trajectory of retirement spending adjusted for inflation. Source: JPMAM. 2015.

Recommended annual pre-tax contribution to savings by each working spouse to offset impact of adverse events

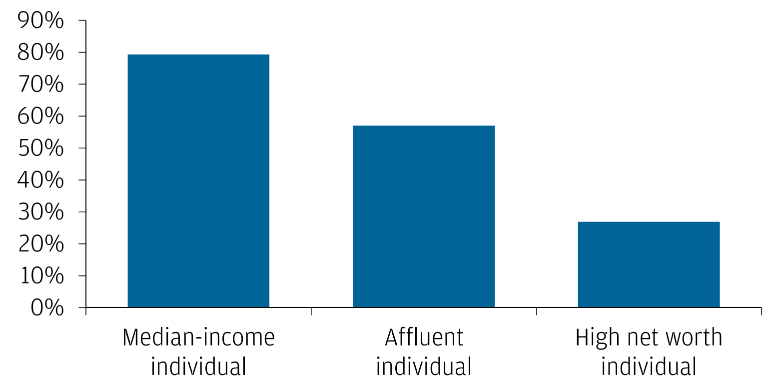
Percent of pre-tax income



In addition to contributions shown, households assumed to save 2% of after-tax income, and benefit from a 50% employer match of pre-tax savings, capped at 3%. Source: JPMAM. 2015.

Retirement spending funded from Social Security benefits

Percent of total retirement spending

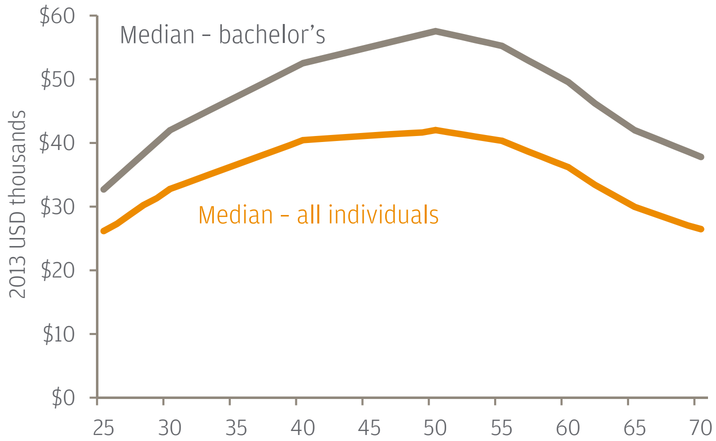


Source: JPMAM. 2015.

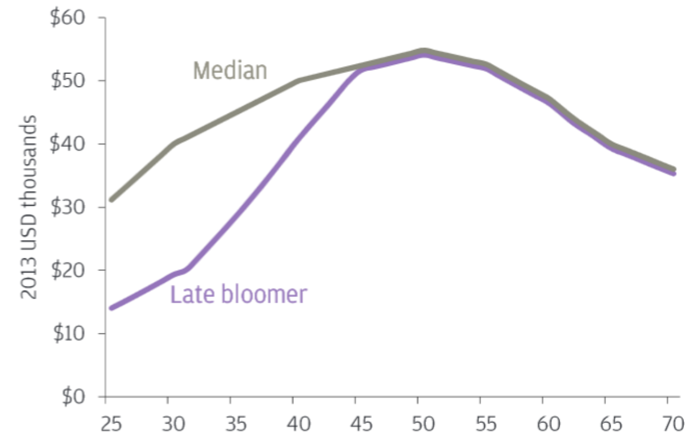
J.P.Morgan Asset Management

Production notes

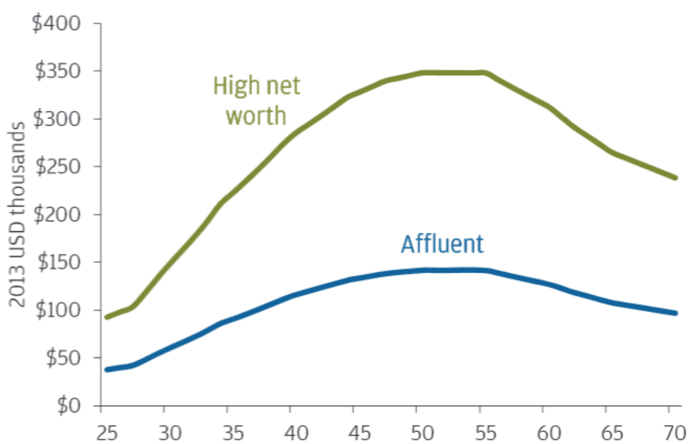
Real income curves by education



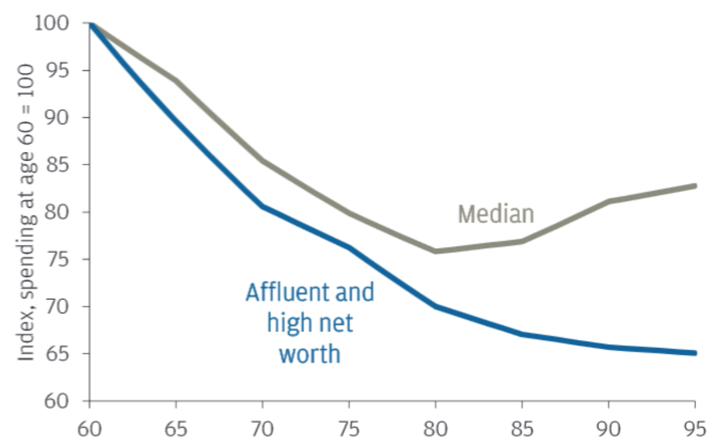
Real income curves by millennial type



Real income curves by millennial type



Real retirement spending paths differ by wealth level



1 U.S. Census Bureau

2 Univ. of Minnesota, Princeton Univ., SSA, U.S. Census, JPMAM. 2013

3 US Census Bureau, J.P. Morgan Asset Management. 2013

4 JPMorgan Chase. 2013

J.P.Morgan Asset Management

Summarized plot twists

- Early death of a spouse
- Involuntary early retirement
- Lower equity and/or fixed income portfolio returns
- Changes to social security payments
- Unemployment or workplace redundancy
- Family emergencies
- Changes to 401(k) contribution rules
- Parental elder-care costs
- Private college tuition payments
- Long-term care event
- Company does not sponsor 401(k) plan
- Divorce
- Late start to saving

Disclosures

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 **S&P MidCap 400 Index** tracks a diverse basket of medium-sized U.S. firms. A mid cap stock is broadly defined as a company with a market capitalization ranging from about $2 billion to $10 billion.

The **S&P SmallCap 600 Index** invests in a basket of small cap equities. A small cap company is generally defined as a stock with a market capitalization between $300 million and $2 billion.

The **Russell 2000 Index®** measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

The **MSCI® EAFE (Europe, Australia, Far East) Net Index** is recognized as the pre-eminent benchmark in the United States to measure international equity performance. It comprises 21 MSCI country indexes, representing the developed markets outside of North America.

The **MSCI Emerging Markets Index℠** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. As of June 2007, the MSCI Emerging Markets Index consisted of the following 25 emerging market country indices: Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand and Turkey.

The **CS/Tremont Equity Market Neutral Index** takes both long and short positions in stocks with the aim of minimizing exposure to the systematic risk of the market (i.e., a beta of zero).

*Market Neutral returns for November 2008 are estimates by J.P. Morgan Funds Market Strategy and are based on a December 8, 2008 published estimate for November returns by CS/Tremont in which the Market Neutral returns were estimated to be +0.85% (with 69% of all CS/Tremont constituents having reported return data). Presumed to be excluded from the November return are three funds, which were later marked to $0 by CS/Tremont in connection with the Bernard Madoff scandal. J.P. Morgan Funds believes this distortion is not an accurate representation of returns in the category. CS/Tremont later published a finalized November return of -40.56% for the month, reflecting this mark-down. CS/Tremont assumes no responsibility for these estimates.

The **NCREIF Property Index** is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only. All properties in the NPI have been acquired, at least in part, on behalf of tax-exempt institutional investors – the great majority being pension funds. As such, all properties are held in a fiduciary environment.

The **FTSE NAREIT EQUITY REIT Index** is designed to provide the most comprehensive assessment of overall industry performance and includes all tax-qualified real estate investment trusts (REITs) that are listed on the NYSE, the American Stock Exchange or the NASDAQ National Market List.

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.

The **HFRI Equity Market Neutral Index** is an equally weighted performance index. The HFRI is broken down into 33 different categories by strategy. The strategy of this index seeks to profit by exploiting inefficiencies between related equity securities, neutralizing exposure to market risk by combining long and short positions. In many cases, portfolios are structured to be market, industry, sector and dollar neutral. One example of this strategy is to build portfolios made up of long positions in the strongest companies in several industries and take corresponding short positions in those showing signs of weakness. Due to the mutual agreements with the hedge fund managers listed in the HFRI database, the index is not at liberty to disclose the particular funds behind this index.

The **Merrill Lynch Global Government Index** tracks the performance of investment-grade sovereign debt publicly issued and denominated in the issuer's own domestic market and currency. In order to qualify for inclusion in the Index, a country (i) must be an OECD member; (ii) must have an investment-grade foreign currency long-term sovereign debt rating (based on an average of Moody's, S&P and Fitch); (iii) must have $50 billion (USD equivalent) outstanding face value of Index qualifying debt (i.e., after imposing constituent level filters on amount outstanding, remaining term to maturity, etc.) to enter the Index; (iv) must have at least $25 billion (USD equivalent) in outstanding face value of Index qualifying debt in order to remain in the Index; (v) must be available to foreign investors; and (vi) must have at least one readily available, transparent price source for its securities.

The **Merrill Lynch U.S. High Yield Index** tracks the performance of US dollar-denominated below-investment-grade corporate debt publicly issued in the U.S. domestic market. Qualifying securities must have a below-investment-grade rating (based on an average of Moody's, S&P and Fitch) and an investment-grade-rated country of risk (based on an average of Moody's, S&P and Fitch foreign currency long-term sovereign debt ratings).

The **Dow Jones Industrial Average** measures the stock performance of 30 leading blue-chip U.S. companies.

The **Bloomberg Commodity Index** is composed of futures contracts on physical commodities and represents twenty two separate commodities traded on U.S. exchanges, with the exception of aluminum, nickel, and zinc.

J.P.Morgan
Asset Management

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.

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.

Small capitalization investing typically carries more risk than investing in well-established "blue-chip" companies since smaller companies generally have a higher risk of failure. Historically, smaller companies' stock has experienced a greater degree of market volatility than the average stock.

Mid capitalization investing typically carries more risk than investing in well-established "blue-chip" companies. Historically, mid cap companies' stock has experienced a greater degree of market volatility than the average stock.

Real estate investments may be subject to a higher degree of market risk because of concentration in a specific industry, sector or geographical sector. Real estate investments may be subject to risks including, but not limited to, declines in the value of real estate, risks related to general and economic conditions, changes in the value of the underlying property owned by the trust and defaults by borrower.

International investing involves a greater degree of risk and increased volatility. Changes in currency exchange rates and differences in accounting and taxation policies outside the U.S. can raise or lower returns. Also, some overseas markets may not be as politically and economically stable as the United States and other nations.

Investments in **emerging markets** can be more volatile. As mentioned above, the normal risks of investing in foreign countries are heightened when investing in emerging markets. In addition, the small size of securities markets and the low trading volume may lead to a lack of liquidity, which leads to increased volatility. Also, emerging markets may not provide adequate legal protection for private or foreign investment or private property.

Investments in **commodities** may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss.

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. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The views and strategies described may not be suitable for all investors. This material has been prepared for informational purposes only and is not intended to provide, and should not be relied on for, accounting, legal or tax advice. References to future returns are not promises or even estimates of actual returns a client portfolio may achieve. Any forecasts contained herein are for illustrative purposes only and are not to be relied upon as advice or interpreted as a recommendation.

The views expressed are those of J.P. Morgan Asset Management. They are subject to change at any time. These views do not necessarily reflect the opinions of any other firm.

J.P. Morgan Asset Management is the marketing name for the asset management businesses of JPMorgan Chase & Co. Those businesses include, but are not limited to, J.P. Morgan Investment Management Inc., Security Capital Research & Management Incorporated and J.P. Morgan Alternative Asset Management, Inc.

JPMorgan Distribution Services Inc., member FINRA/SIPC

JP-GTR

NOT FDIC INSURED | NO BANK GUARANTEE | MAY LOSE VALUE

J.P.Morgan
Asset Management

All 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 S&P 400 Mid Cap Index is representative of 400 stocks in the mid-range sector of the domestic stock market, representing all major industries.

The Russell 3000 Index® measures the performance of the 3,000 largest U.S. companies based on total market capitalization.

The Russell 1000 Index ® measures the performance of the 1,000 largest companies in the Russell 3000.

The Russell 1000 Growth Index ® measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

The Russell 1000 Value Index ® measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

The Russell Midcap Index ® measures the performance of the 800 smallest companies in the Russell 1000 Index.

The Russell Midcap Growth Index ® measures the performance of those Russell Midcap companies with higher price-to-book ratios and higher forecasted growth values. The stocks are also members of the Russell 1000 Growth index.

The Russell Midcap Value Index ® measures the performance of those Russell Midcap companies with lower price-to-book ratios and lower forecasted growth values. The stocks are also members of the Russell 1000 Value index.

The Russell 2000 Index ® measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

The Russell 2000 Growth Index ® measures the performance of those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.

The Russell 2000 Value Index ® measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

The Russell Top 200 Index ® measures the performance of the largest cap segment of the U.S. equity universe. It includes approximately 200 of the largest securities based on a combination of their market cap and current index membership and represents approximately 68% of the U.S. market.

The MSCI® EAFE (Europe, Australia, Far East) Net Index is recognized as the pre-eminent benchmark in the United States to measure international equity performance. It comprises 21 MSCI country indexes, representing the developed markets outside of North America.

The MSCI Emerging Markets Index℠ is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. As of June 2007, the MSCI Emerging Markets Index consisted of the following 25 emerging market country indices: Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey.

The MSCI ACWI (All Country World Index) Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. As of June 2009 the MSCI ACWI consisted of 45 country indices comprising 23 developed and 22 emerging market country indices.

The MSCI Small Cap Indices℠ target 40% of the eligible Small Cap universe within each industry group, within each country. MSCI defines the Small Cap universe as all listed securities that have a market capitalization in the range of USD200-1,500 million.

The MSCI Value and Growth Indices℠ cover the full range of developed, emerging and All Country MSCI Equity indexes. As of the close of May 30, 2003, MSCI implemented an enhanced methodology for the MSCI Global Value and Growth Indices, adopting a two dimensional framework for style segmentation in which value and growth securities are categorized using different attributes - three for value and five for growth including forward-looking variables. The objective of the index design is to divide constituents of an underlying MSCI Standard Country Index into a value index and a growth index, each targeting 50% of the free-float adjusted market capitalization of the underlying country index. Country Value/Growth indices are then aggregated into regional Value/Growth indices. Prior to May 30, 2003, the indices used Price/Book Value (P/BV) ratios to divide the standard MSCI country indices into value and growth indices. All securities were classified as either "value" securities (low P/BV securities) or "growth" securities (high P/BV securities), relative to each MSCI country index.

The following MSCI Total Return Indices℠ are calculated with gross dividends:
This series approximates the maximum possible dividend reinvestment. The amount reinvested is the dividend distributed to individuals resident in the country of the company, but does not include tax credits.

The MSCI Europe Index℠ is a free float-adjusted market capitalization index that is designed to measure developed market equity performance in Europe. As of June 2007, the MSCI Europe Index consisted of the following 16 developed market country indices: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The MSCI Pacific Index℠ is a free float-adjusted market capitalization index that is designed to measure equity market performance in the Pacific region. As of June 2007, the MSCI Pacific Index consisted of the following 5 Developed Market countries: Australia, Hong Kong, Japan, New Zealand, and Singapore.

Credit Suisse/Tremont Hedge Fund Index is compiled by Credit Suisse Tremont Index, LLC. It is an asset-weighted hedge fund index and includes only funds, as opposed to separate accounts. The Index uses the Credit Suisse/Tremont database, which tracks over 4500 funds, and consists only of funds with a minimum of US$50 million under management, a 12-month track record, and audited financial statements. It is calculated and rebalanced on a monthly basis, and shown net of all performance fees and expenses. It is the exclusive property of Credit Suisse Tremont Index, LLC.

The NFI-ODCE, short for NCREIF Fund Index - Open End Diversified Core Equity, is an index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy, some of which have performance histories dating back to the 1970s. The NFI-ODCE Index is capitalization-weighted and is reported gross of fees. Measurement is time-weighted.

The NAREIT EQUITY REIT Index is designed to provide the most comprehensive assessment of overall industry performance, and includes all tax-qualified real estate investment trusts (REITs) that are listed on the NYSE, the American Stock Exchange or the NASDAQ National Market List.

The Dow Jones Industrial Average measures the stock performance of 30 leading blue-chip U.S. companies.

The Bloomberg Commodity Index is composed of futures contracts on physical commodities and represents twenty two separate commodities traded on U.S. exchanges, with the exception of aluminum, nickel, and zinc

J.P.Morgan
Asset Management

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

The S&P GSCI Index is a composite index of commodity sector returns representing an unleveraged, long-only investment in commodity futures that is broadly diversified across the spectrum of commodities. The returns are calculated on a fully collateralized basis with full reinvestment. Individual components qualify for inclusion in the index on the basis of liquidity and are weighted by their respective world production quantities.

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.

This U.S. Treasury Index is a component of the U.S. Government index.

West Texas Intermediate (WTI) is the underlying commodity for the New York Mercantile Exchange's oil futures contracts.

The Barclays Capital High Yield Index covers the universe of fixed rate, non-investment grade debt. Pay-in-kind (PIK) bonds, Eurobonds, and debt issues from countries designated as emerging markets (e.g., Argentina, Brazil, Venezuela, etc.) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes, step-up coupon structures, and 144-As are also included.

The Barclays Capital 1-3 Month U.S. Treasury Bill Index includes all publicly issued zero-coupon U.S. Treasury Bills that have a remaining maturity of less than 3 months and more than 1 month, are rated investment grade, and have $250 million or more of outstanding face value. In addition, the securities must be denominated in U.S. dollars and must be fixed rate and non convertible.

The Barclays Capital General Obligation Bond Index is a component of the Barclays Capital Municipal Bond Index. To be included in the index, bonds must be general obligation bonds rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least $7 million and be issued as part of a transaction of at least $75 million. The bonds must be fixed rate, have a dated-date after December 31, 1990, and must be at least one year from their maturity date. Remarketed issues, taxable municipal bonds, bonds with floating rates, and derivatives, are excluded from the benchmark.

The Barclays Capital Revenue Bond Index is a component of the Barclays Capital Municipal Bond Index. To be included in the index, bonds must be revenue bonds rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least $7 million and be issued as part of a transaction of at least $75 million. The bonds must be fixed rate, have a dated-date after December 31, 1990, and must be at least one year from their maturity date. Remarketed issues, taxable municipal bonds, bonds with floating rates, and derivatives, are excluded from the benchmark.

The Barclays High Yield Municipal Index includes bonds rated Ba1 or lower or non-rated bonds using the middle rating of Moody’s, S&P and Fitch.

The Barclays Capital Taxable Municipal Bond Index is a rules-based, market-value weighted index engineered for the long-term taxable bond market. To be included in the index, bonds must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies if all three rate the bond: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least $7 million and be issued as part of a transaction of at least $75 million. The bonds must be fixed rate and must be at least one year from their maturity date. Remarketed issues (unless converted to fixed rate), bonds with floating rates, and derivatives, are excluded from the benchmark.

Municipal Bond Index: To be included in the index, bonds must be rated investment-grade (Baa3/BBB- or higher) by at least two of the following ratings agencies: Moody's, S&P, Fitch. If only two of the three agencies rate the security, the lower rating is used to determine index eligibility. If only one of the three agencies rates a security, the rating must be investment-grade. They must have an outstanding par value of at least $7 million and be issued as part of a transaction of at least $75 million. The bonds must be fixed rate, have a dated-date after December 31, 1990, and must be at least one year from their maturity date. Remarketed issues, taxable municipal bonds, bonds with floating rates, and derivatives are excluded from the benchmark.

The Barclays Capital Emerging Markets Index includes USD-denominated debt from emerging markets in the following regions: Americas, Europe, Middle East, Africa, and Asia. As with other fixed income benchmarks provided by Barclays Capital, the index is rules-based, which allows for an unbiased view of the marketplace and easy replicability.

The Barclays Capital MBS Index covers the mortgage-backed pass-through securities of Ginnie Mae, Fannie Mae, and Freddie Mac. Aggregate components must have a weighted average maturity of at least one year, must have $250 million par amount outstanding, and must be fixed rate mortgages.

The Barclays Capital Corporate Bond Index is the Corporate component of the U.S. Credit index.

The Barclays Capital TIPS Index consists of Inflation-Protection securities issued by the U.S. Treasury.

The J.P. Morgan EMBI Global Index includes U.S. dollar denominated Brady bonds, Eurobonds, traded loans and local market debt instruments issued by sovereign and quasi-sovereign entities.

The J.P. Morgan Domestic High Yield Index is designed to mirror the investable universe of the U.S. dollar domestic high yield corporate debt market.

The CS/Tremont Equity Market Neutral Index takes both long and short positions in stocks with the aim of minimizing exposure to the systematic risk of the market (i.e., a beta of zero).

The CS/Tremont Multi-Strategy Index consists of funds that allocate capital based on perceived opportunities among several hedge fund strategies. Strategies adopted in a multi-strategy fund may include, but are not limited to, convertible bond arbitrage, equity long/short, statistical arbitrage and merger arbitrage.

The Barclays U.S. Dollar Floating Rate Note (FRN) Index provides a measure of the U.S. dollar denominated floating rate note market.

*Market Neutral returns for November 2008 are estimates by J.P. Morgan Funds Market Strategy, and are based on a December 8, 2008 published estimate for November returns by CS/Tremont in which the Market Neutral returns were estimated to be +0.85% (with 69% of all CS/Tremont constituents having reported return data). Presumed to be excluded from the November return are three funds, which were later marked to $0 by CS/Tremont in connection with the Bernard Madoff scandal. J.P. Morgan Funds believes this distortion is not an accurate representation of returns in the category. CS/Tremont later published a finalized November return of -40.56% for the month, reflecting this mark-down. CS/Tremont assumes no responsibility for these estimates.

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.

Small-capitalization investing typically carries more risk than investing in well-established "blue-chip" companies since smaller companies generally have a higher risk of failure. Historically, smaller companies' stock has experienced a greater degree of market volatility than the average stock.

Mid-capitalization investing typically carries more risk than investing in well-established "blue-chip" companies. Historically, mid-cap companies' stock has experienced a greater degree of market volatility than the average stock.

Real estate investments may be subject to a higher degree of market risk because of concentration in a specific industry, sector or geographical sector. Real estate investments may be subject to risks including, but not limited to, declines in the value of real estate, risks related to general and economic conditions, changes in the value of the underlying property owned by the trust and defaults by borrower.

International investing involves a greater degree of risk and increased volatility. Changes in currency exchange rates and differences in accounting and taxation policies outside the U.S. can raise or lower returns. Also, some overseas markets may not be as politically and economically stable as the United States and other nations.

Investments in **emerging markets** can be more volatile. As mentioned above, the normal risks of investing in foreign countries are heightened when investing in emerging markets. In addition, the small size of securities markets and the low trading volume may lead to a lack of liquidity, which leads to increased volatility. Also, emerging markets may not provide adequate legal protection for private or foreign investment or private property.

Investments in **commodities** may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss.

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.

Derivatives may be riskier than other types of investments because they may be more sensitive to changes in economic or market conditions than other types of investments and could result in losses that significantly exceed the original investment. The use of derivatives may not be successful, resulting in investment losses, and the cost of such strategies may reduce investment returns.

Price to forward earnings is a measure of the price-to-earnings ratio (P/E) using forecasted earnings. **Price to book value** compares a stock's market value to its book value. **Price to cash flow** is a measure of the market's expectations of a firm's future financial health. **Price to dividends** is the ratio of the price of a share on a stock exchange to the dividends per share paid in the previous year, used as a measure of a company's potential as an investment.

There is no guarantee that the use of **long and short positions** will succeed in limiting an investor's exposure to domestic stock market movements, capitalization, sector swings or other risk factors. Using long and short selling strategies may have higher portfolio turnover rates. Short selling involves certain risks, including additional costs associated with covering short positions and a possibility of unlimited loss on certain short sale positions.

The **HFRI Monthly Indices (HFRI)** are equally weighted performance indexes, utilized by numerous hedge fund managers as a benchmark for their own hedge funds. The HFRI are broken down into 4 main strategies, each with multiple substrategies. All single-manager HFRI Index constituents are included in the HFRI Fund Weighted Composite, which accounts for over 2200 funds listed on the internal HFR Database.

Equity Market Neutral Strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. Equity Market Neutral Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.

Distressed Restructuring Strategies employ an investment process focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings.

Merger Arbitrage Strategies which employ an investment process primarily focused on opportunities in equity and equity related instruments of companies which are currently engaged in a corporate transaction.

Global Macro Strategies trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets.

Relative Value Strategies maintain positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities.

The **Cambridge Associates LLC U.S. Private Equity Index®** is an end-to-end calculation based on data compiled from 1,052 U.S. private equity funds (buyout, growth equity, private equity energy and mezzanine funds), including fully liquidated partnerships, formed between 1986 and 2013.

The **Alerian MLP Index** is a composite of the 50 most prominent energy Master Limited Partnerships (MLPs) that provides investors with an unbiased, comprehensive benchmark for the asset class.

J.P. Morgan Asset Management – Risks & disclosures

The Market Insights program provides comprehensive data and commentary on global markets without reference to products. Designed as a tool to help clients understand the markets and support investment decision-making, the program explores the implications of current economic data and changing market conditions.

The views contained herein are not to be taken as an advice or recommendation to buy or sell any investment in any jurisdiction, nor is it a commitment from J.P. Morgan Asset Management or any of its subsidiaries to participate in any of the transactions mentioned herein. Any forecasts, figures, opinions or investment techniques and strategies set out are for information purposes only, based on certain assumptions and current market conditions and are subject to change without prior notice. All information presented herein is considered to be accurate at the time of writing, but no warranty of accuracy is given and no liability in respect of any error or omission is accepted. This material should not be relied upon by you in evaluating the merits of investing in any securities or products. In addition, the Investor should make an independent assessment of the legal, regulatory, tax, credit, and accounting and determine, together with their own professional advisers if any of the investments mentioned herein are suitable to their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. It should be noted that the value of investments and the income from them may fluctuate in accordance with market conditions and taxation agreements and investors may not get back the full amount invested. Both past performance and yield may not be a reliable guide to future performance. Exchange rate variations may cause the value of investments to increase or decrease. Investments in smaller companies may involve a higher degree of risk as they are usually more sensitive to market movements. Investments in emerging markets may be more volatile and therefore the risk to your capital could be greater. Further, the economic and political situations in emerging markets may be more volatile than in established economies and these may adversely influence the value of investments made.

It shall be the recipient's sole responsibility to verify his / her eligibility and to comply with all requirements under applicable legal and regulatory regimes in receiving this communication and in making any investment. All case studies shown are for illustrative purposes only and should not be relied upon as advice or interpreted as a recommendation. Results shown are not meant to be representative of actual investment results.

J.P. Morgan Asset Management is the brand for the asset management business of JPMorgan Chase & Co. and its affiliates worldwide. This communication is issued by the following entities: in Brazil by Banco J.P. Morgan S.A. (Brazil) which is regulated by The Brazilian Securities and Exchange Commission (CVM) and Brazilian Central Bank (Bacen); in the United Kingdom by JPMorgan Asset Management (UK) Limited, which is authorized and regulated by the Financial Conduct Authority (FCA); in other EU jurisdictions by JPMorgan Asset Management (Europe) S.à r.l.; in Switzerland by J.P. Morgan (Suisse) SA, which is regulated by the Swiss Financial Market Supervisory Authority FINMA; in Hong Kong by JF Asset Management Limited, JPMorgan Funds (Asia) Limited or JPMorgan Asset Management Real Assets (Asia) Limited, all of which are regulated by the Securities and Futures Commission; in India by JPMorgan Asset Management India Private Limited which is regulated by the Securities & Exchange Board of India; in Singapore by JPMorgan Asset Management (Singapore) Limited or JPMorgan Asset Management Real Assets (Singapore) Pte. Ltd., both are regulated by the Monetary Authority of Singapore; in Taiwan by JPMorgan Asset Management (Taiwan) Limited which is regulated by the Financial Supervisory Commission; in Japan by JPMorgan Asset Management (Japan) Limited which is a member of the Investment Trusts Association, Japan, the Japan Investment Advisers Association and the Japan Securities Dealers Association, and is regulated by the Financial Services Agency (registration number "Kanto Local Finance Bureau (Financial Instruments Firm) No. 330"); in Korea by JPMorgan Asset Management (Korea) Company Limited which is regulated by the Financial Services Commission (without insurance by Korea Deposit Insurance Corporation) and in Australia to wholesale clients only as defined in section 761A and 761G of the Corporations Act 2001 (Cth) by JPMorgan Asset Management (Australia) Limited (ABN 55143832080) (AFSL 376919) which is regulated by the Australian Securities and Investments Commission; in Canada by JPMorgan Asset Management (Canada) Inc.; and in the United States by J.P. Morgan Investment Management Inc., or J.P. Morgan Distribution Services , Inc., member FINRA SIPC.

EMEA Recipients: You should note that if you contact J.P. Morgan Asset Management by telephone those lines may be recorded and monitored for legal, security and training purposes. You should also take note that information and data from communications with you will be collected, stored and processed by J.P. Morgan Asset Management in accordance with the EMEA Privacy Policy which can be accessed through the following website http://www.jpmorgan.com/pages/privacy.

Past performance is no guarantee of comparable future results.
Diversification does not guarantee investment returns and does not eliminate the risk of loss.

Brazilian recipients:

ANBIMA A presente instituição aderiu ao Código ANBIMA de Regulação e Melhores Práticas para os Fundos de Investimento.

Prepared by: Andrew D. Goldberg, Anastasia V. Amoroso, James C. Liu, Gabriela D. Santos, David M. Lebovitz, Hannah J. Anderson, Abigail B. Dwyer, Ainsley E. Woolridge and David P. Kelly.

Unless otherwise stated, all data are as of June 30, 2015 or most recently available.
Guide to the Markets – U.S.
JP-LITTLEBOOK

J.P.Morgan Asset Management