Inveng Basics in a Changing World

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Agenda

(continued)

- Your financial future
  - Short term savings goals
- Investing basics
- Inflation and your investments
- Investment strategies and mutual funds
  - Stocks vs. bonds
- Retirement strategies and long-term savings goals

Your Financial Future

Your Financial Future: The Good News

UCF employees are going to live longer and should plan accordingly

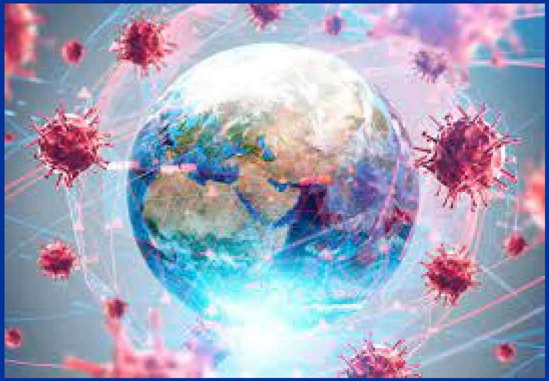
Your Financial Future: The Bad News

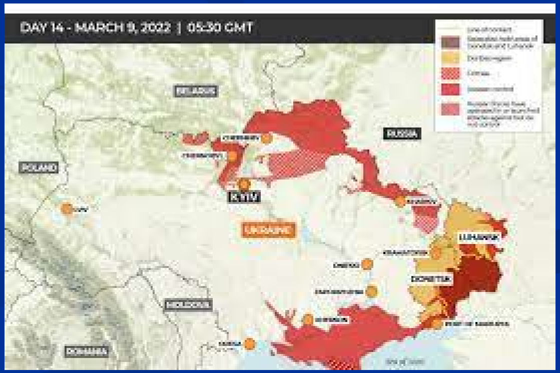
Meaning UCF employees are going to need to work longer and/or save more money

Short Term Savings Goal: 3 Months of Take-Home Pay

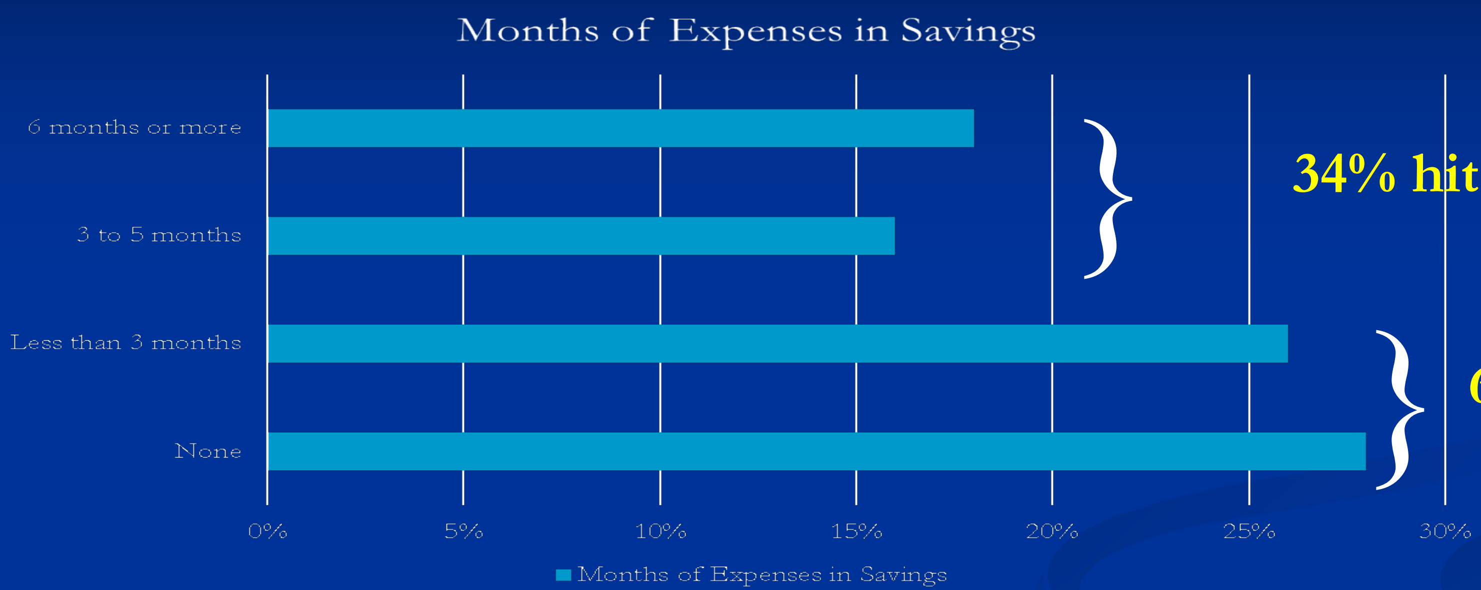
Keep emergency savings in a safe place (e.g. a bank)

Recent Events Impacting Our Financial Future





No Savings + Crisis = Food Bank



34% hit target

64% miss target

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Investing Basics

The Intelligent Investor Knows

- How asset classes perform, the risks, and diversification
- How inflation impacts investment returns
- The right balance of stocks and bonds for your age
- How to make unemotional investment decisions
- How much money is enough to retire
- To avoid
  - Short term/speculative trading
  - Trying to time the market
  - High fee mutual funds and advisors

Asset Class Basics

- **Cash**
- **Stocks or equity securities** (US/foreign)
  - Ownership in firm and underlying profits
  - About **40%** of return from dividends and **60%** from the capital gain
- **Real estate** (REITS)
  - Returns similar to stocks

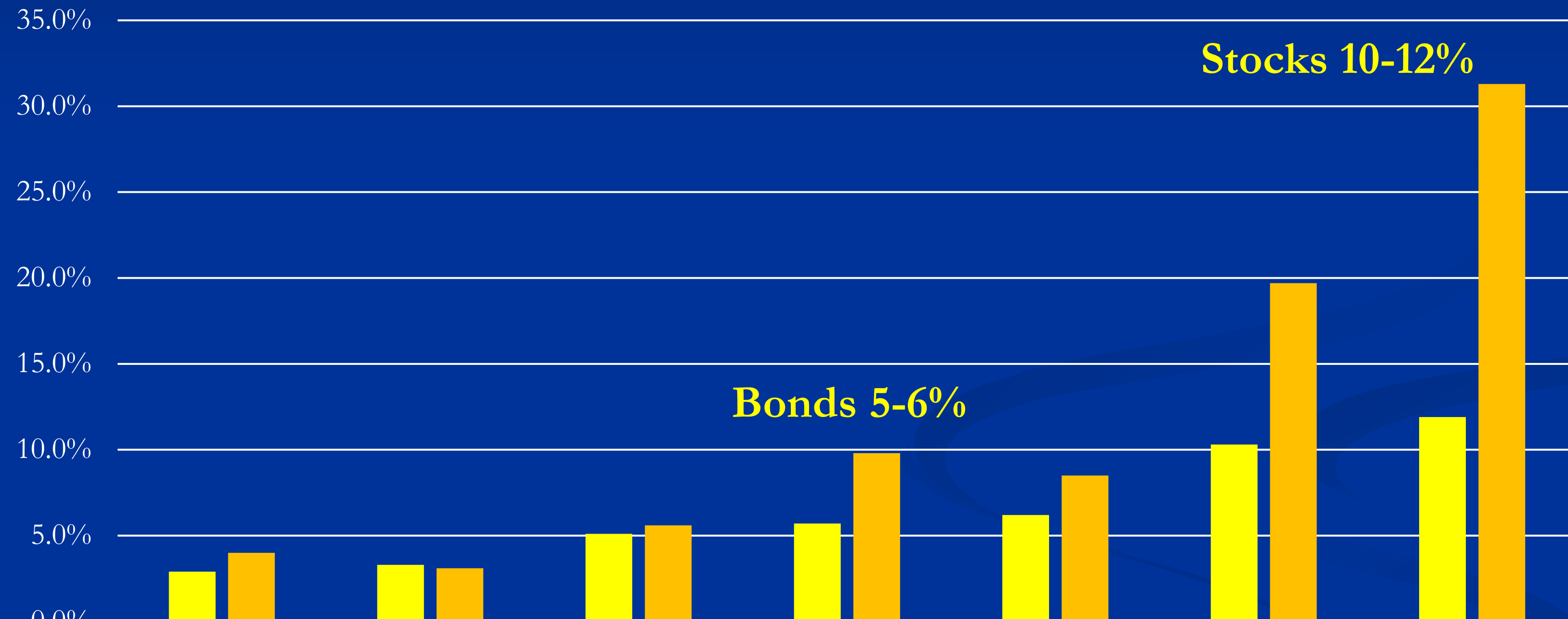
Asset Class Basics

- **Bond or fixed income securities** (US/foreign)
  - Loans to corporations or governments
  - Almost all of return relates to interest income
- **Alternatives** (higher risk)
  - Options
  - Gold/silver
  - Oil
  - Currencies (including digital)
  - Collectibles (paintings, NFTs, etc.)

What Are Asset Class Returns?

Asset Class Returns 1926-2020

Geometric Returns and Standard Deviation



	Inflation	T Bills	Int. Gov. Bond	LT Gov. Bond	LT Corp. Bond	Large Stocks	Small Stocks
Return	2.9%	3.3%	5.1%	5.7%	6.2%	10.3%	11.9%
St. Dev.	4.0%	3.1%	5.6%	9.8%	8.5%	19.7%	31.3%

Return St. Dev.

2021 SBBI Yearbook Exhibit 2.3

We Compare Returns on Benchmark Asset Classes vs. Portfolio Returns

The Callan Periodic Table of Investment Returns

Annual Returns for Key Indices Ranked in Order of Performance (2002–2021)

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Glbl ex-U.S. Fixed 22.37%	Emerging Market Equity 55.82%	Real Estate 37.96%	Emerging Market Equity 34.00%	Real Estate 42.12%	Emerging Market Equity 39.38%	U.S. Fixed Income 5.24%	Emerging Market Equity 78.51%	Small Cap Equity 26.85%	U.S. Fixed Income 7.84%	Real Estate 27.73%	Small Cap Equity 38.82%	Real Estate 15.02%	Large Cap Equity 1.38%	Small Cap Equity 21.31%	Emerging Market Equity 37.28%	Cash Equivalent 1.87%	Large Cap Equity 31.49%	Small Cap Equity 19.96%	Large Cap Equity 28.71%
U.S. Fixed Income 10.26%	Small Cap Equity 47.25%	Emerging Market Equity 25.55%	Real Estate 15.35%	Emerging Market Equity 32.17%	Dev ex-U.S. Equity 12.44%	Glbl ex-U.S. Fixed 4.39%	High Yield 58.21%	Real Estate 19.63%	High Yield 4.98%	Emerging Market Equity 18.23%	Large Cap Equity 32.39%	Large Cap Equity 13.69%	U.S. Fixed Income 0.55%	High Yield 17.13%	Dev ex-U.S. Equity 24.21%	U.S. Fixed Income 0.01%	Small Cap Equity 25.52%	Large Cap Equity 18.40%	Real Estate 26.09%
Real Estate 2.82%	Real Estate 40.69%	Dev ex-U.S. Equity 20.38%	Dev ex-U.S. Equity 14.47%	Dev ex-U.S. Equity 25.71%	Glbl ex-U.S. Fixed 11.03%	Cash Equivalent 2.06%	Real Estate 37.13%	Emerging Market Equity 18.88%	Glbl ex-U.S. Fixed 4.36%	Dev ex-U.S. Equity 16.41%	Dev ex-U.S. Equity 21.02%	U.S. Fixed Income 5.97%	Cash Equivalent 0.05%	Large Cap Equity 11.96%	Large Cap Equity 21.83%	High Yield -2.08%	Dev ex-U.S. Equity 22.49%	Emerging Market Equity 18.31%	Small Cap Equity 14.82%
Cash Equivalent 1.78%	Dev ex-U.S. Equity 39.42%	Small Cap Equity 18.33%	Large Cap Equity 4.91%	Small Cap Equity 18.37%	U.S. Fixed Income 6.97%	High Yield -26.16%	Dev ex-U.S. Equity 33.67%	High Yield 15.12%	Large Cap Equity 2.11%	Small Cap Equity 16.35%	High Yield 7.44%	Small Cap Equity 4.89%	Real Estate -0.79%	Emerging Market Equity 11.19%	Small Cap Equity 14.65%	Glbl ex-U.S. Fixed -2.15%	Real Estate 21.91%	Glbl ex-U.S. Fixed 10.11%	Dev ex-U.S. Equity 12.62%
High Yield -1.37%	High Yield 28.97%	Glbl ex-U.S. Fixed 12.54%	Small Cap Equity 4.55%	Large Cap Equity 15.79%	Large Cap Equity 5.49%	Small Cap Equity -33.79%	Small Cap Equity 27.17%	Large Cap Equity 15.06%	Cash Equivalent 0.10%	Large Cap Equity 16.00%	Real Estate 3.67%	High Yield 2.45%	Dev ex-U.S. Equity -3.04%	Real Estate 4.06%	Glbl ex-U.S. Fixed 10.51%	Large Cap Equity -4.38%	Emerging Market Equity 18.44%	Dev ex-U.S. Equity 7.59%	High Yield 5.28%
Emerging Market Equity -6.16%	Large Cap Equity 28.68%	High Yield 11.13%	Cash Equivalent 3.07%	High Yield 11.85%	Cash Equivalent 5.00%	Large Cap Equity -37.00%	Large Cap Equity 26.47%	Dev ex-U.S. Equity 8.95%	Small Cap Equity -4.18%	High Yield 15.81%	Cash Equivalent 0.07%	Cash Equivalent 0.03%	Small Cap Equity -4.41%	Dev ex-U.S. Equity 2.75%	Real Estate 10.36%	Real Estate -5.63%	High Yield 14.32%	U.S. Fixed Income 7.51%	Cash Equivalent 0.05%
Dev ex-U.S. Equity -15.80%	Glbl ex-U.S. Fixed 19.36%	Large Cap Equity 10.88%	High Yield 2.74%	Glbl ex-U.S. Fixed 8.16%	High Yield 1.87%	Dev ex-U.S. Equity -43.56%	Glbl ex-U.S. Fixed 7.53%	U.S. Fixed Income 6.54%	Real Estate -6.46%	U.S. Fixed Income 4.21%	U.S. Fixed Income -2.02%	Emerging Market Equity -2.19%	High Yield -4.47%	U.S. Fixed Income 2.65%	High Yield 7.50%	Small Cap Equity -11.01%	U.S. Fixed Income 8.72%	High Yield 7.11%	U.S. Fixed Income -1.54%
Small Cap Equity -20.48%	U.S. Fixed Income 4.10%	U.S. Fixed Income 4.34%	U.S. Fixed Income 2.43%	Cash Equivalent 4.85%	Small Cap Equity -1.57%	Real Estate -48.21%	U.S. Fixed Income 5.93%	Glbl ex-U.S. Fixed 4.95%	Dev ex-U.S. Equity -12.21%	Glbl ex-U.S. Fixed 4.09%	Emerging Market Equity -2.60%	Glbl ex-U.S. Fixed -3.09%	Glbl ex-U.S. Fixed -6.02%	Glbl ex-U.S. Fixed 1.49%	U.S. Fixed Income 3.54%	Dev ex-U.S. Equity -14.09%	Glbl ex-U.S. Fixed 5.09%	Cash Equivalent 0.67%	Emerging Market Equity -2.54%
Large Cap Equity -22.10%	Cash Equivalent 1.15%	Cash Equivalent 1.33%	Glbl ex-U.S. Fixed -8.65%	U.S. Fixed Income 4.33%	Real Estate -7.39%	Emerging Market Equity -53.33%	Cash Equivalent 0.21%	Cash Equivalent 0.13%	Emerging Market Equity -18.42%	Cash Equivalent 0.11%	Glbl ex-U.S. Fixed -3.08%	Dev ex-U.S. Equity -4.32%	Emerging Market Equity -14.92%	Cash Equivalent 0.33%	Cash Equivalent 0.86%	Emerging Market Equity -14.57%	Cash Equivalent 2.28%	Real Estate -9.04%	Glbl ex-U.S. Fixed -7.05%

The Callan Periodic Table of Investment Returns conveys the strong ***case for diversification*** across asset classes (stocks vs. bonds), capitalizations (large vs. small), and equity markets (U.S. vs. global ex-U.S.). The Table highlights the uncertainty inherent in all capital markets. Rankings change every year. Also noteworthy is the difference between absolute and relative performance, as returns for the top-performing asset class span a wide range over the past 20 years.

A printable copy of The Callan Periodic Table of Investment Returns is available on our website at ***callan.com/periodic-table/****.*

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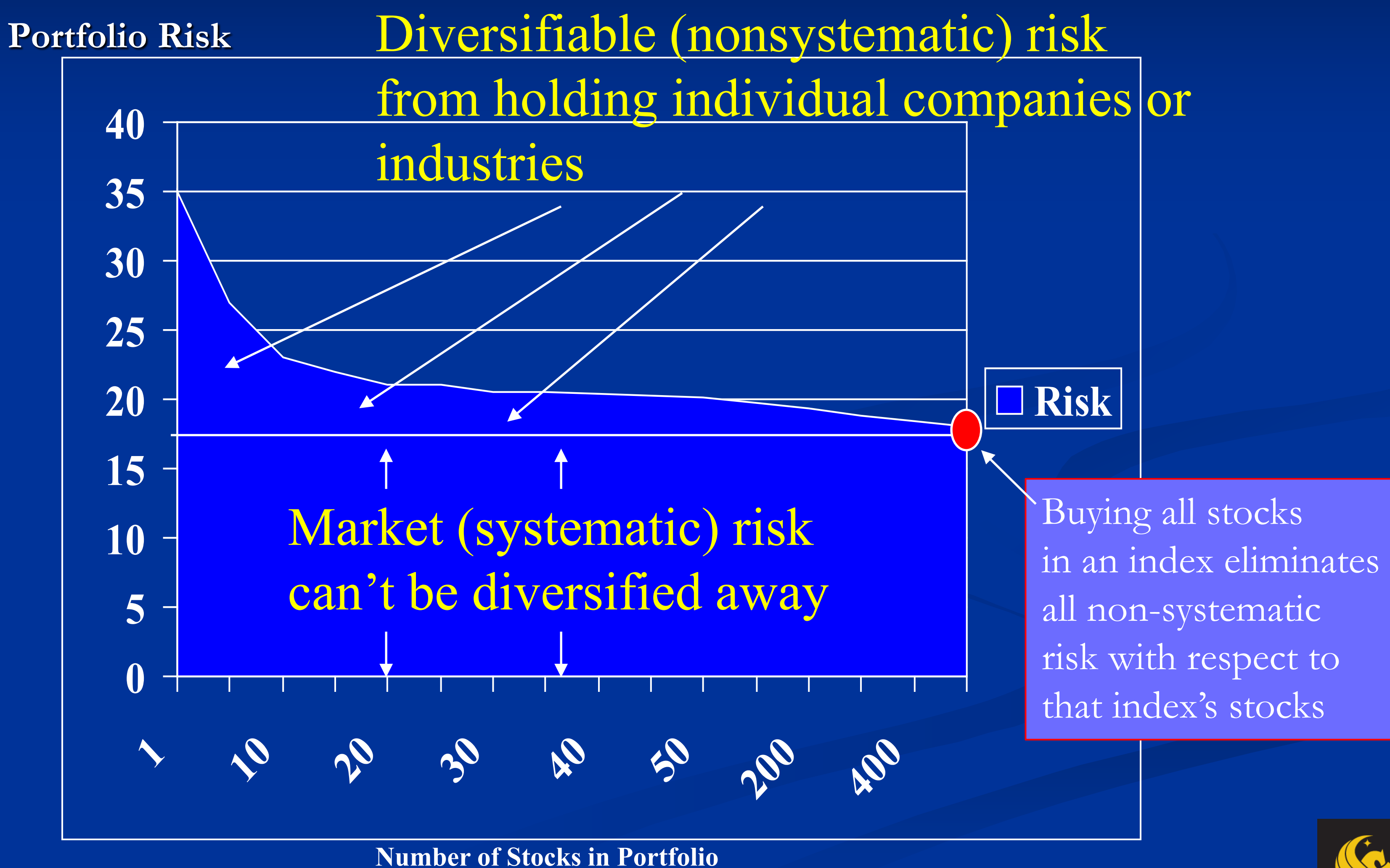
Investment Risks

- Types of broad risk
  - Systematic(market) risk
    - Economy
    - Geopolitical events, etc.
  - Non-systematic risk
  - Investment style risk
- Company/industry risk
  - Bankruptcy

Diversification reduces risk!!!!!!

Stocks in a Portfolio and Risk

The relevant risk of an individual stock is its contribution to the risk of a well diversified portfolio



Equity Risk Premium

- **Equity risk premium** or **excess market return** is the additional return investors receive by investing in higher risk stocks vs. risk free investments such as Treasury Bonds. For example, in the previous chart:

Return on large company stocks =	10.3%
Return on LT Govt. Bonds =	<u>5.7%</u>
Equity risk premium =	<u>4.6%</u>

Using average returns instead of geometric, the premium runs around 6%

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Aren’t Stocks Risky?

- **Yes**, if you are investing in individual stocks, trading stocks or following speculative trends
- **No**, if you are well diversified and a long-term investor

Diversification reduces risk!!!!!!

Why Buy Stocks or Equity Securities?

- Over the long run, **stocks or equity securities** provide the highest return and hedge against inflation (but riskier than bonds)

The Federal Reserve

- The Federal Reserve sets **monetary policy**, its objectives include a dual mandate, which can be in conflict
  - The Board of Governors of the Federal Reserve System and the Federal Open Market Committee shall maintain **“maximum employment, stable prices and moderate long-term interest rates."**

Federal Reserve Act of 1977

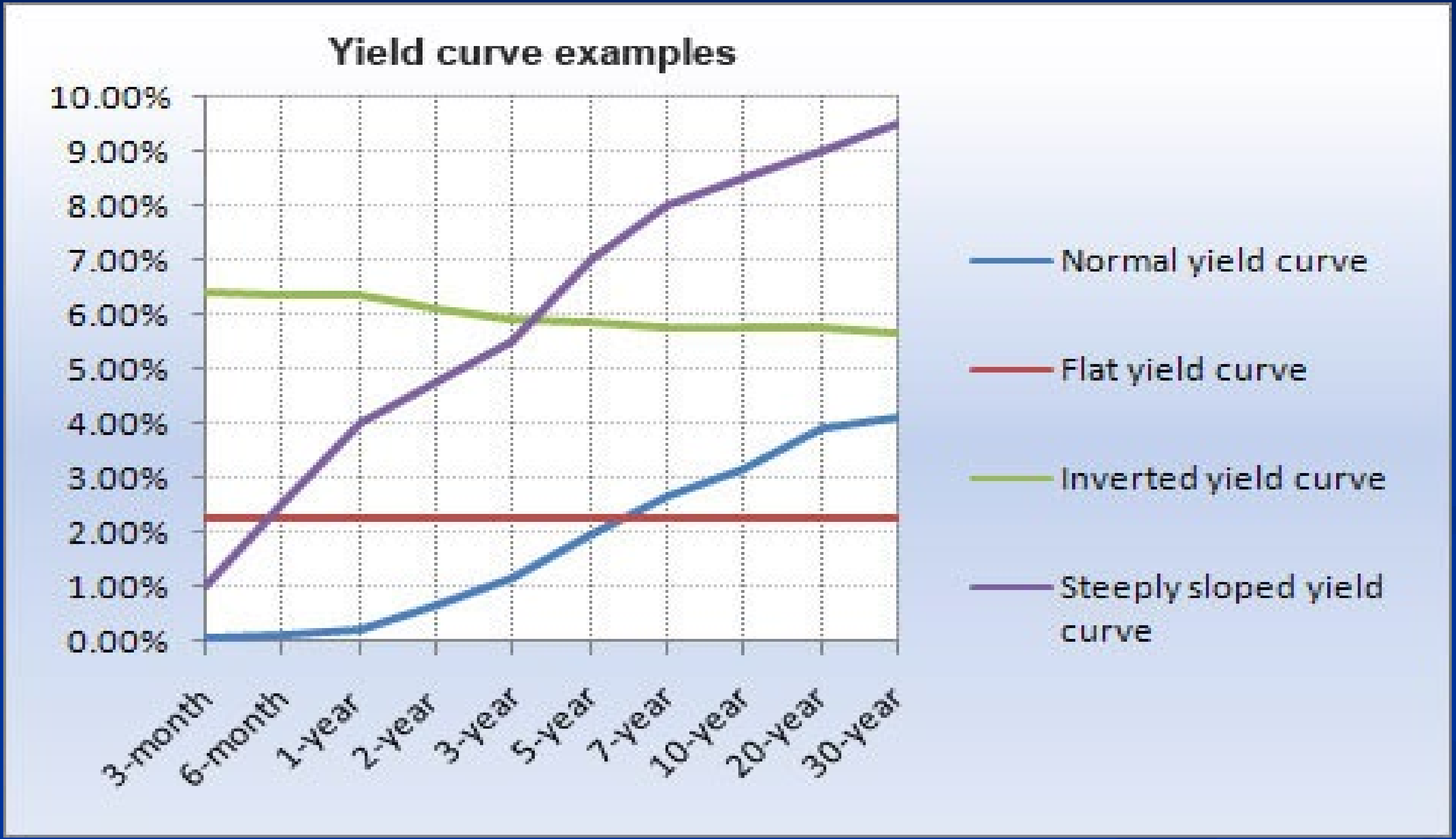
The Federal Reserve

- The Federal Reserve sets **short term interest rates** using the federal funds target rate
- **Long term rates** are generally market driven, but can be influenced by quantitative easing or tightening
- The interest rate paid by the US government is reflected in the **treasury yield curve**

The Federal Reserve

- **The Federal Reserve will decrease rates to stimulate the economy during a recession (e.g. global financial crisis)**
  - **Mortgage rates drop, houses are more affordable and demand increases**
- **The FED will increase rates to cool the economy when prices are increasing too fast (inflation)**
  - **Mortgage rates increase cooling demand for homes**

The Treasury Yield Curve

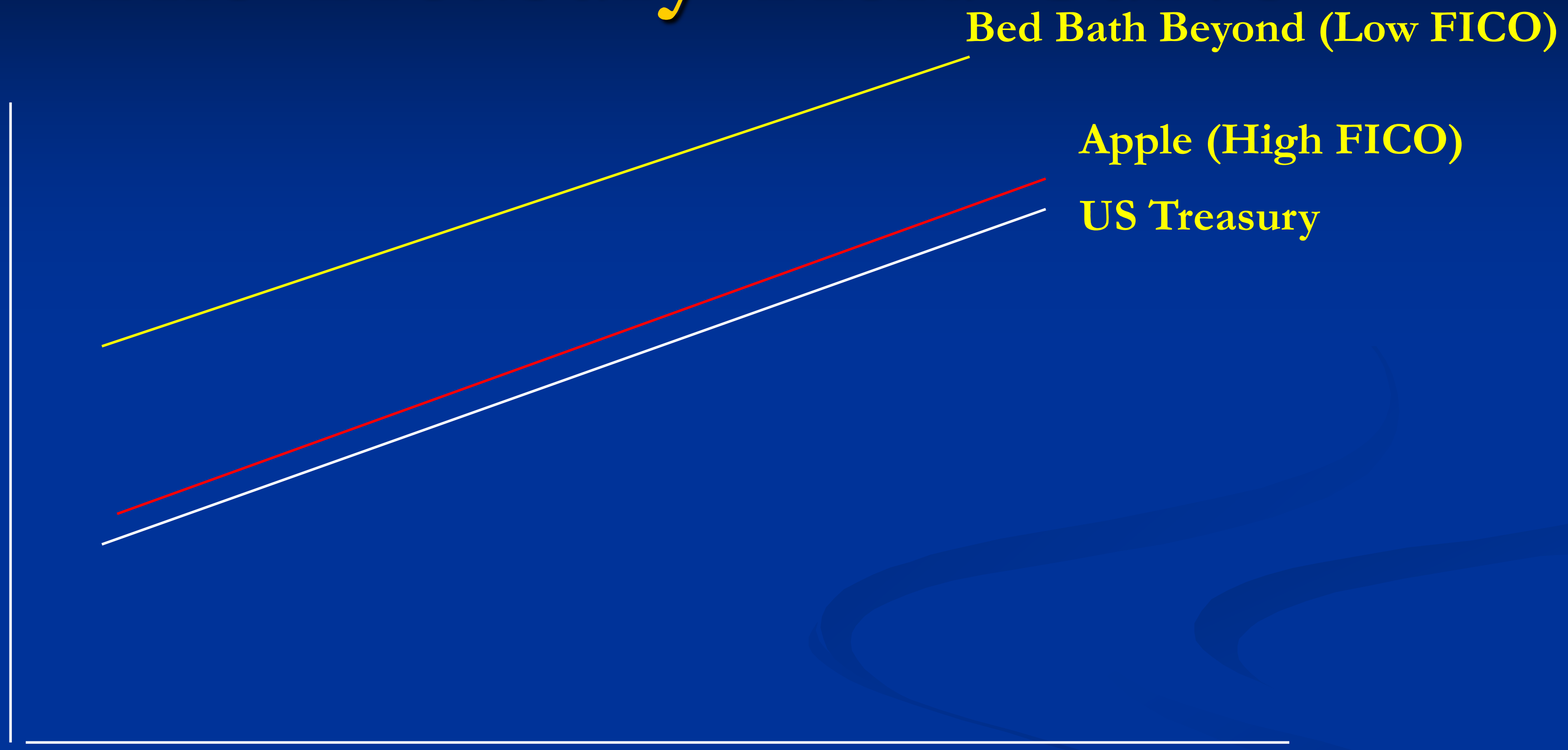


Flat curve signals potential recession

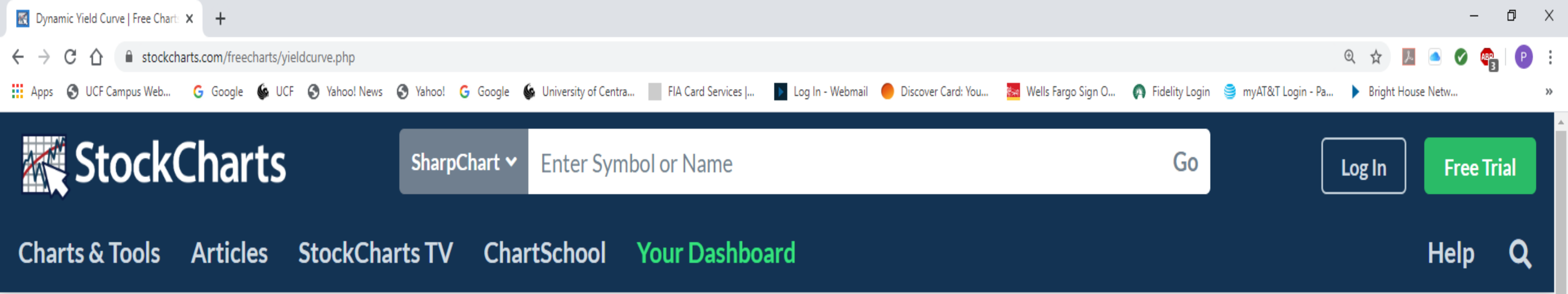
Inverted curve signals overheated economy/tight money policy to cool inflation and normally leads to a recession

Steep slope curve to stimulate economy during recession, with market expecting much higher rates later

The Treasury Yield Curve

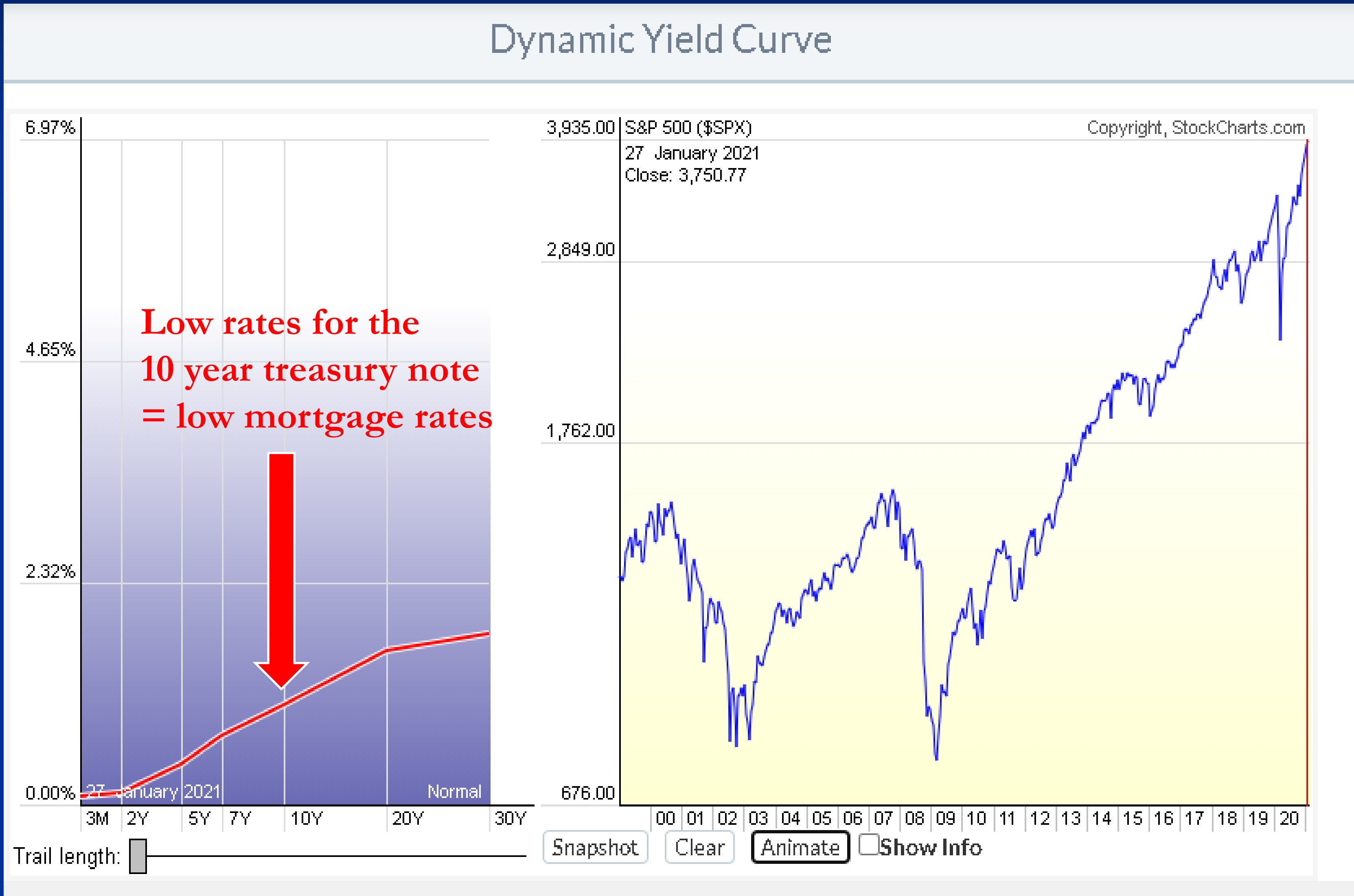


Corporations and individuals borrow at rates above the yield curve



Yield Curve Before Global Financial Crisis

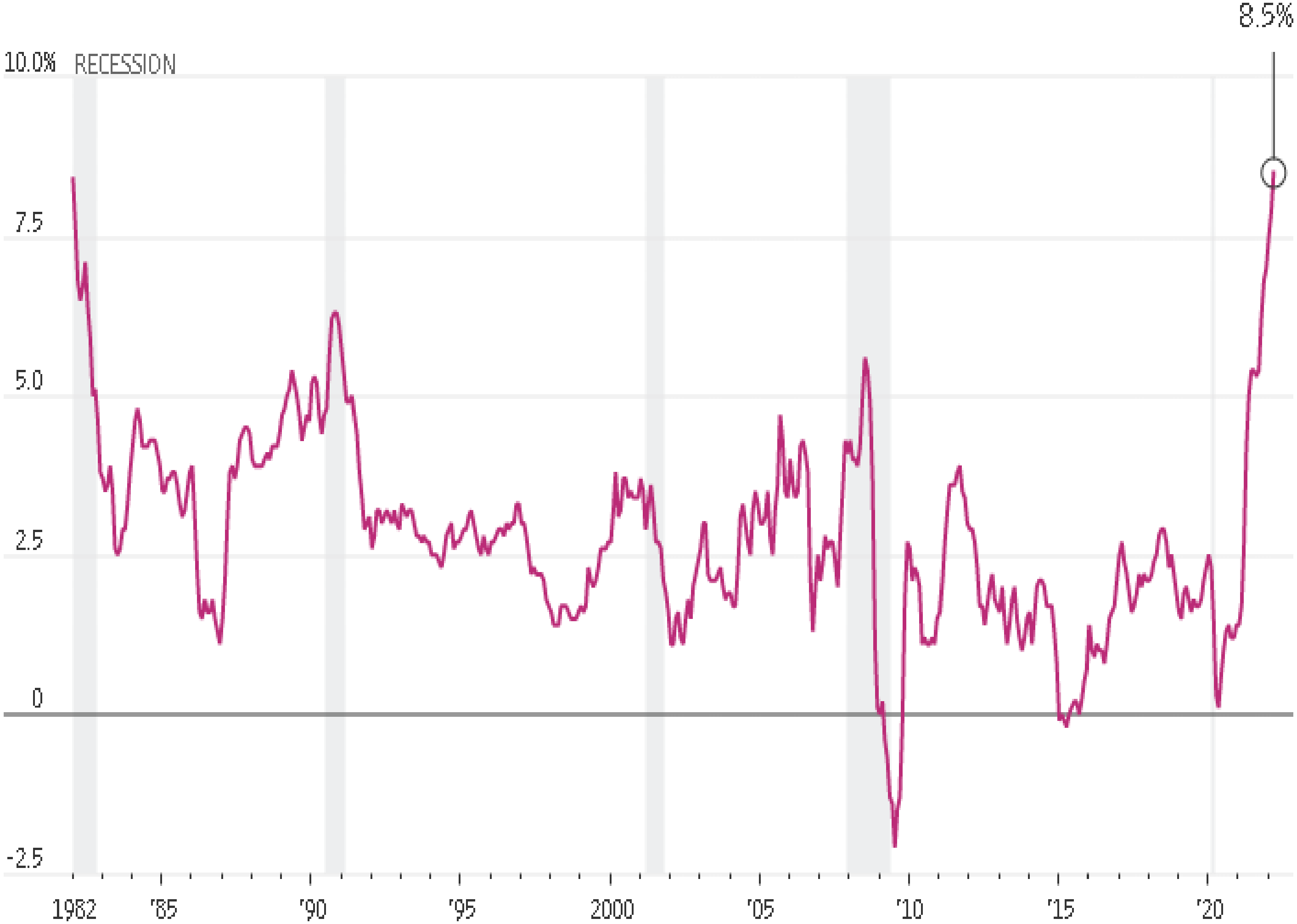
Yield Curve Jan. 2021



Inflation and Your Investments

Inflation Accelerated to 8.5% in March as Oil Prices Soared

Consumer-price index, change from a year earlier



An unrelenting rise in U.S. inflation hit another new four-decade peak in March from the same month a year ago, driven by skyrocketing energy and food costs, supply constraints and strong consumer demand.

- Stocks Climb After Inflation Data
- U.S. to Allow High-Ethanol Gasoline in Bid to Tame Prices
- How to Adjust Your Brain for 8.5% Inflation
- The Safe Investment That Will Soon Yield Almost 10%
- Fed's Brainard to Take Questions on Inflation, Job Market, Interest Rates
- What to Know About Inflation

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ECONOMY

Everything Costs More, and That's Disrupting Retirement for Many

Rising inflation and wages prompt older workers to put off, exit retirement

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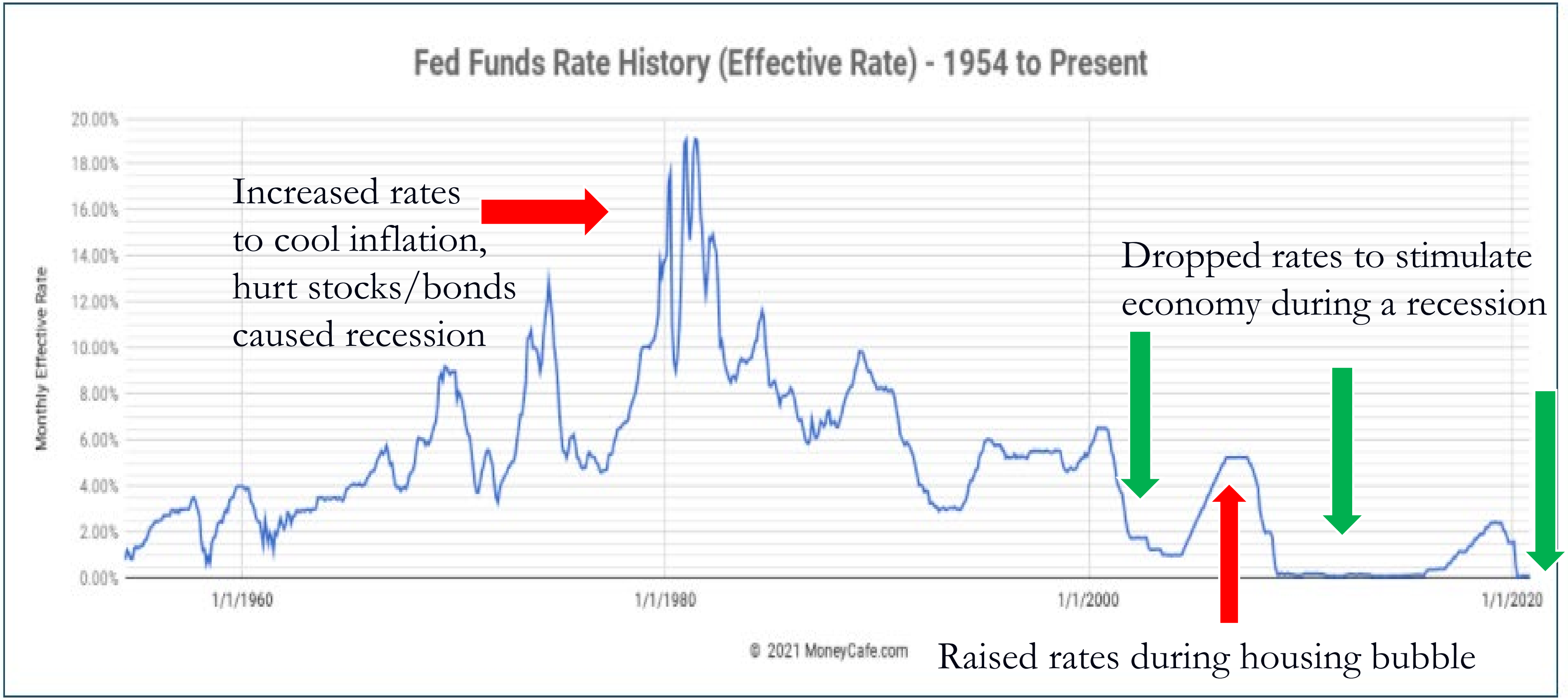
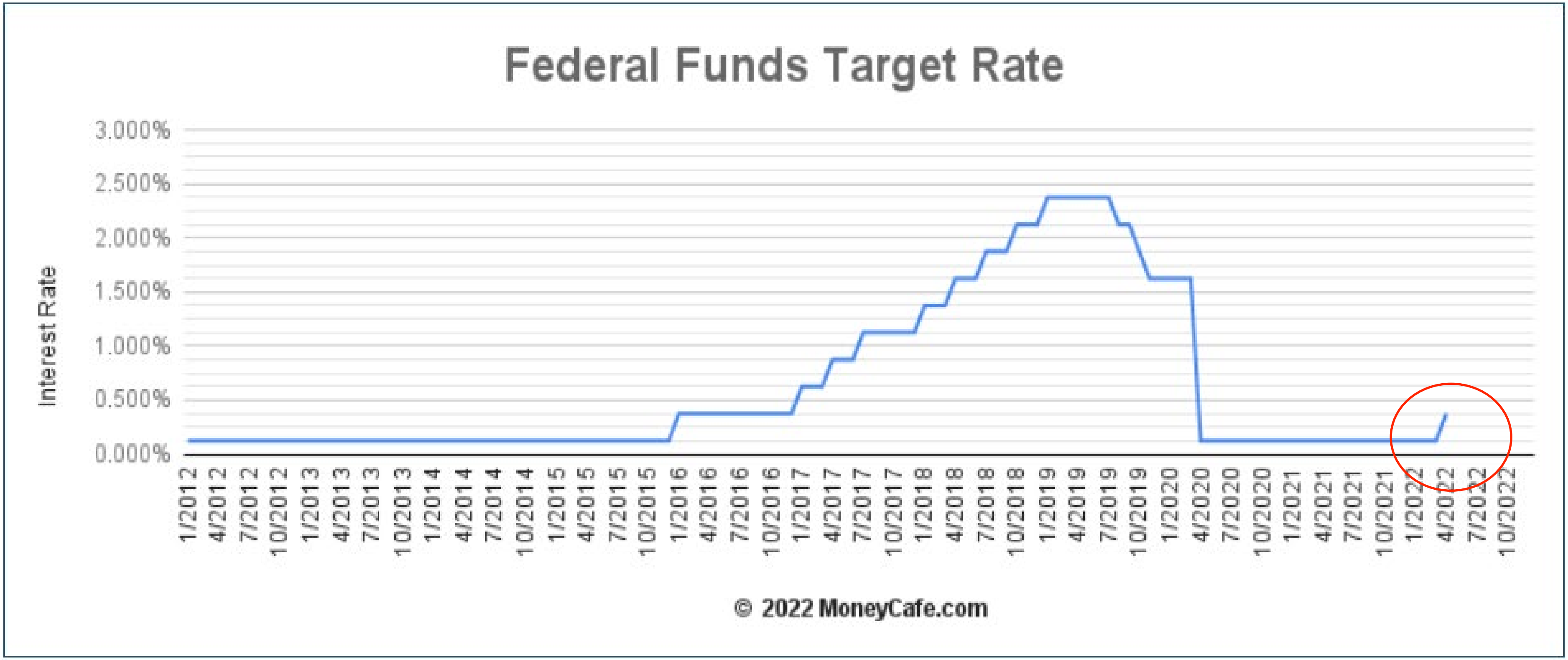
Where Were Interest Rates?

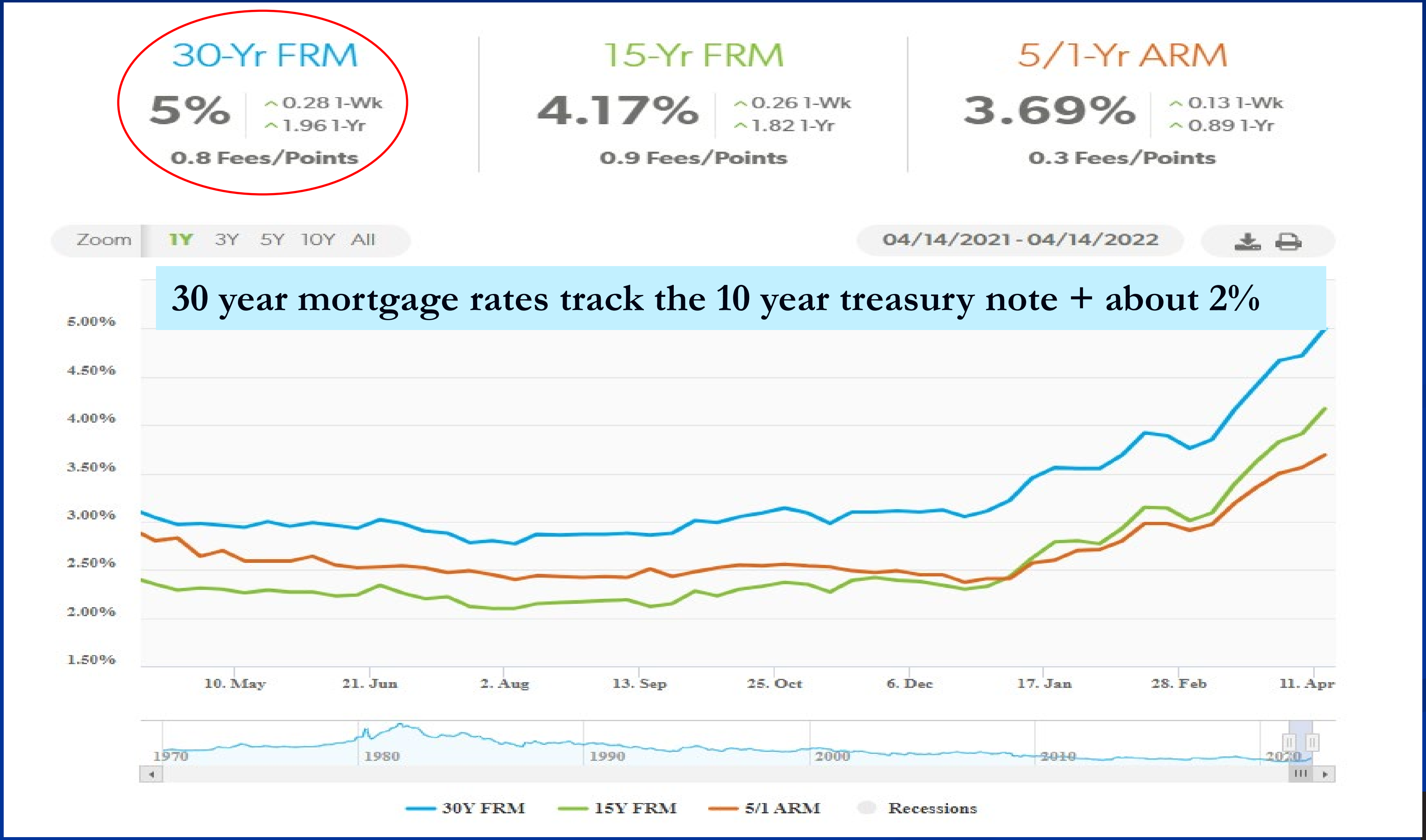


Interest Rates Are Moving Up



Yield Curve April 2022

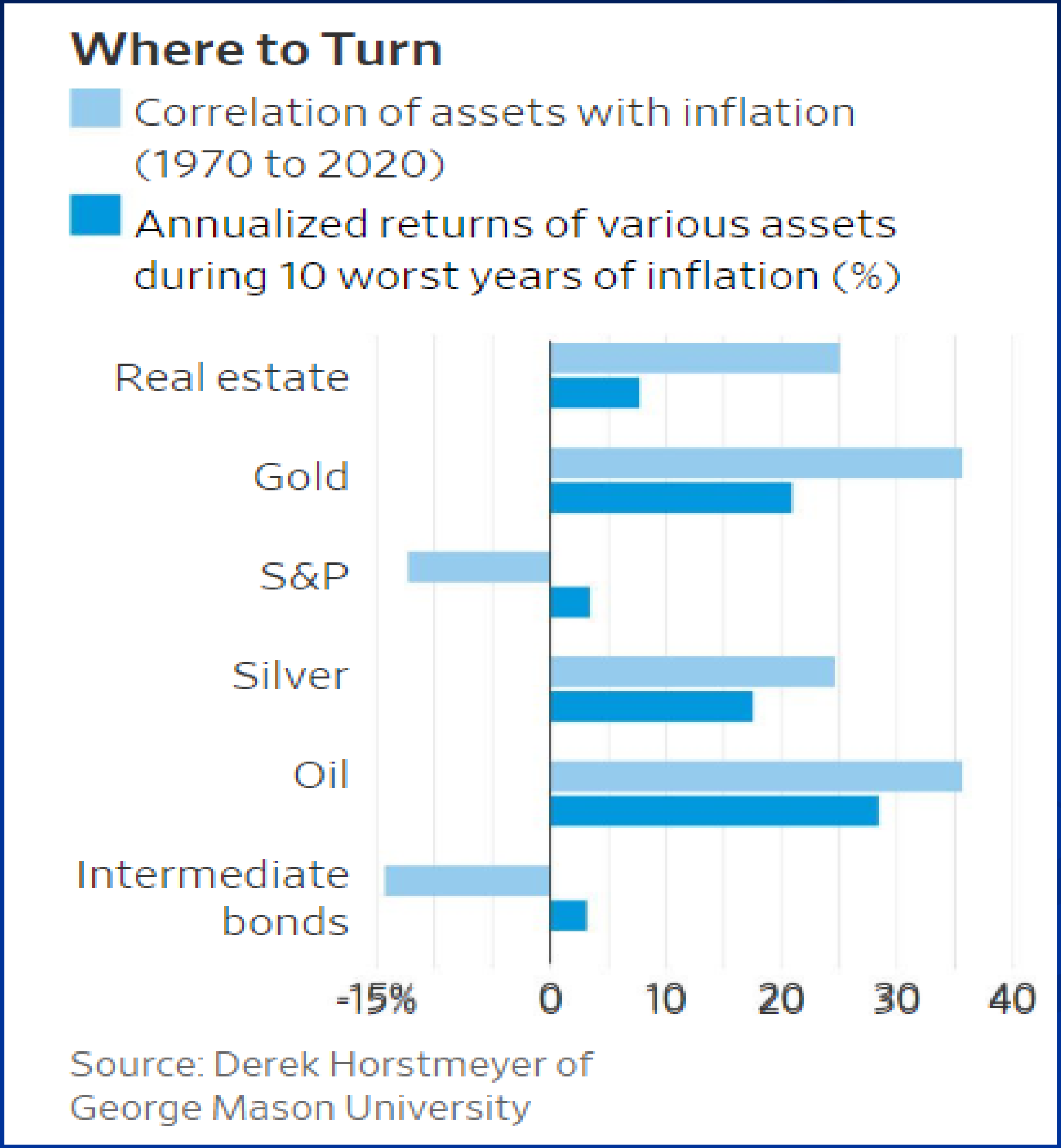
Higher Yield Curve = Higher Mortgage Rates



How Inflation & Higher Interest Rates Impact Stocks

- The higher the interest rate on bonds, then more money will move from stocks to safer bonds
- Corporate profits are squeezed, stock values go down
  - Cost of debt goes up
  - Cost of goods, services, payroll costs go up
  - Price increases often don't cover all cost increases
  - Consumer demand goes down due to budget constraints, especially for consumer discretionary items

Where to Invest With High Inflation



How Inflation & Higher Interest Rates Impact Bonds

- There is an inverse relationship between interest rates (yield) and the price of a bond
- If interest rates go **DOWN**, then the value of a bond will go **UP**
  - The FED drops rates in a recession to stimulate the economy
- If interest rates go **UP**, then the value of a bond will go **DOWN**
  - The FED raises rates when the economy heats up and or inflation becomes an issue
- As yields go **up**, prices go **down** (& vice versa)

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Fixed Income Strategies to Lower Risk of Rising Interest Rates

- Shorten duration
  - Longer term bonds are more sensitive to changes in interest rates
- Foreign bonds
- Treasury Inflation Protected Securities known as TIPS
- I Bonds

Investment Strategies and Mutual Funds

Your Retirement Plan Mutual Funds

- Pooling money/professional managers
- Each fund has a specific objective
- Provides diversification
  - Participants make all investment decisions and are **NOT** allowed to buy individual stocks
  - Self directed rollover IRAs allow the purchase of individual stocks, but it's best to invest in mutual funds and index ETFs

- When you change jobs

UCF 403(b) Record Keeping Fees

Provider	Fee
Fidelity	23 bps
TIAA	12.5 bps
AIG	34.5 bps

After retirement, avoid these fees by rolling your balances over to a self directed rollover IRA at a discount broker

BPS stands for basis points
One basis point = 1/100th of a percent
100 basis points = 1%

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Employer Fiduciary Responsibilities: The New "F" Word

- Recent trend to hold employers accountable for poor investment offerings in retirment plans, specifically
  - High cost load funds
  - High plan fees
  - Funds with poor performance
  - Lack of a sufficient number of low cost (no load) or index fund offerings

This new rule DOL is currently being litigated

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If All Advisors Acted As Fiduciaries: How Much More Could We Save?

- Answer: About $17 billion/year or 1% of assets being saved

- Wall Street DNA: Sell products that generate commissions with the promise of greater returns (which normally lowers investor returns)

Source: White Council of Economic Advisors 2015

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How Fees Impact Your Savings

- A UCF employee saves $350/month in the 403(b) plan
  - Employee A invests in low cost index funds earning 9% for 40 years and avoids a financial advisor
    - Will have **$1,638,462** in 403(b)
  - Employee B does the same, but pays an advisor 25 basis points (one quarter of one percent)
    - **$1,521,484** in 403(b)

That's a $116,978 difference

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Compare Your Returns Against the Benchmarks

PERSONAL RETURNS

AS OF 03/31/2022

Annualized Return | Cumulative Return

	1-Month	3-Month	YTD	1-Year	3-Year	5-Year	10-Year
Money-Weighted Rate of Return	Compare your returns against the benchmarks here						
Market Indexes‡							
S&P 500® Index	+3.71%	-4.60%	-4.60%	+15.65%	+18.92%	+15.99%	+14.64%
Dow Jones U.S. Total Stock Market Index	+3.24%	-5.40%	-5.40%	+11.67%	+18.12%	+15.31%	+14.21%
Nasdaq Composite Total Return Index	+3.48%	-8.95%	-8.95%	+8.06%	+23.57%	+20.31%	+17.77%
MSCI ACWI ex USA (Net MA Tax)	+0.20%	-5.40%	-5.40%	-1.33%	+7.68%	+6.94%	+5.71%
MSCI EAFE (Net MA Tax) Index	+0.70%	-5.86%	-5.86%	+1.37%	+8.01%	+6.94%	+6.46%

Fiduciaries and UCF

- **CAPTRUST** acts as a fiduciary and advises both UCF and employees on providers selected by UCF such as TIAA, Fidelity and AIG
  - Providers have a huge conflict of interest

UCF HR has consolidated and simplified offerings in our 403(b) plan

Making the Case for Index Funds

- Low costs = huge head start (1%)
- More tax efficient/low trading
- Beat about 90% of managed funds historical five year averages
  - 42% of funds did not survive after 10 years
- Available with open end index mutual funds or closed end exchange traded funds (ETFs) to index

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Seven Essential Facts on Indexing

- Wall Street doesn't want you to index
- Generally guaranteed to win
- Owning only the S&P 500 index isn't enough diversification
- Wins even in inefficient markets
- Shines on an after tax basis
- Bond index funds provide similar results
- Once you decide on your index funds, cost or fees are key considerations

Source: Wall Street Journal

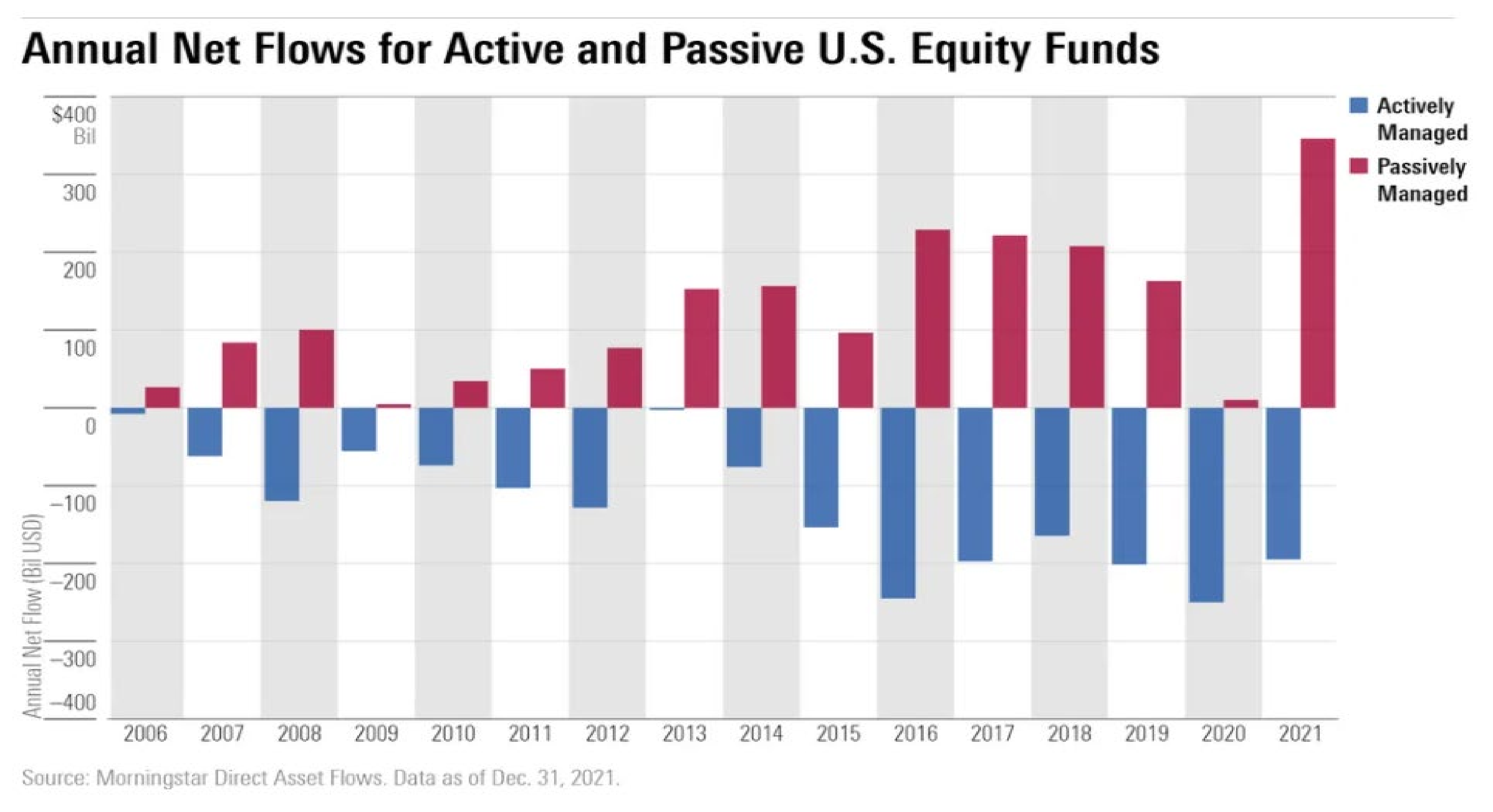
The Pros Can't Beat the Indexes

Percentage of Actively Managed US Equity Funds Exceeding Benchmark Index @ Dec. 31, 2016

Category	5 Year	10 Year	15 Year
Large Cap S&P 500	12%	15%	8%
Mid Cap S&P Midcap 400	10%	4%	5%
Small Cap S&P Small Cap 600	3%	4%	7%

So More Money is Going to Index Type Investments

Estimated Net Flows ($ billion)



Warren Buffet Says

- Avoid personal debt
- Stay disciplined
- Buy index funds
- Stock buyers: do your homework
- Limit downside risk

Warren Buffet Says

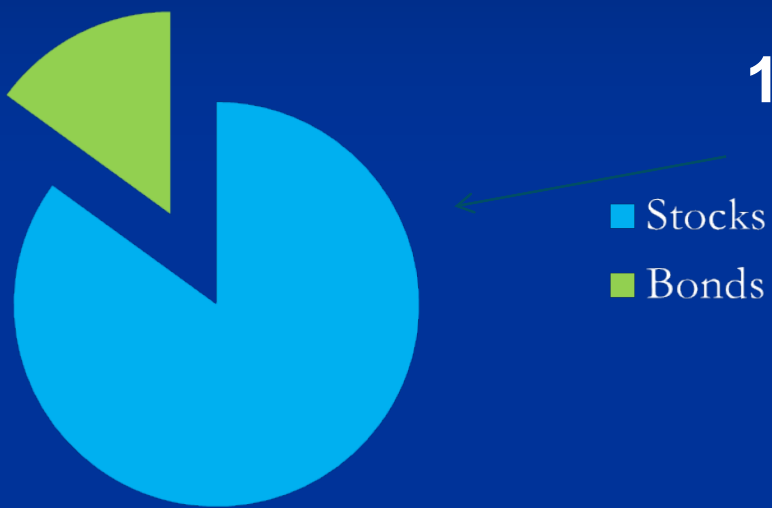
- Biggest mistake: Not learning the habit of saving early in life, and trying to get rich quick
- Be fearful when others are greedy and be greedy when others are fearful

Please don't sell your stocks when the market falls!!

How Do I Allocate My Investments Between Stocks and Bonds?

Stocks vs. Bonds? One Method
110 – Age = Stock Allocation

Portfolio 25 Year Old



110 – 25 ~ 85% stocks
and real estate,
more risk

Portfolio 60 Year Old

110 – 60 ~ 50% stocks
more bonds, less risk

The average 2060+ Target Retirement date mutual fund has 90% allocated to stocks.

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Target Retirement Date Funds

- **Mutual Funds Invested for Your Retirement Date**
  - 2025
  - 2035
  - 2065
  - As you age, the funds will rebalance your mix of stocks and bonds

A new popular offering from 401-K plans

Actual Allocations vs. Rule of Thumb

Vanguard Fund	Age Today	Rule of Thumb Stocks/Bonds	Actual Stocks/Bonds
Target 2020	60	50/50	54/46
Target 2040	40	70/30	84/16
Target 2060	20	90/10	90/10

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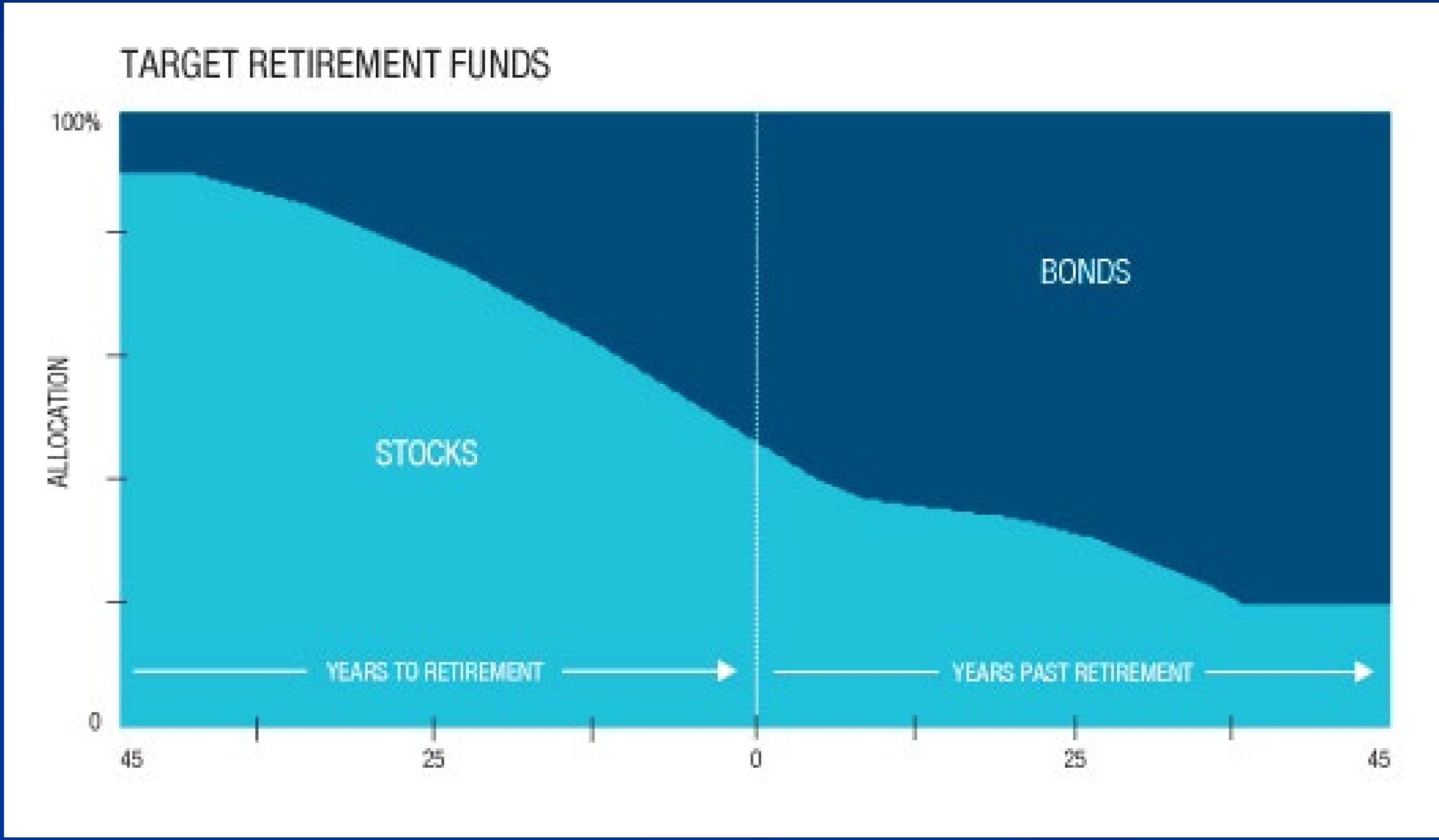
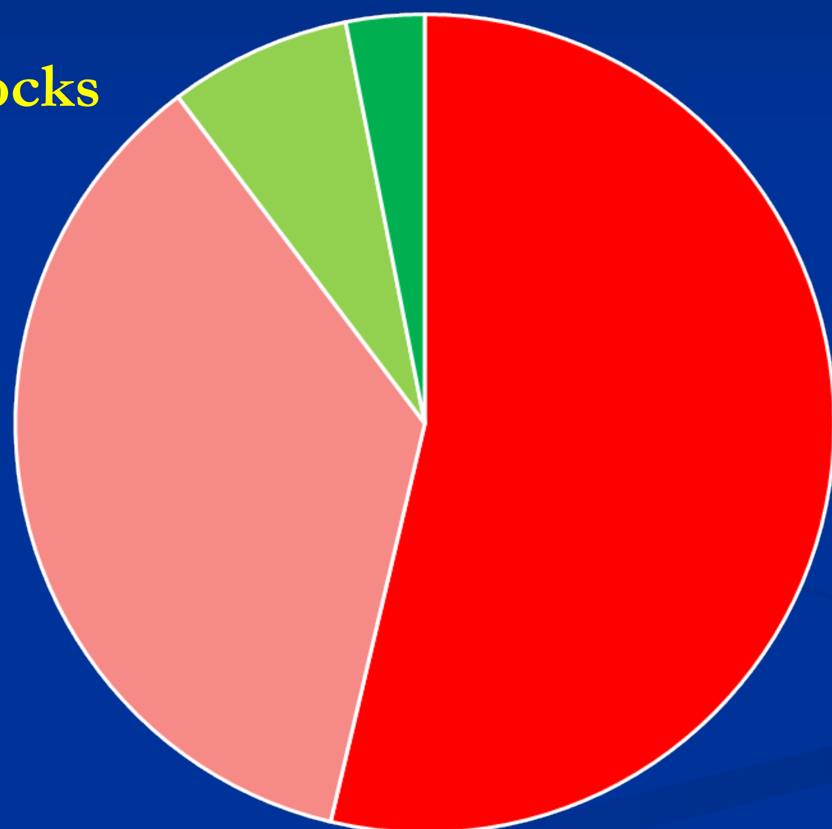
Consider Targeted Retirement Date Mutual Funds



Vanguard Target Retirement 2065

Ticker VLXVX

Assume age 20
110-20 = 90% stocks



90% Stocks

54% U.S.

36% Int.

10% Bonds

7% U.S.

3% Int.

How Do I Allocate My Investments By Account Type?

First Understand How Investments Are Taxed

Investment	Marginal Rate	Lower Rate	No Tax
Interest on US Debt/Corp. Bonds	✔		
Interest on Muni Bonds			✔
Dividends REITs, Others	✔		
Dividends US Stocks		✔	
Long Term Capital Gains Stocks or Bonds		✔	

Keep higher taxed investments in tax deferred or tax free accounts

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Mutual Funds In Taxable Accounts

Distribution Type	Taxed at Lower Rates	Taxed at Marginal Rate	Allocate to Tax Deferred or Tax Free
Stock Funds			
Qualified dividends	✓		
Non-qualified dividends, REITs		✓	→
Bond Funds			
Corporate bond fund dividends		✓	→
Muni bond fund dividends (not CG)	NO TAX	NO TAX	
All Funds			
Long term capital gain	✓		
Short term capital gain		✓	

Avoid Late Year Mutual Fund Investments In a Taxable Account!

AIG Retirement Services

888-467-3726 | FloridaDCP.AIGRS.com

Period Ending: 12/31/2021

Mutual Fund & Morningstar Fund Category	Ticker Symbol	5-Yr Star Rating	Inception Date & Benchmark	Historical Returns (Net of Fees) 12Mo (%)	3YR (%)	5YR (%)	10YR (%)	Fees (These are already included in historical returns) (%)		Expressed as Dollars Per $1,000
American Century Inflation Adjusted Bond	ACITX	***	02/10/97	6.37	8.16	4.92	2.63	0.47	=	4.70
Inflation-Protected Bond			Bloomberg US Treasury US TIPS	*5.96*	*8.44*	*5.34*	*3.09*			
American Century Diversified Bond	ADFIX	***	12/03/01	-0.85	5.10	3.40	2.83	0.60	=	6.00
Intermediate Core Bond			Bloomberg US Agg Bond	*-1.54*	*4.79*	*3.57*	*2.90*			
Prudential Short Term Corporate Bond	PBSMX	****	9/1/1989	-0.56	3.64	2.62	2.39	0.76	=	7.60
Short-Term Bond			Bloomberg Credit 1-5 Yr	*-0.55*	*3.69*	*2.90*	*2.68*			
JPMorgan Government Bond	OGGQX	****	09/09/16	-2.24	3.60	2.72	2.13	0.60	=	6.00
Intermediate Government			Bloomberg US Government	*-2.28*	*4.06*	*3.07*	*2.14*			
American Funds American Mutual	RMFEX	****	6/27/2002	24.92	16.75	12.87	12.61	0.62	=	6.20
Large Value			S&P 500	*28.71*	*26.07*	*18.47*	*16.55*			
Vanguard Total Stock Market Index	VSMPX	***	04/28/15	25.74	25.79	18.01	16.26	0.02	=	0.20
Large Blend			CRSP US Total Market	*25.72*	*25.79*	*18.00*	*16.29*			
American Funds Investment Company of America	RICEX	**	5/28/2002	24.95	21.20	14.75	14.43	0.62	=	6.20
Large Blend			S&P 500	*28.71*	*26.07*	*18.47*	*16.55*			
VALIC Socially Responsible	VSRDX	***	09/21/98	27.09	24.70	17.27	16.16	0.36	=	3.60
Large Blend			S&P 500	28.71	26.07	18.47	*16.55*			
MFS Massachusetts Growth Stock	MIGHX	***	4/1/2005	26.20	29.28	22.88	17.56	0.71	=	7.10
Large Growth			Russell 1000 Growth	*27.60*	*34.08*	*25.32*	*19.79*			
Calvert Equity	CSIEX	****	08/24/87	28.93	29.81	23.64	17.76	0.94	=	9.40
Large Growth			Russell 1000 Growth	27.60	34.08	25.32	*19.79*			
BNY Mellon MidCap Index	PESPX	***	6/19/1991	24.16	20.81	12.54	13.66	0.50	=	5.00
Mid-Cap Blend			S&P MidCap 400	*24.76*	*21.41*	*13.09*	*14.20*			
Invesco Oppenheimer Discovery Mid Cap Growth	DMCFX	*****	05/24/19	19.17	32.71	22.98	17.64	0.71	=	7.10
Mid-Cap Growth			Russell Mid Cap Growth	12.73	27.46	19.83	*16.63*			
Franklin Small Cap Value	FRVLX	****	3/11/1996	25.47	18.56	9.99	11.86	1.08	=	10.80
Small Value			Russell 2000 Value	*28.27*	*17.99*	*9.07*	*12.03*			
Invesco Small Cap Growth	GTSAX	***	10/18/95	7.33	27.94	18.94	16.58	1.15	=	11.50
Small Growth			Russell 2000 Growth	*2.83*	*21.17*	*14.53*	*14.14*			
Invesco Real Estate	IARIX	***	4/30/2004	41.49	17.58	10.88	10.82	0.87	=	8.70
Real Estate			S&P 500	*41.30*	*19.93*	*12.46*	*12.22*			
Fidelity Advisor Technology	FADTX	*****	09/03/96	27.25	46.43	34.02	24.20	0.98	=	9.80
Technology			S&P 500	*28.71*	*26.07*	*18.47*	*16.55*			
American Funds Capital Income Builder	RIREX	***	5/20/2002	14.99	11.69	8.12	7.68	0.61	=	6.10
World Allocation			(Bloomberg US Agg Bond) 30% + (MSCI ACWI NR USD) 70%	*12.51*	*15.71*	*11.15*	*9.17*			
American Funds Capital World Bond	RCWEX	****	08/15/02	-5.08	4.01	3.53	2.16	0.84	=	8.40
World Bond			Bloomberg Global Aggregate	*-4.71*	*3.59*	*3.36*	*1.77*			
American Funds EuroPacific	REREX	**	6/7/2002	2.49	17.55	12.47	9.62	0.81	=	8.10
Foreign Large Growth			MSCI ACWI Ex USA	*8.29*	*13.70*	*10.12*	*7.78*			

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Financial Literacy Quiz

- **The best predictor of future mutual fund performance is:**
  1. **Whether it's a load or no-load fund**
  2. **The fund's current manager**
  3. **The expense ratio**
  4. **The Morningstar rating**
  5. **Prior year results vs. benchmark averages**

Which Fund(s) Do I Select?

Latest returns	Morgan Stanley S&P 500 Index	Vanguard S&P 500 Index	Charles Schwab S&P 500 Index	Fidelity S&P 500 Index
1 year	11.5%	11.5%	11.5%	11.5%
3 year	7.2%	7.2%	7.2%	7.2%
5 year	5.0%	5.0%	5.0%	5.0%
Life of fund	12.2%	11.9%	13.2%	14.9%
Annual Fees	16 basis points	5 basis points	10 basis point	8 basis points

100 basis points = 1%

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Financial Literacy Quiz

- **The best predictor of future mutual fund performance is:**
  1. **Whether it's a load or no-load fund**
  2. **The fund's current manager**
  3. **The expense ratio** ✔
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5 year	5.0%	5.0%	5.0%	5.0%
Life of fund	12.2%	11.9%	13.2%	14.9%
Annual Fees	16 basis points	5 basis points	10 basis point	8 basis points

5 basis points on $10,000 = $5 year

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AIG Retirement Services

888-467-3726 | FloridaDCP.AIGRS.com

Period Ending: 12/31/2021

Mutual Fund & Morningstar Fund Category	Ticker Symbol	5-Yr Star Rating	Inception Date & Benchmark	Historical Returns (Net of Fees) 12Mo (%)	3YR (%)	5YR (%)	10YR (%)	Fees (These are already included in historical returns) (%)		Expressed as Dollars Per $1,000
American Century Inflation Adjusted Bond	**ACITX**	***	**02/10/97**	**6.37**	**8.16**	**4.92**	**2.63**	**0.47**	=	**4.70**
Inflation-Protected Bond			Bloomberg US Treasury US TIPS	*5.96*	*8.44*	*5.34*	*3.09*			
American Century Diversified Bond	**ADFIX**	***	**12/03/01**	**-0.85**	**5.10**	**3.40**	**2.83**	**0.60**	=	**6.00**
Intermediate Core Bond			Bloomberg US Agg Bond	*-1.54*	*4.79*	*3.57*	*2.90*			
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JPMorgan Government Bond	**OGGQX**	****	**09/09/16**	**-2.24**	**3.60**	**2.72**	**2.13**	**0.60**	=	**6.00**
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VALIC Socially Responsible	**VSRDX**	***	**09/21/98**	**27.09**	**24.70**	**17.27**	**16.16**	**0.36**	=	**3.60**
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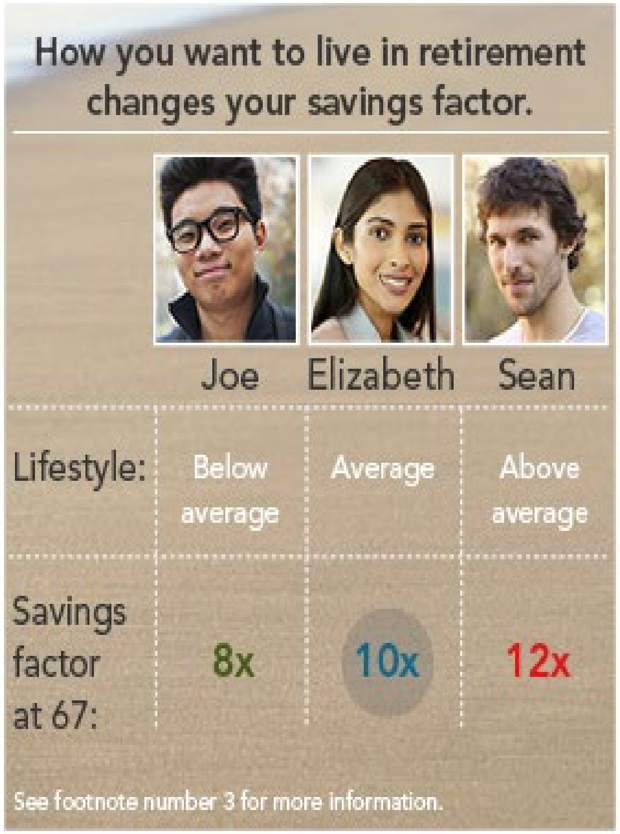
Retirement Strategies and Long Term Savings Targets

Savings Factors



Source: Fidelity Investments

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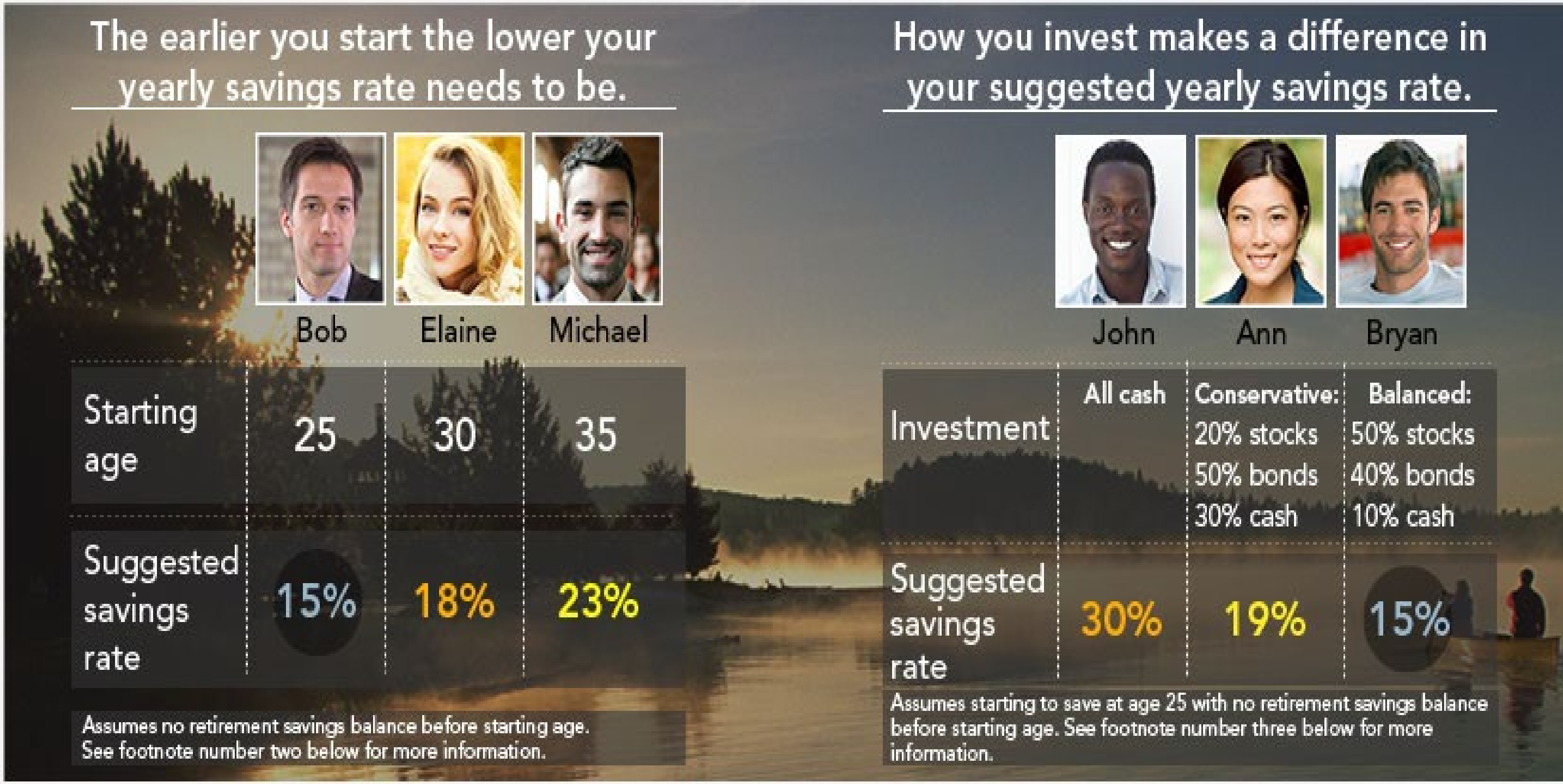
Savings Rates

Source: Fidelity Investments

Starting to Save/How to Save



The earlier you start the lower your yearly savings rate needs to be.

	Bob	Elaine	Michael
Starting age	25	30	35
Suggested savings rate	15%	18%	23%

Assumes no retirement savings balance before starting age.
See footnote number two below for more information.

How you invest makes a difference in your suggested yearly savings rate.

	John	Ann	Bryan
Investment	All cash	Conservative: 20% stocks 50% bonds 30% cash	Balanced: 50% stocks 40% bonds 10% cash
Suggested savings rate	30%	19%	15%

Assumes starting to save at age 25 with no retirement savings balance before starting age. See footnote number three below for more information.

Source: Fidelity Investments

How Much Do I Need to Save?

Fidelity Investments Study, No Pension

Age	Savings Target	With FRS Pension
30	1X	Less
35	2X	Less
40	3X	Less
45	4X	Less
50	6X	Less
55	7X	Less
60	8X	Less
67	10X	Less

See assumptions in the appendix at the end of presentation

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The Tale of 4 Future Retirees Investing $300/Month For 45 Yrs. With a 9% Market Return

- Retiree A invests in actively managed mutual funds (1.1% fee) AND pays a 1% fee to his/her advisor (net return 6.9%)
- Retiree B invests in actively managed mutual funds (1.1% fee), but no advisor (net return 7.9%)
- Retiree C invests in index funds (0.1% fee), no advisor (net return 8.9%)
- Retiree D invests in index funds, AND saves another $200/month by driving lower cost vehicles ($0.30/mile vs. $0.50/mile)

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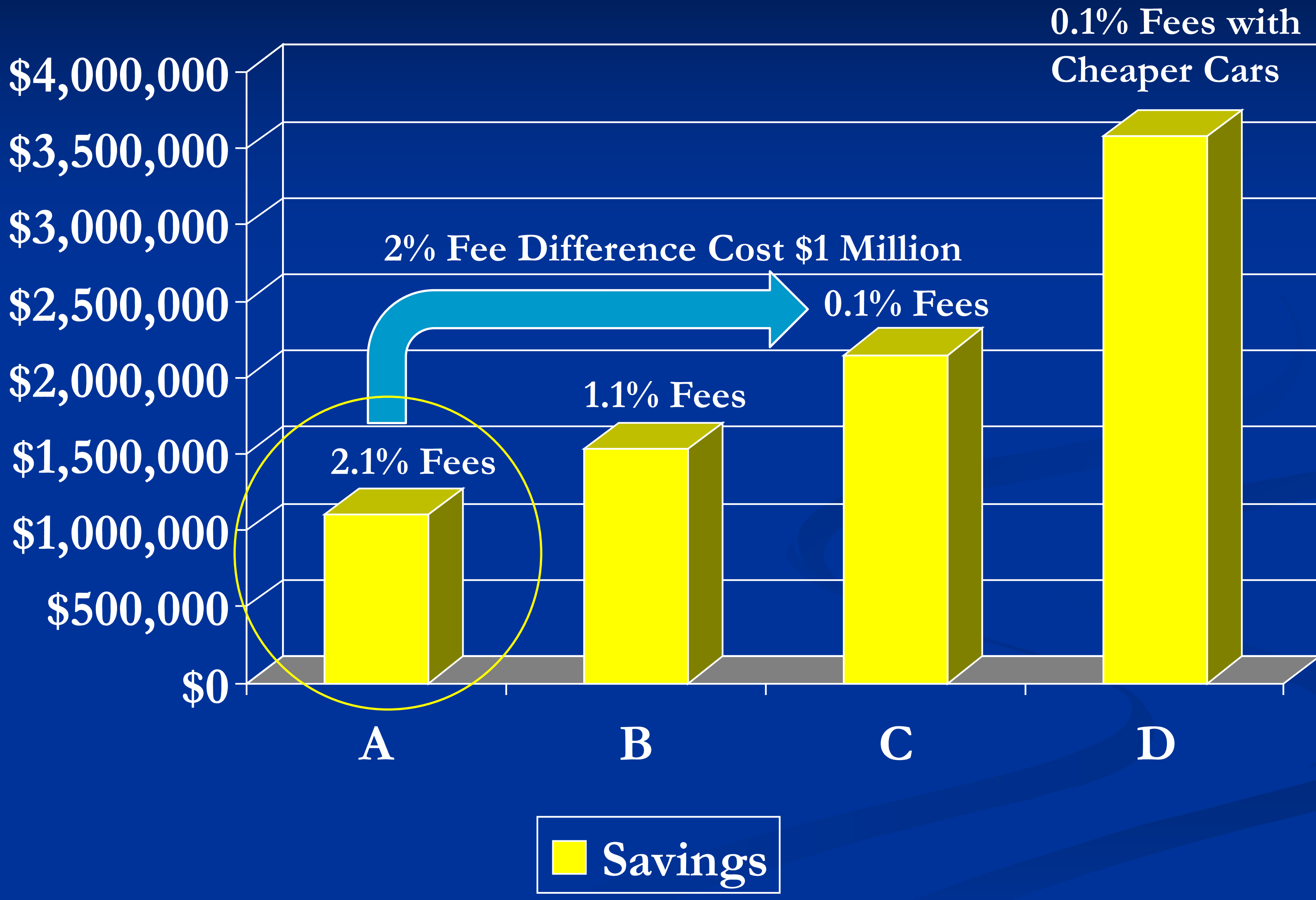
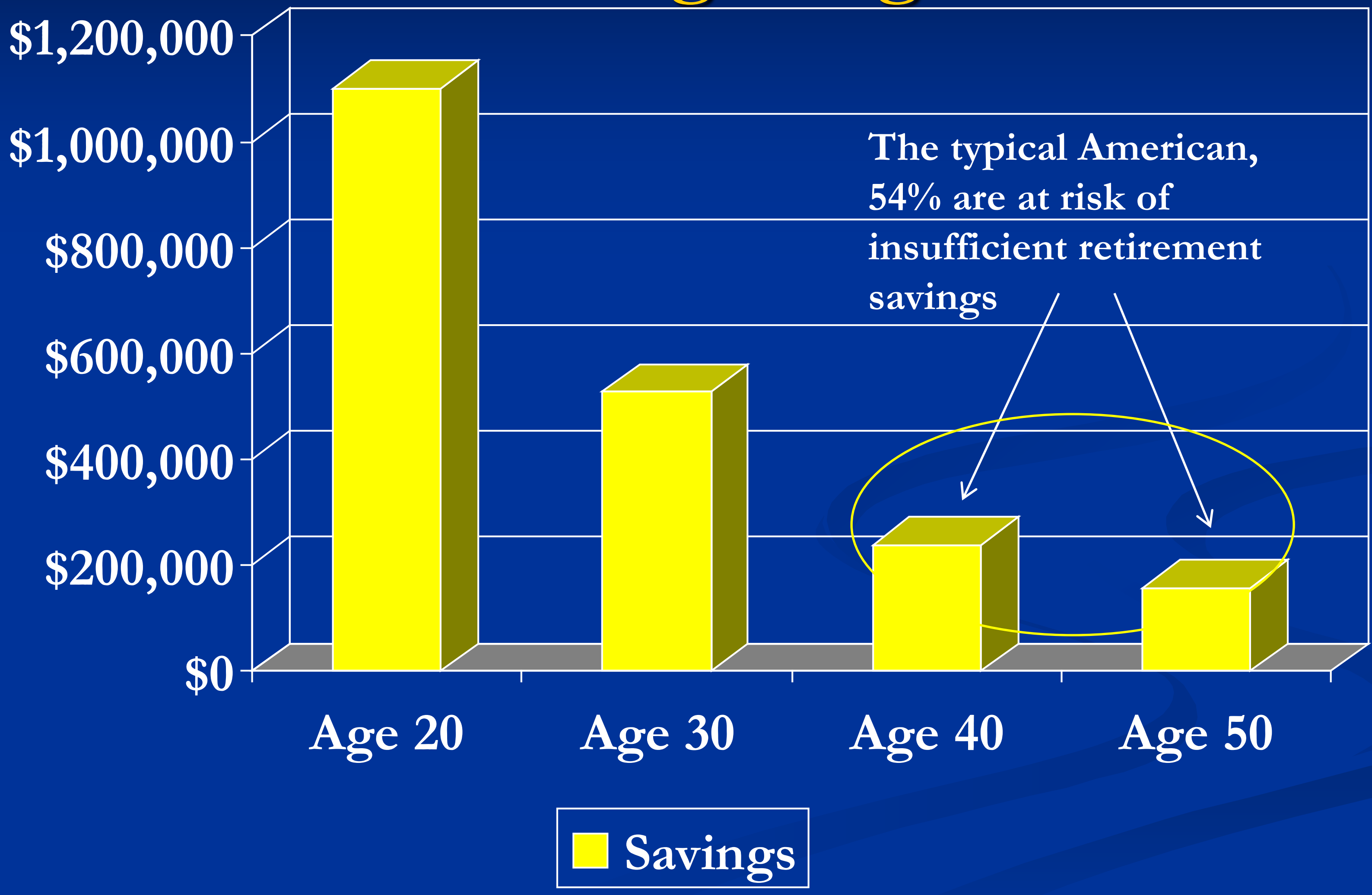
The Tale of 4 Future Retirees



Saving $300/mo. @ 6.9% for 45 Years Starting at Age



Half of 55 year olds + think they need $250K for retirement, only 25% actually have $250K

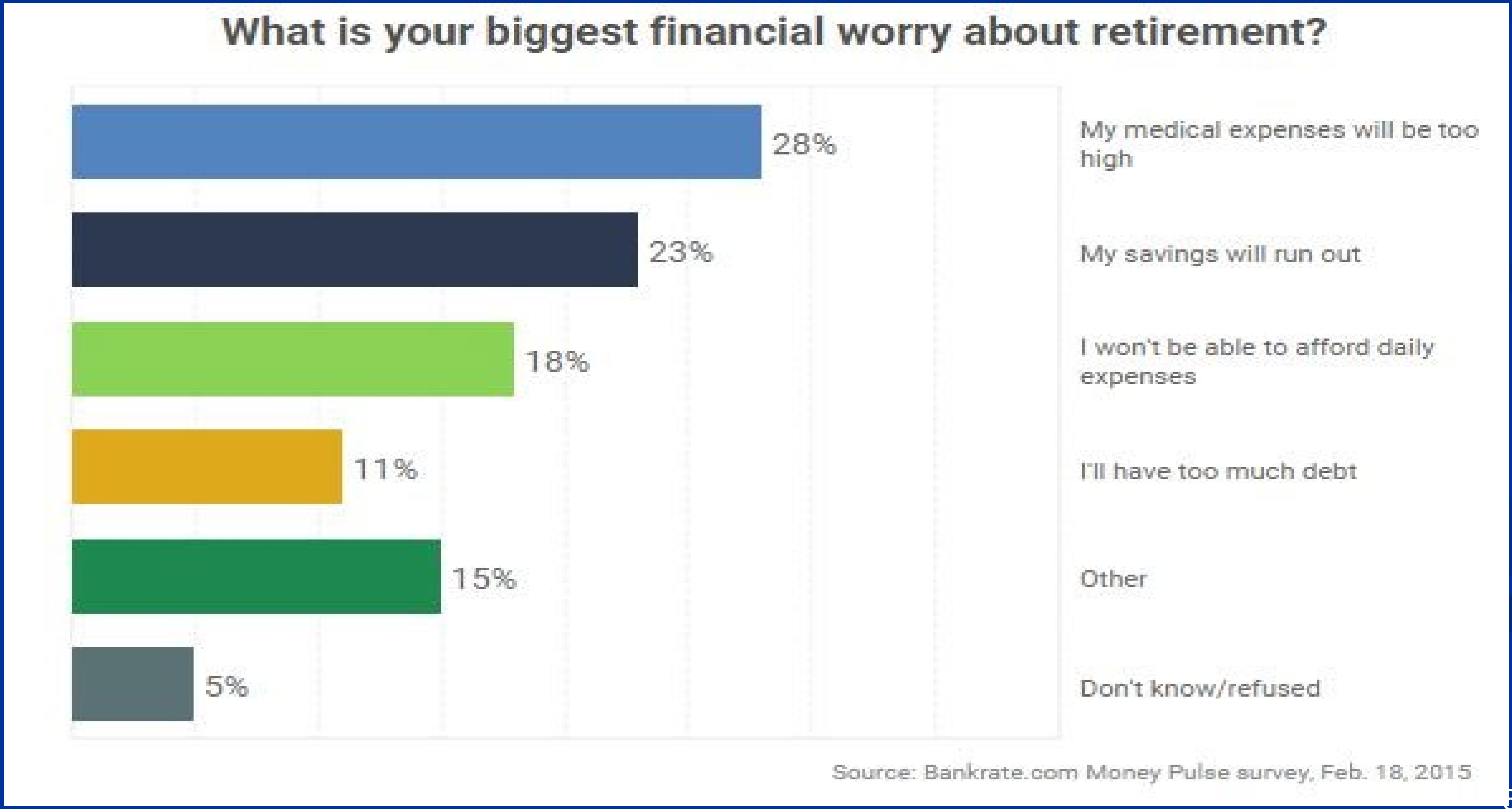
Two Big Retirement Risks

- Dying

Two Big Retirement Risks

- Dying, and
- Out living your money

However, There Are Strategies That Will Reduce the Risk of Out Living Your Money



Have Enough to Retire?

Item	Amount
Jack and Jill make $50,000 each Age 67 each	$100,000
Annual spending (85% - 100% of final year working)	$85,000
Less: Social Security and FRS	($55,000)
Amount needed from savings	$30,000

Assume a 7% after tax return and 3% inflation

How long will my retirement savings last?

Use this calculator to see how long your retirement savings will last. This is based on your retirement savings and your inflation adjusted withdrawals.

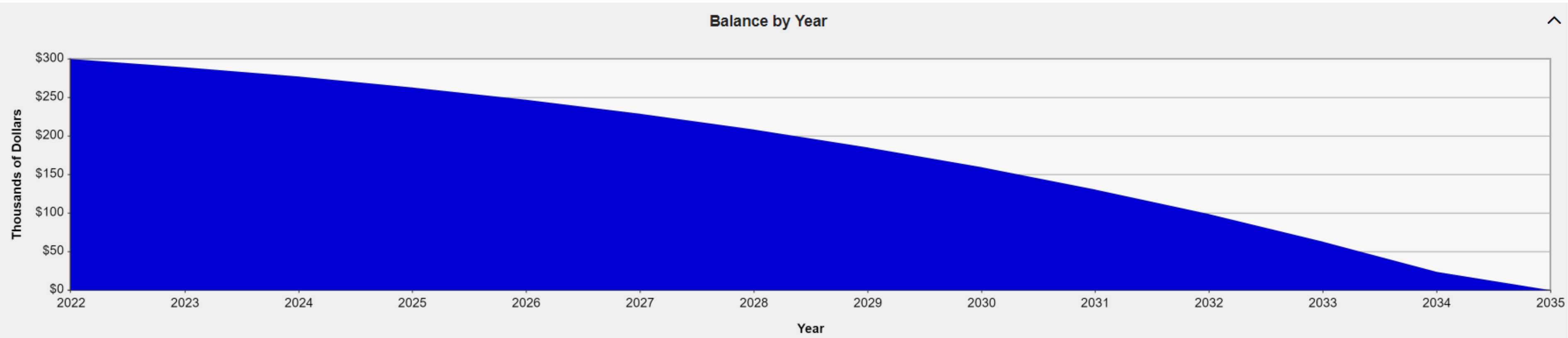
Calculate | View Report

You will be able to fund 12 years and 7 months in retirement.

*indicates required.

Retirement savings inputs:

Cumulative savings at retirement:*	$300,000	$0 – $10k – $100k – $1m
Amount you want to spend annually in retirement:*	$30,000	$0 – $10k – $100k – $500k
After tax rate of return in retirement:*	7%	0% – 4% – 8% – 12%
Expected inflation rate:*	3%	0% – 6% – 13% – 20%



https://www.cchwebsites.com/content/calculators/RetirementDistribution.html

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Have Enough to Retire?

Assume	Amount
Current savings	$300,000
Annual withdrawals (10%)	$30,000
Annual withdrawal increases	3%
After tax return on investments	7%
Money will last	**12 years 7 months**

If this couple was making $100,000 the year of retirement, then $300,000/$100,000 = 3X which is NOT enough. 67 years old + 12.6 years = 79.6 years old when the money depletes

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Withdrawal Rates, Investment Returns and Inflation Assumptions are Critical

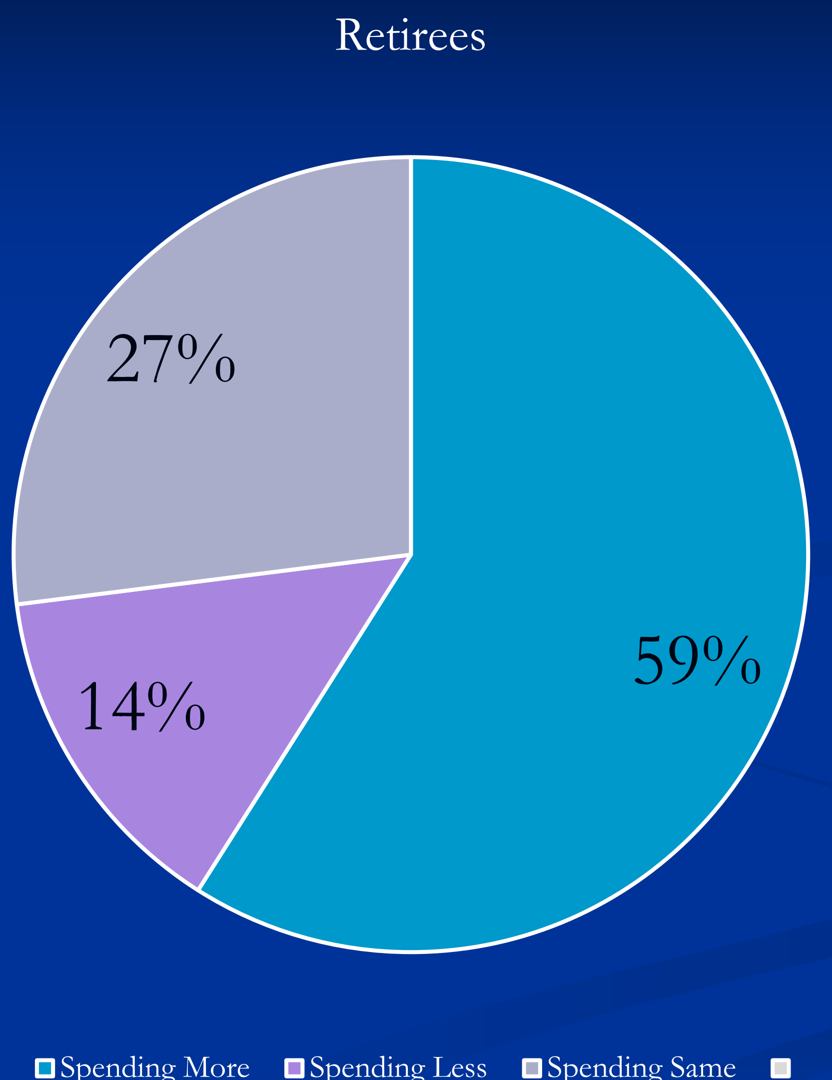
	Annual Withdrawals	After Tax Return	Inflation	Money Lasts
Base case	$30,000 (10%)	7%	3%	12.6 years
Higher W/D	$45,000 (15%)	7%	3%	7.7 years
Lower W/D	$15,000 (5%)	7%	3%	37.6 years
Lower return	$30,000 (10%)	5%	3%	11.1 years
Higher inflation	$30,000 (10%)	7%	5%	11.1 years
Low case	$30,000 (10%)	5%	5%	10.0 years

Withdrawal Rates

% of Pre-retirees Who Said They Can Safely Withdraw	This Percentage of Their Savings
23%	4% or less
28%	5% - 9%
15%	10% - 14%
9%	15% - 24%
4%	25% - 49%
3%	50% or more
18%	Don't know

Source: New York Life
Ages 40 or older with income > $100,000

What Will I Spend in Retirement?



Source: J. P. Morgan Private Bank Research

Enhancing Retirement Income While Cutting Expenses

- Work longer at full time job
- Consider part time work
- Take social security at full retirement age
- Pay off mortgage by retirement
- Downsize your house
- Review IRA and minimize taxes

Planning Social Security Income

- Check your benefit statement carefully!
- Up to 85% of your benefit may be subject to federal income tax
- Cost of living adjustment (COLA) each year
- Spouse's benefit > of one half other spouse’s benefit or their benefit from their earnings

Younger workers likely to receive lower benefits

Should I Take Early Social Security?

- **Yes**, if
  - You can earn high returns on money
  - You are in poor health
  - You are retired and need money
- **No**, if
  - Your life expectancy is good
  - You continue to work
  - You want a bigger survivor benefit
  - You want to trim taxes in your 70s

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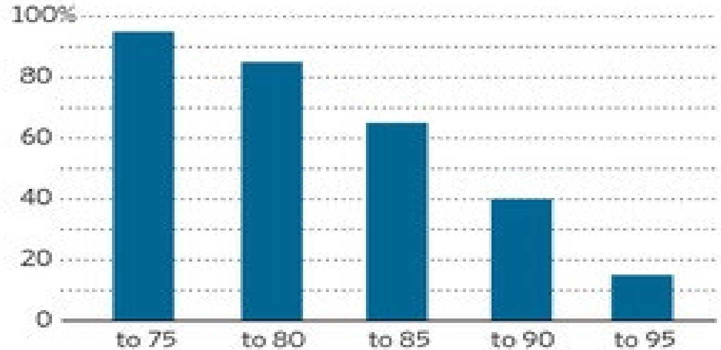
Delaying Social Security

Getty Images

How Long You Might Live...

Chances that one person in a married couple, both age 62, will live...



Source: Center for Retirement Research at Boston College, based on Social Security actuarial data

...And What Your Benefit Could Be

A hypothetical example of someone whose full retirement age is 66. Amounts are rounded.

$1,350
AGE 62

$1,800
AGE 66
Waiting four years earns an extra $450 a month.

$2,376
AGE 70
Waiting eight years earns an extra $1,026 a month.

Source: Fidelity Investments

The Wall Street Journal

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Delay Social Security Until 70?

Arguments For	Arguments Against
Substantially higher benefit (8% per year increase)	Must draw on savings until 70, what if market falls?
Forces thrift after retirement	Most people can't afford to wait, 75% take it early, only 4% wait until 70
A greater benefit for retirees who live longer lives	A smaller benefit if you die earlier than expected
Substantial discount if you take Soc. Sec. at 62, penalties if you keep working	Rules could change before you turn 70

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Do I Need Life Insurance After I Retire?

- **Probably not** unless you are taking a single life annuity pension and wish to protect your spouse
- If so, buy decreasing term, it's **10X** cheaper than whole life

Questions?

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Investment Strategies for Retirement Savings

Paul P. Gregg, M.S.A. C.P.A.

Executive in Residence
Senior Instructor
Department of Finance and
Dr. P. Phillips School of Real Estate

UCF College of Business Administration

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Appendix

Fidelity Investment Assumptions for Retirement Savings Targets

1. Fidelity has developed a series of income multiplier targets corresponding to different ages, assuming a retirement age of 67, a 15% savings rate, a 1.5% constant real wage growth, a planning age through 93, and an income replacement target of 45% of preretirement income (assumes no pension income). The final income multiplier is calculated to be 10x your preretirement income and assumes a retirement age of 67. The income replacement target is based on Consumer Expenditure Survey 2011 (BLS), Statistics of Income 2011 Tax Stat, IRS 2014 tax brackets and Social Security Benefit Calculators. The 45% income replacement target (excluding Social Security and assuming no pension income) from retirement savings was found to be fairly consistent across a salary range of $50,000-$300,000, therefore this factor may have limited applicability if your income is outside that range.

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