

**American Association of Individual Investors
Silicon Valley Chapter
presents
Financial Planning Workshop**

**Safe Withdrawal Rates
from your Retirement Portfolio**

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Webcast details at www.siliconvalleyaaii.org

Financial Planning Workshops

- Fundamentals of Investing
- Building a Diversified Portfolio
- Introduction to Computerized Investing
- Active versus Passive Investing Strategies
- Retirement Planning
- Managing your Cash Flow in Retirement
- >>> **Safe Withdrawal Rates from your Retirement Portfolio**
- Social Security and Medicare
- Estate Planning

Overview

- **Bengen's Four Percent Rule**
- **Variations on Bengen's Rule**
- **RMD drawdown method**
- **Bucket strategies**
- **Equity glide paths**

Most people spend more time planning a two-week vacation than their retirement.

Anonymous

Background to Bengen's Rule

- **Ibbotson data from 1926 to 1992**
 - Common stocks 10.3% annual growth rate
 - Intermediate Treasuries 5.1% growth rate
 - Inflation 3% per annum
- **Portfolio of 60% stocks/40% bonds**
 - Average return = 8.2% per annum
 - Real Return = 5.2% per annum
- **Withdrawal rate of 5% pa should be OK ?**

Let's Try An Experiment

- Assume \$1M retirement portfolio on 1/1/1980
 - Invest 60% stock index + 40% intermediate bonds
 - Rebalance annually
- Withdraw 4% (\$40,000) to fund expenses for 1980
- Withdraw the same amount on January 1 each year increased 3% per annum for inflation
- How long does the portfolio last?
- Repeat for various withdrawal rates

Simple Diversified Portfolio

- **60% Stock: S&P 500 Index (VFINX)**

Compound annual growth rate 1980-2015 = 10.4%

- **+ 40% Bonds: 5-year Treasuries**

Compound annual growth rate 1980-2015 = 5.9%

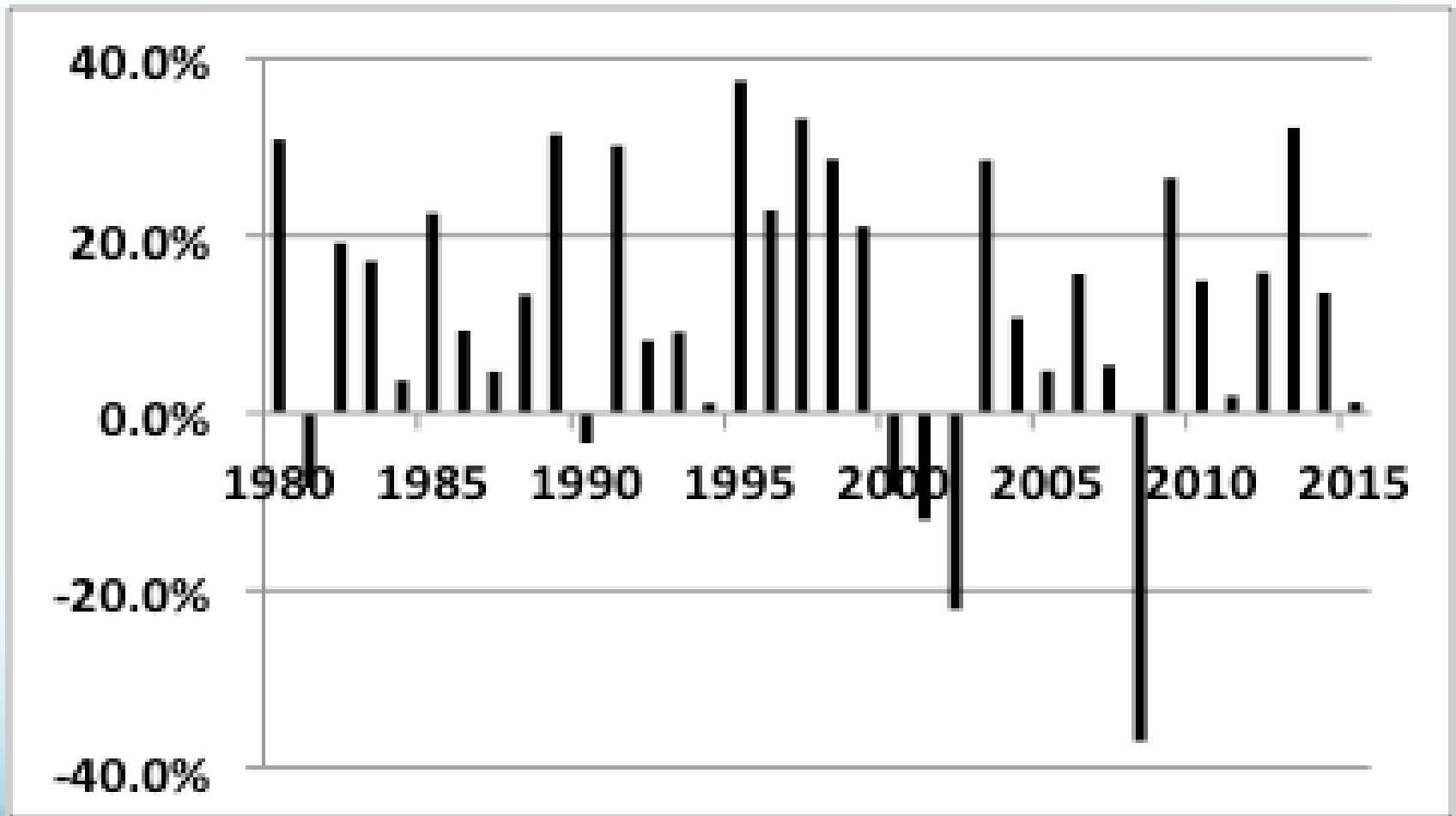
- **= Simple diversified portfolio**

Compound annual growth rate 1980-2015 = 9.0%

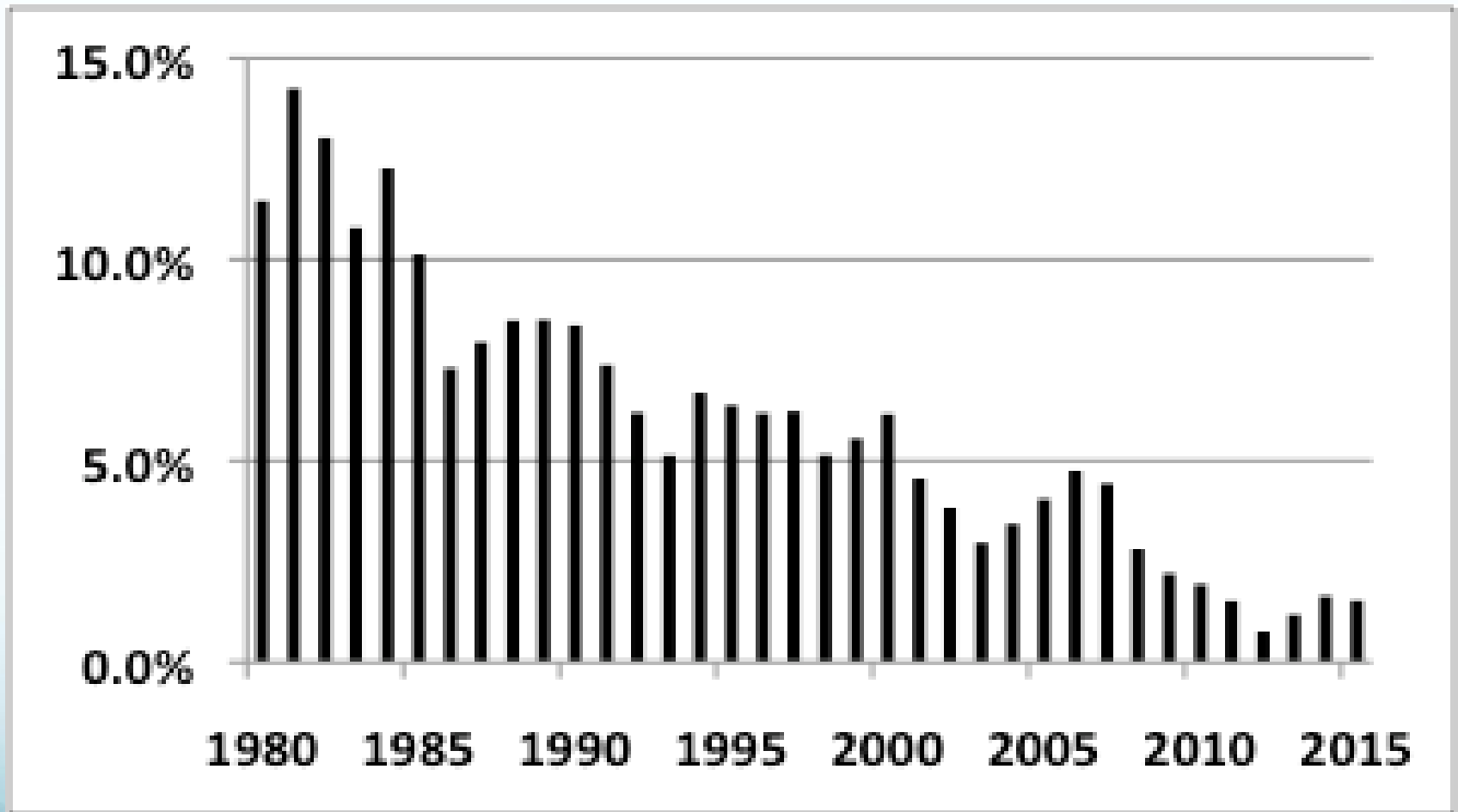
Real growth rate after 3% annual inflation = 6.0%

\$1M grows to \$22M over 36 years with no withdrawals

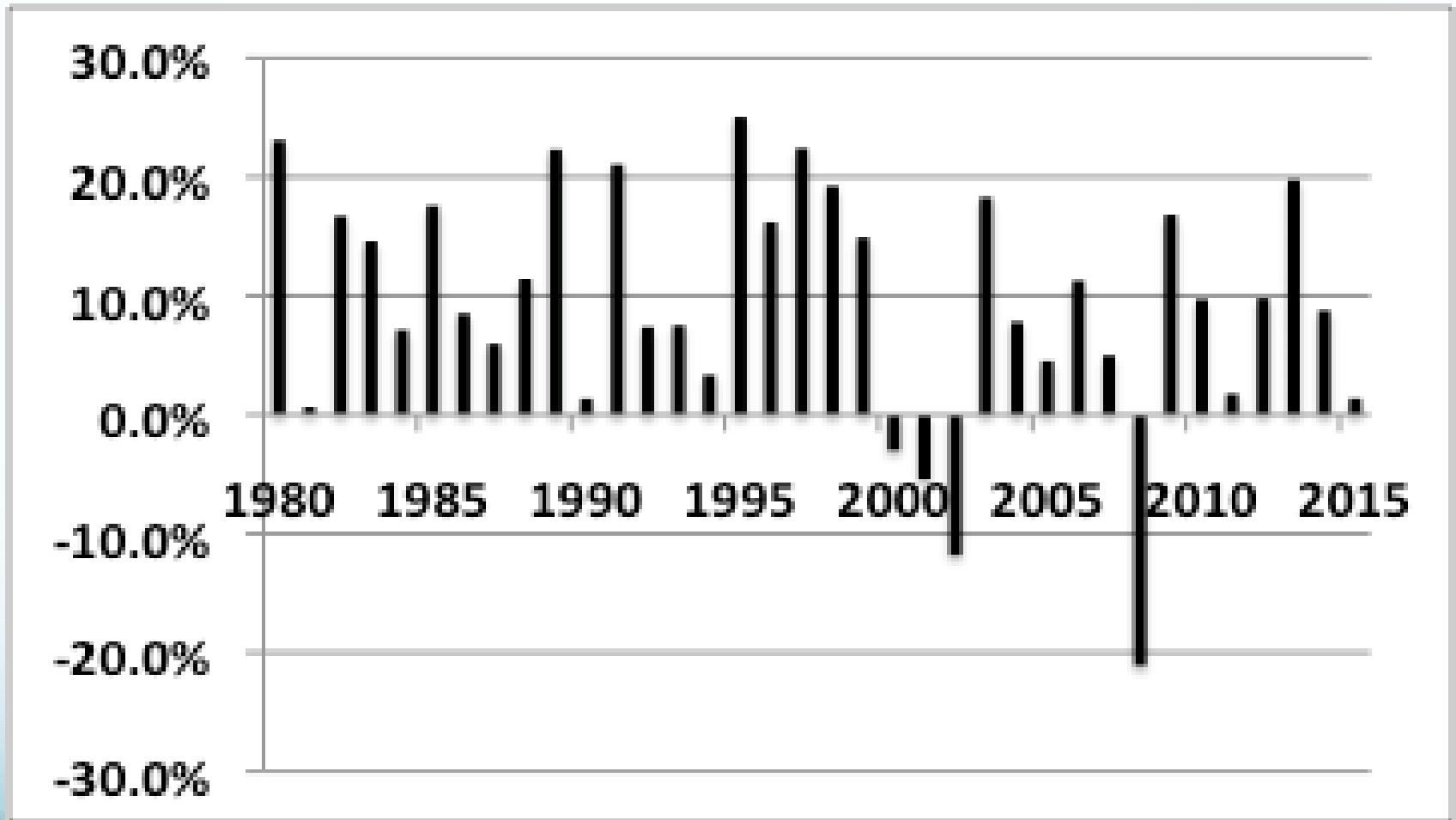
S&P 500 Total Return (VFINX)



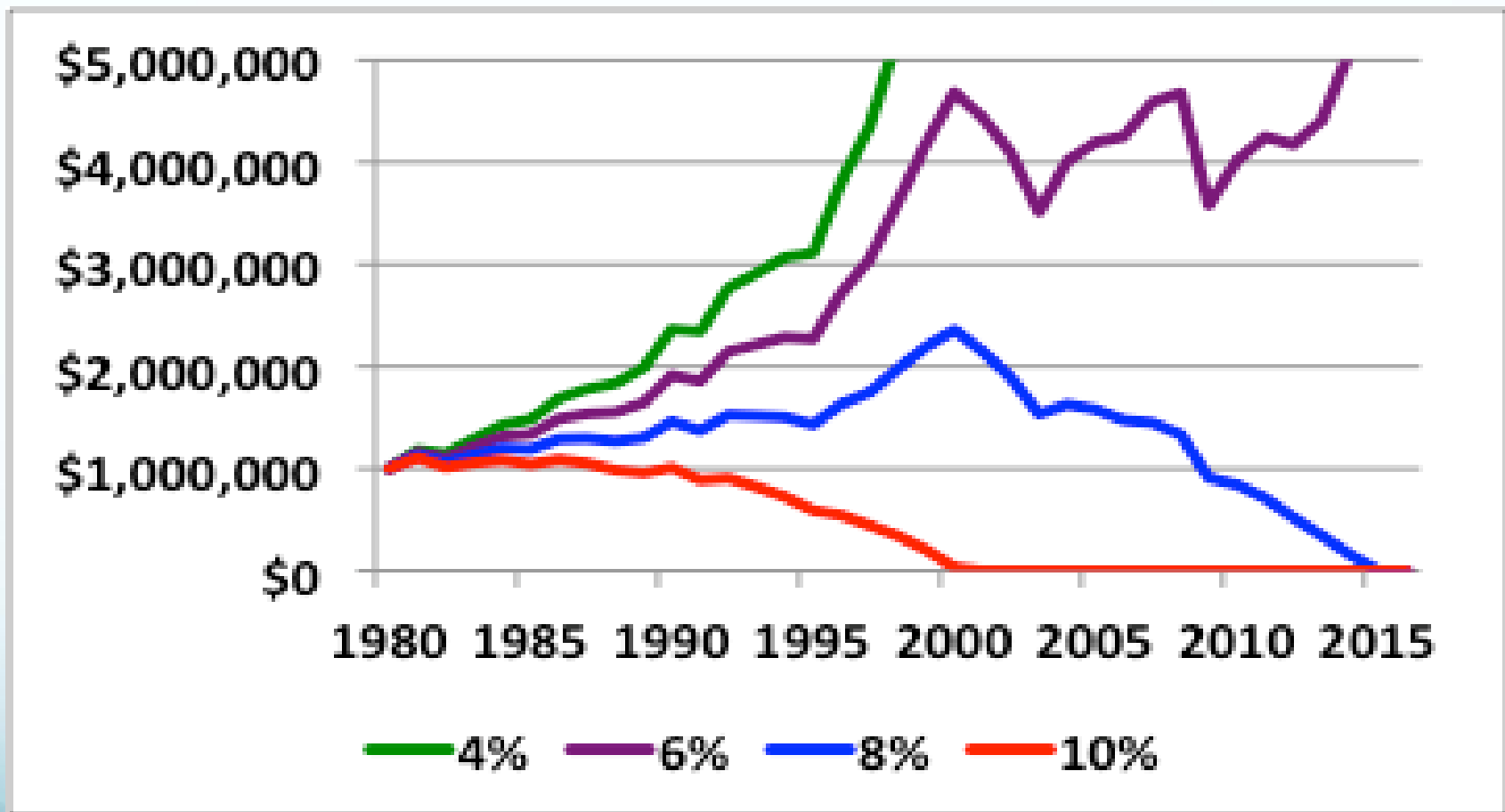
5-Year Treasury Total Return



60%S/40%B Portfolio Total Return



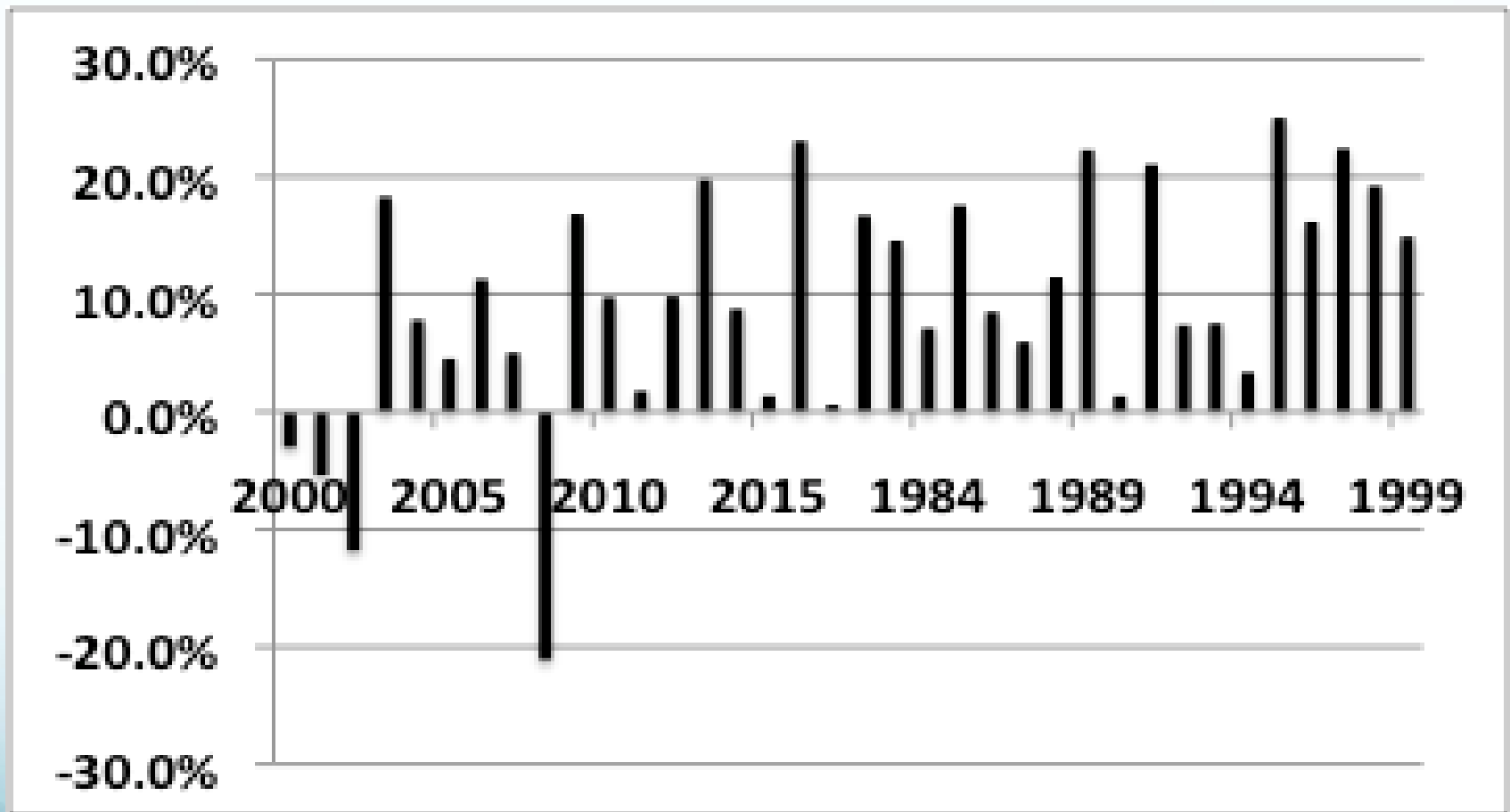
Portfolio Value with Various Withdrawal Rates



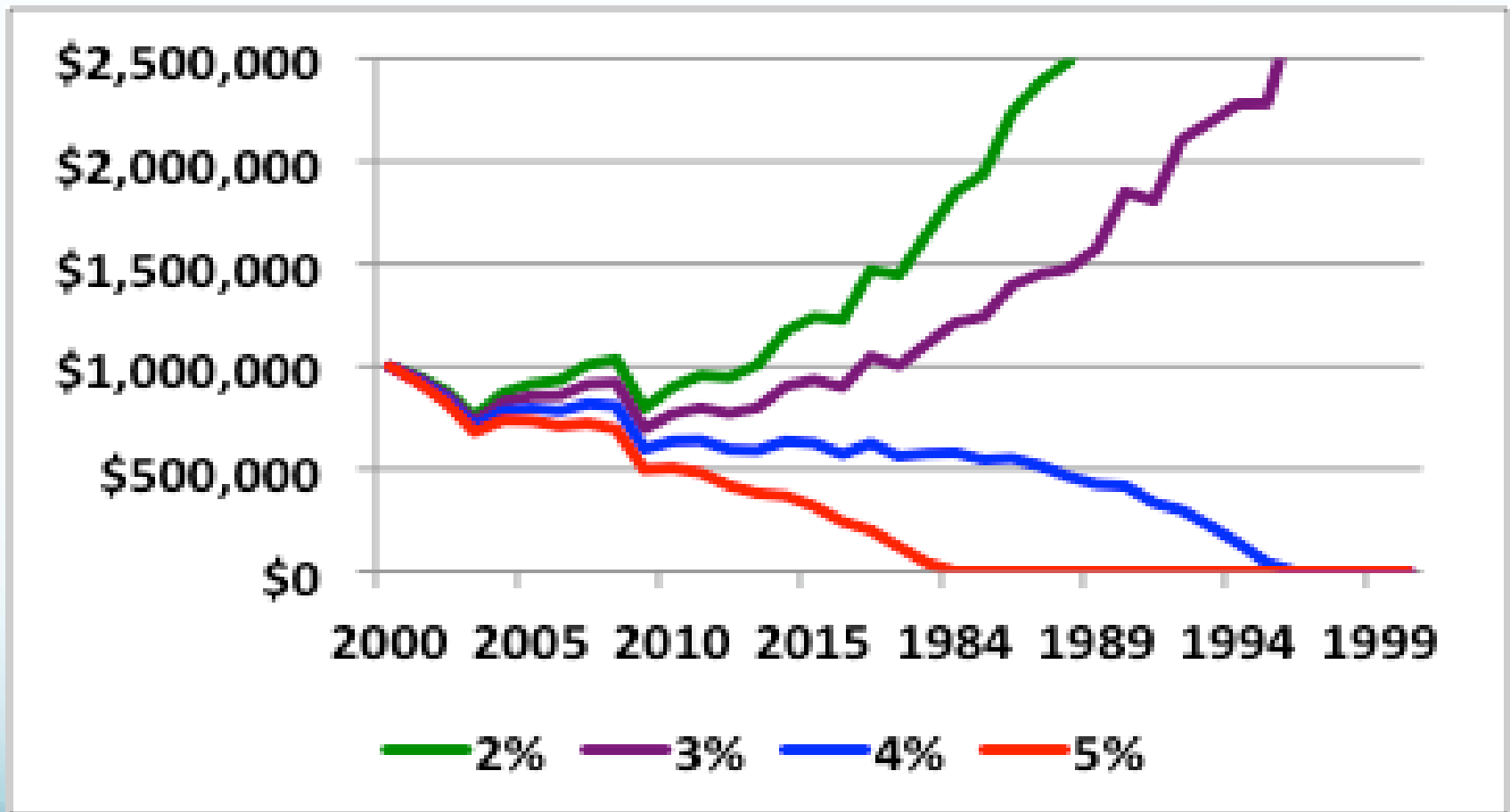
How About Less Favorable Timing?

- What happens if we start the drawdowns in 2000?
- Use the total returns from 2000 thru 2015 for the first years of retirement, followed by the data from years 1980 thru 1999
- Same 9.0% per annum return over the total 36 year period so long as there are no cash-flows
- How does this affect our retirement plan with annual drawdowns?

Portfolio Returns with Unfavorable Timing Starting in 2000



Portfolio Value with Various Withdrawal Rates and Unfavorable Timing



Lessons Learned

- **Not good enough to look just at the averages for investment returns and inflation**
- **Must look at what actually happened year-by-year**
- **Performance during the early retirement years is critically important**
 - **Beware a severe stock market downturn “event” coupled with high inflation**
 - **Per Michael Kitces: Similar problem exists for later years of the accumulation phase.**

Bengen's Research (1994)

- **Use Ibbotson's annual data from 1926 thru 1992**
 - **50% common stocks + 50% intermediate treasuries**
 - **Rebalanced annually**
- **Withdraw 3% of portfolio at the start of every year**
 - **Adjusted for 3% per annum inflation**
- **Evaluate portfolio performance over consecutive 30-year periods, e.g. 1926-1955, 1927-1956, etc.**
- **Repeat for 4%, 5%, 6% withdrawal rates**

Bengen's Results

Initial withdrawal rate

3% pa

4% pa

5% pa

6% pa

Portfolio longevity

> 50 years

35 years

20 years

17 years

- Worst starting years, ranked by severity of problem:

1966, 1965, 1968, 1969, 1937, 1962, 1973,
1939, 1940

Bengen's Four Percent Rule

- **Set up 50% - 75% of portfolio in equities with the balance in intermediate Treasuries**
- **Withdraw 4% of assets in first year**
- **Increase by inflation for subsequent years**
- **Most portfolios should last over 50 years**
- **Worst case portfolio lasts 35 years**

Variations on Bengen's 4% Rule

- **Bengen (2004)**

 - OK to use 4.5% withdrawal rate if small cap stocks are included

 - 35% Large cap stocks

 - 18% Small cap stocks

 - 47% Intermediate Treasuries

- **Bengen (2012)**

 - **Informal Rule: Take pre-emptive action if current withdrawal rate exceeds the initial rate by 25%**

Trinity Study (1998)

- **Similar to Bengen's research except ...**
 - Used long-term high-grade corporate bonds instead of intermediate treasuries
 - Used Ibbotson data from 1926 through 1995
 - Calculated “portfolio success rates” instead of worst case portfolio longevity
 - i.e. percentage of all past payout periods where the portfolio ended with a positive balance
 - **75% Stocks/25% Bonds with CPI adjusted withdrawals**
- **Results:**

Withdrawal rates:	<u>3%</u>	<u>4%</u>	<u>5%</u>	<u>6%</u>	<u>7%</u>
Port success rate:	100%	98%	83%	68%	49%

Israelsen (2016)

- **Evaluated two different portfolios using Ibbotson data from 1926 through 2014**
- **Conservative:**
 - 15% large cap + 10% small cap stocks
+ 55% bonds + 20% cash**
- **Moderate:**
 - 40% large cap + 25% small cap stocks
+ 25% bonds + 10% cash**
- **Used fixed inflation from 0% thru 6%/year**

Israelsen's Results

Probability of Success (COLA = 3%)

<u>W'draw Rate</u>	<u>Conserv Port</u>	<u>Moderate Port</u>
3%	100%	100%
4%	93%	98%
5%	58%	91%
6%	33%	87%
7%	20%	71%

Guyton and Klinger (2006)

- **Eight-asset diversified portfolio, 40 year longevity**
- **Portfolio management rule**
 - Determines the source of each withdrawal
 - Limits withdrawals from equities with negative returns
- **Inflation rule**
 - Caps maximum annual CPI increase at 6%
- **Capital preservation and prosperity rules**
 - Act as +/- 20% “guardrails” around initial rate
- **With these rules 5.2% - 6.2% initial rate OK**

Kitces (2015)

- **Most people following the 4% rule die with a final portfolio significantly greater than the original value**
- **Ratcheting 4% Rule**
 - **Start with a conservative withdrawal rate for the early retirement years, say 4%**
 - **Any year the portfolio balance is greater than 50% higher than the original value, increase the withdrawal rate, including all COLA increases, by 10%**
 - **Limit this 10% ratchet to a maximum of once every third year.**

Current Environment

- **Pfau and Dokken (2015)**
 - **Dangerous to use historic data**
 - **The 4% rule may be optimistic today**
 - **Unprecedented low interest rates**
 - **High stock market valuations (Shiller PE10)**
 - **40 year horizon from retirement date is more appropriate**
 - **4% withdrawal rate from a 75% stock portfolio has only a 73% success rate**
 - **Even a 2% withdrawal rate has only a 90% success rate i.e. 10% chance of failure**

William Sharpe (2013)

- For any retirement portfolio the amount you withdraw should depend on
 1. How much money you have in the account
 2. How long you are likely to need it
- After the first year all Bengen's "x"% rules no longer depend on Item 1 above.

Limitations of Bengen-Like Rules

- **Cash flow determined only by initial portfolio value; no dependence on current market value**
- **Constant fixed real cash flow**
- **Unravels in periods of high inflation**
- **Assumes historical worst case sequence of returns risk**
- **Typically \$\$\$ from excess returns left on the table for heirs**
 - **May be significantly greater than initial portfolio**
 - **Could have funded improved life style**

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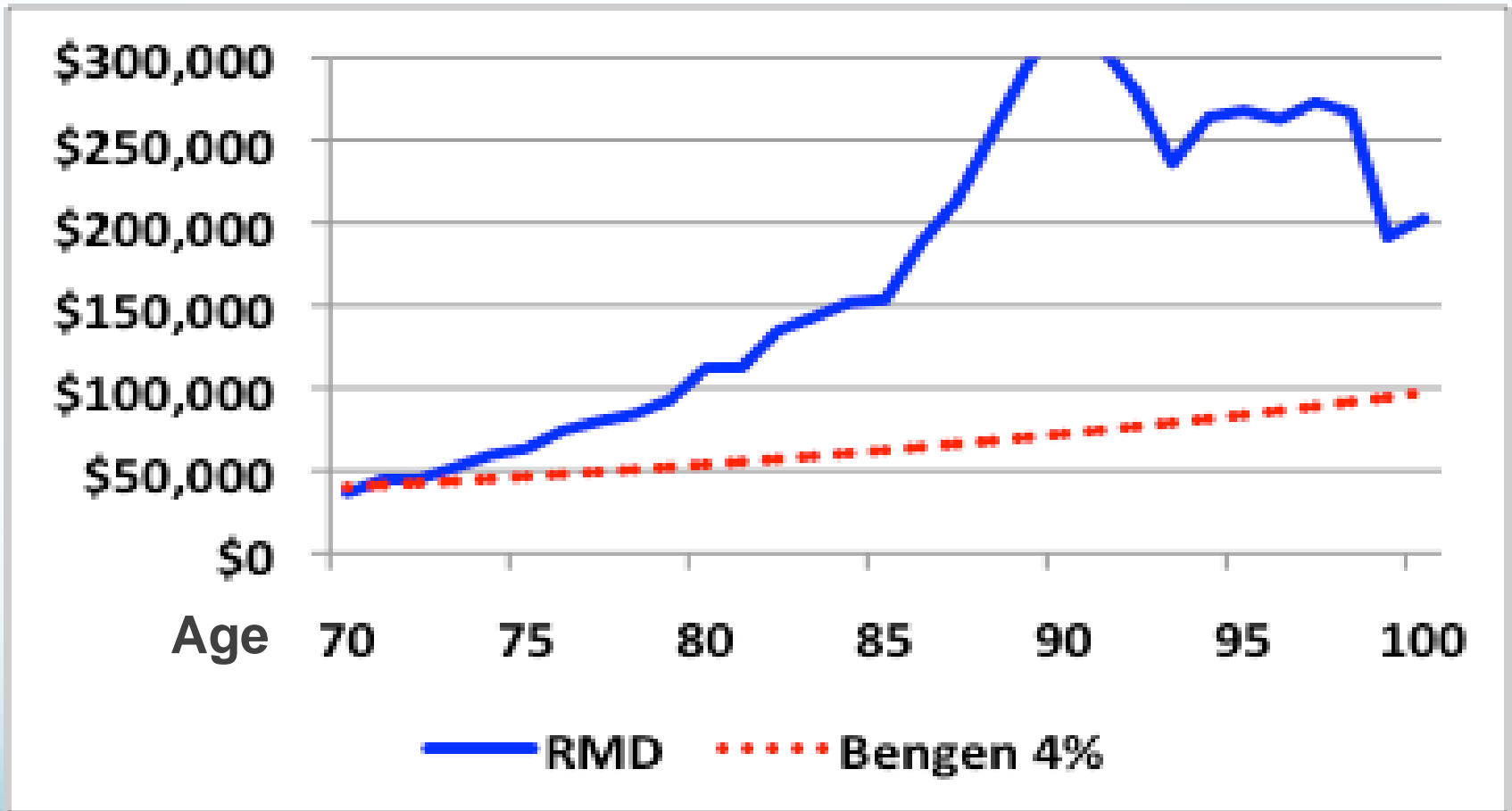
IRS Required Minimum Distribution RMD Method

- Sun and Webb (2012)
- Advantages
 - Easy to follow
 - Conservative withdrawal rate
 - Does not drive asset allocation
 - Responds to current market value
- Disadvantage
 - Variable withdrawals
 - Withdrawals not tailored to needs

IRS RMD Table III Uniform Lifetime

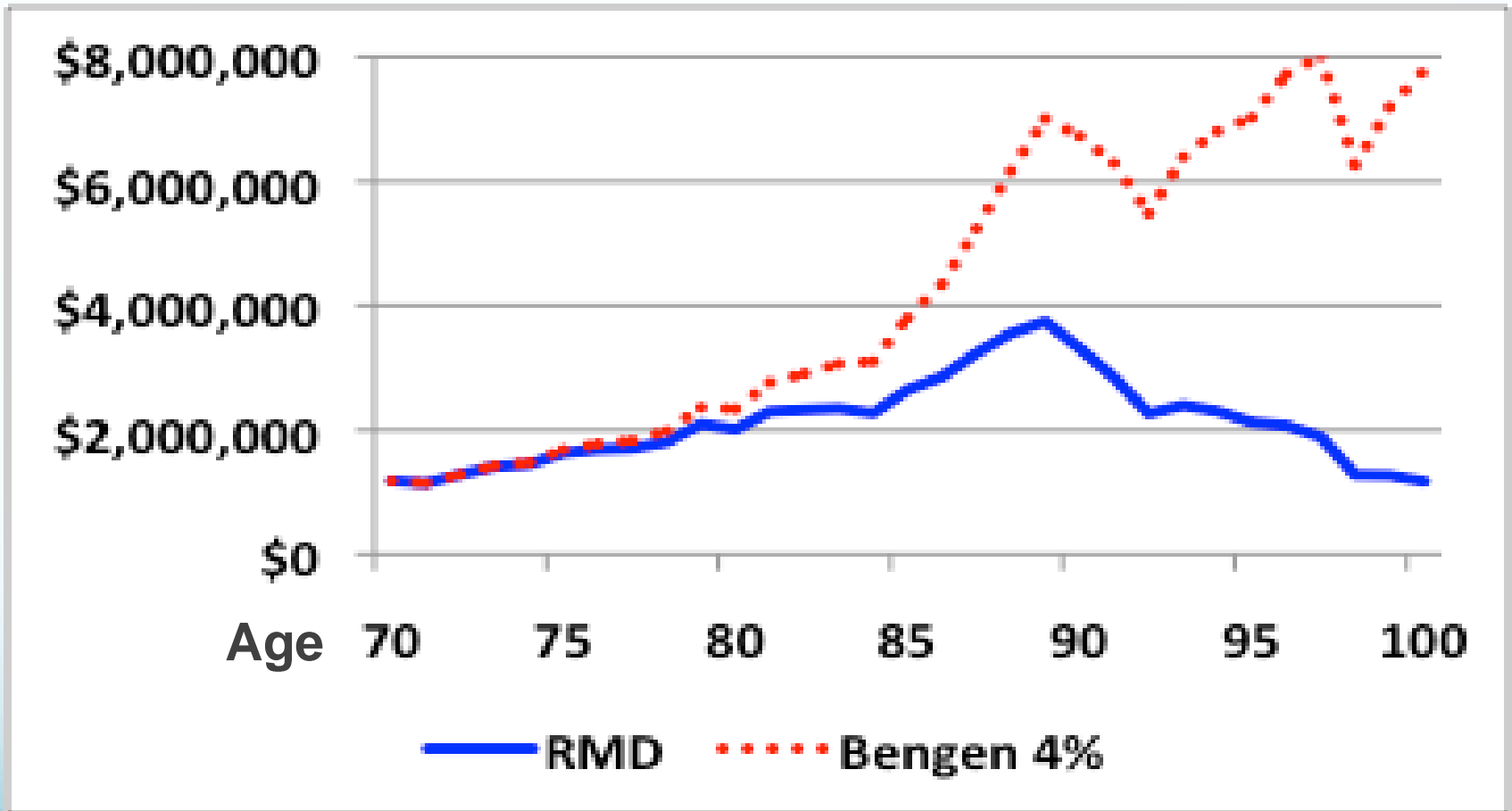
Age	Years	RMD		Age	Years	RMD
70	27.4	3.6%		86	14.1	7.1%
71	26.5	3.8%		87	13.4	7.5%
72	25.6	3.9%		88	12.7	7.9%
73	24.7	4.0%		89	12.0	8.3%
74	23.8	4.2%		90	11.6	8.8%
75	22.9	4.4%		91	10.8	9.3%
76	22.0	4.5%		92	10.2	9.8%
77	21.2	4.7%		93	9.6	10.4%
78	20.3	4.9%		94	9.1	11.0%
79	19.5	5.1%		95	8.6	11.6%
80	18.7	5.3%		96	8.1	12.3%
81	17.9	5.6%		97	7.6	13.2%
82	17.1	5.8%		98	7.1	14.1%
83	16.3	6.1%		99	6.7	14.9%
84	15.5	6.5%		100	6.3	15.9%
85	14.8	6.8%		-	-	-

RMD and Bengen Withdrawals Favorable Conditions Starting in 1980

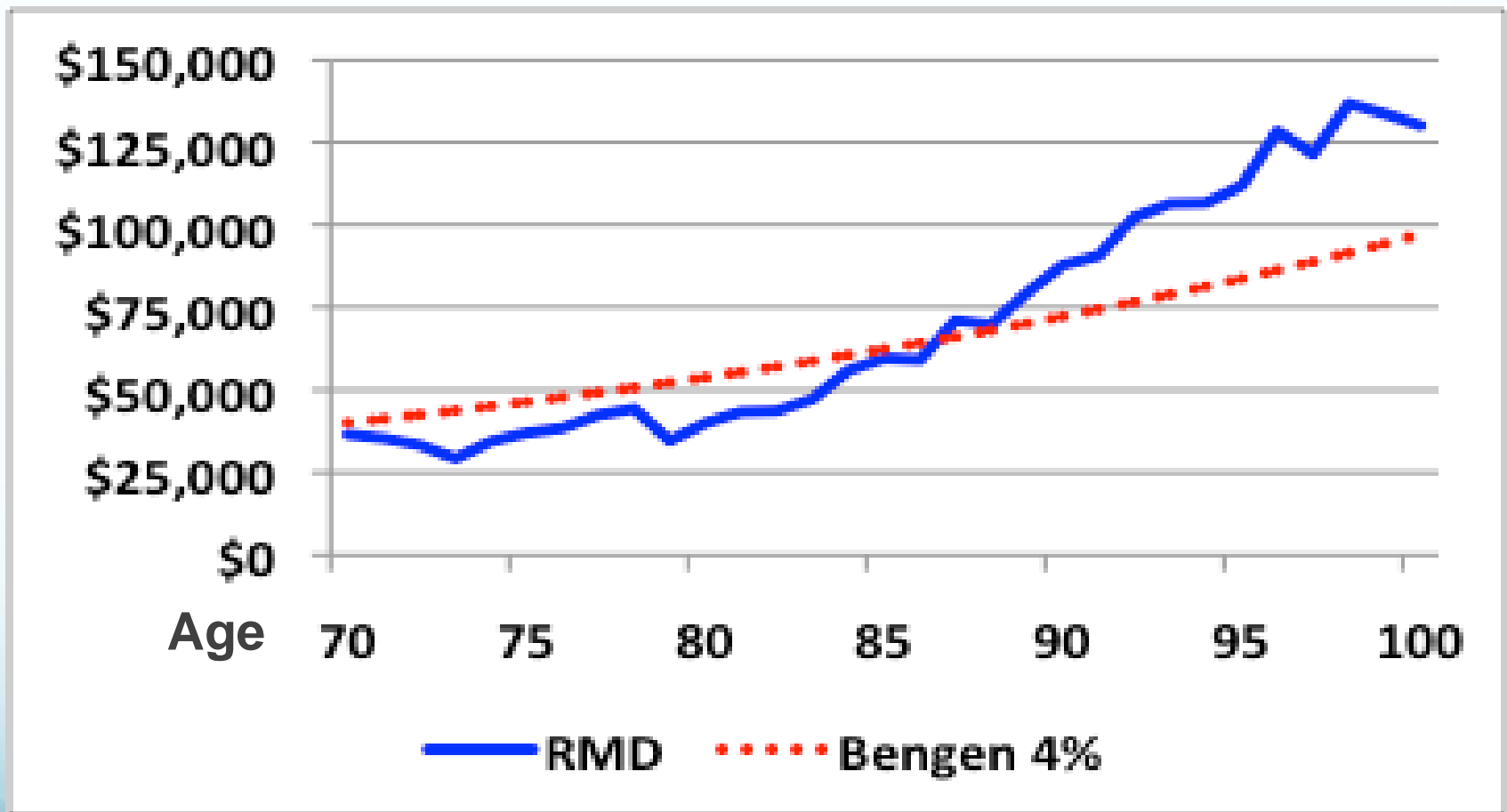


Portfolio Value

Favorable Conditions Starting in 1980

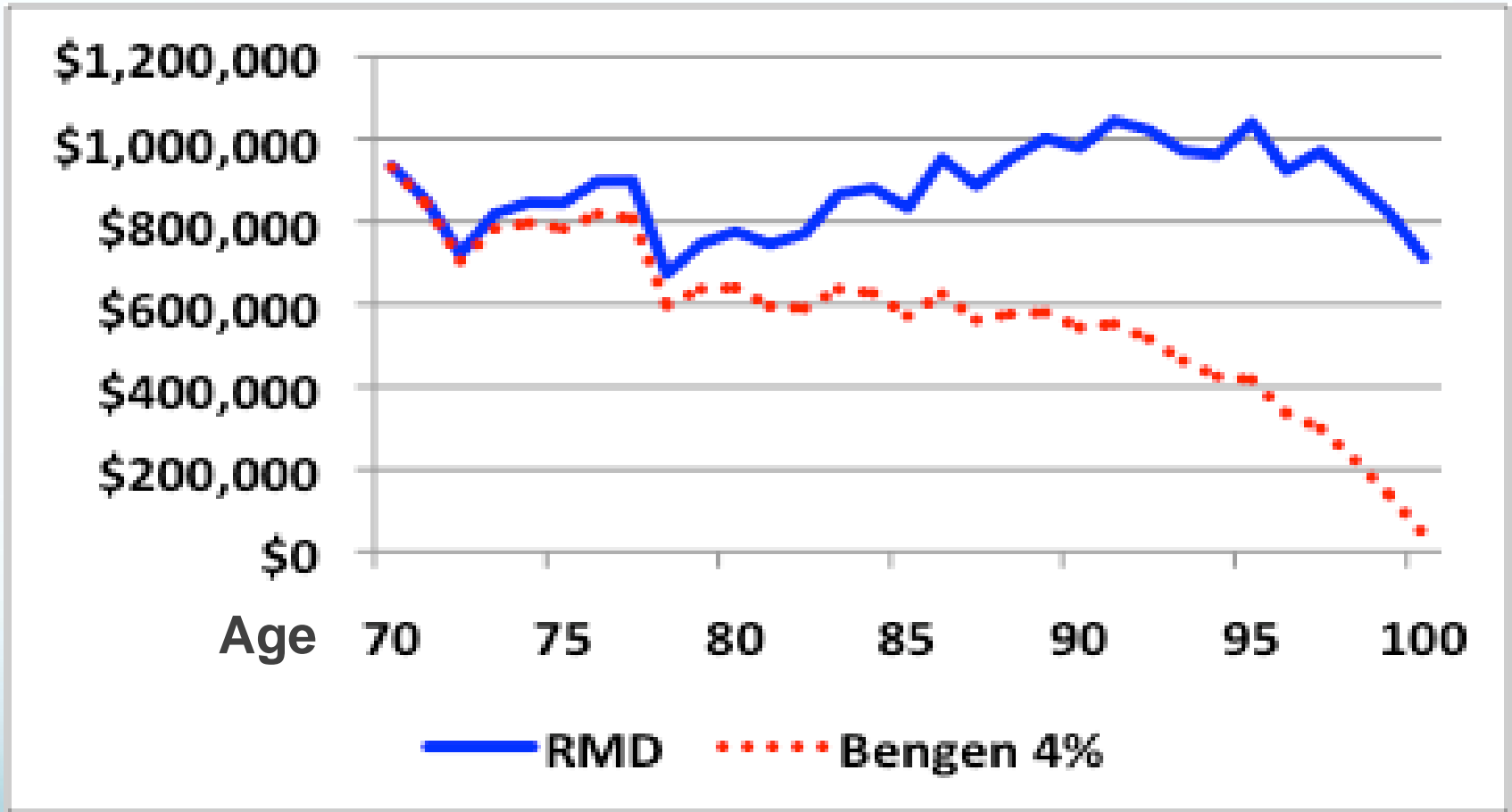


RMD and Bengen Withdrawals Unfavorable Conditions Starting in 2000



Portfolio Value

Unfavorable Conditions Starting in 2000



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- **>>> Bucket strategies**
- **Equity glide paths**

Simple Bucket Model

	<u>Bucket 1</u>	<u>Bucket 2</u>
Purpose:	Living expenses Inflation protection	Growth
Timeframe:	Short-term	Long-term
Assets:	Cash, CDs, T-bills MM funds, etc.	Diversified portfolio Stocks, Bonds, etc.

Simple Bucket Strategy

- **Every year ...**
 - ... Withdraw living expenses from Bucket 1**
 - ... Transfer 3% - 6% from Bucket 2 to Bucket 1**

May include: Interest and dividends

Proceeds from rebalancing

Proceeds from tax-loss harvesting

Sale of principal

Three Bucket Variation

- **Bucket 1: Short-term (1-2 years)**
 - Cash, Checking/savings accounts
 - Money market fund, T-bills, Short-term CDs, etc.
- **Bucket 2: Intermediate term (2-10 years)**
 - CD ladder, short/intermediate-term bonds, etc.
 - High quality dividend paying stocks
- **Bucket 3: Long-term (>10 years)**
 - Diversified long-term portfolio
 - Stocks, long-term bonds, etc.

Funnel View

* Long-term diversified portfolio (10+ years) *

* \$\$\$\$\$ *

* Intermediate-term portfolio (5 yrs) *

* \$\$\$ *

* Short-term account (1 yr) *

* \$ *

* \$ *

* \$ *

\$

Constant Percentage Strategy

- **Typical mechanical approach**
 - Transfer say 3-5% annually of Bucket 3 to Bucket 2
 - Transfer say 20% annually of Bucket 2 to Bucket 1
 - Withdraw monthly living expenses from Bucket 1
- **Easy to implement**
- **May require selling from Bucket 3 in down market**

Setting Up a Bucket Strategy

- **Estimate “paycheck” needs**
 - Living expenses less Social Security, pension, etc.
- **Select a bucket management strategy**
 - Pick a sustainable withdrawal rate
- **Create and fund buckets**
 - Buckets 1, 2 and 3 (1-2yrs, 2-10yrs and 10+ yrs)
- **Document the plan**
- **Monitor progress annually**

Standby Reverse Mortgage and Your Bucket Strategy

- Consider integrating a Home Equity Conversion Mortgage (HECM) line of credit into your bucket strategy
- Use a smaller short-term bucket to minimize “dead money” in today’s environment, plus a HECM line of credit to supplement it for emergencies
- Also use the HECM to avoid selling assets in a bear market
 - Borrow against HECM line of credit in down markets
Repay in bull market

Overview

- **Bengen's Four Percent Rule**
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- **>>> Equity glide paths**

Equity Glide Paths for Your Retirement Portfolio

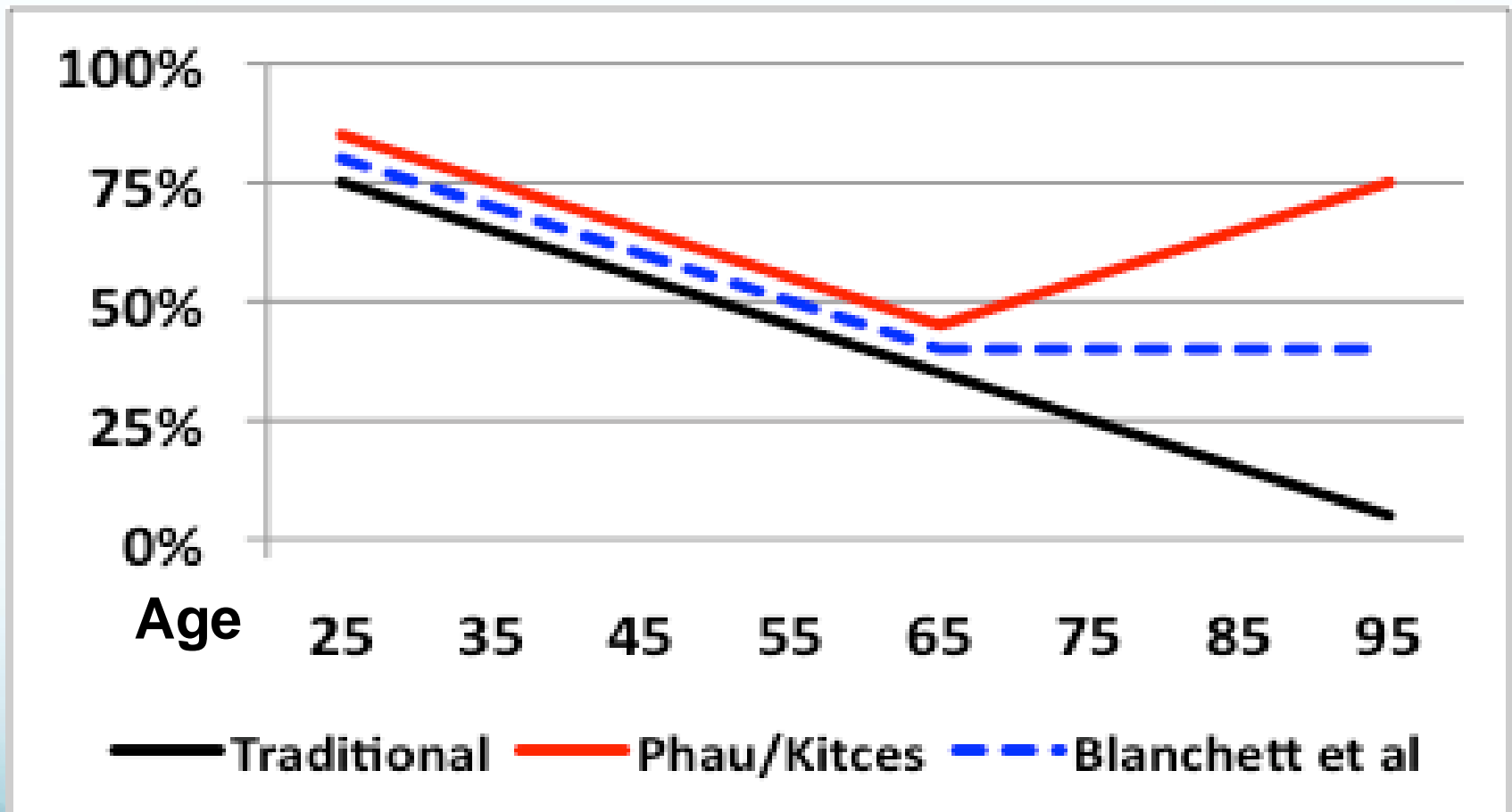
- **Traditional glide path**
 - “Age in fixed income”, Balance in equities
 - Declining equity glide path thru accumulation and decumulation phases

<u>Age</u>	<u>Fixed Income</u>	<u>Equities</u>
25	25%	75%
45	45%	55%
65	65%	35%
85	85%	15%
95	95%	5%

Recent Research

- **Retirees face maximum risk on retirement day**
 - Longevity risk (30-40 years)
 - Sequence of return risk
 - Lowest allocation to stocks
- **Pfau and Kitces (2014)**
 - V-shaped equity glide path
 - High early in career, 80%-100%
 - Lowest on retirement day, most vulnerable, 20%-40%
 - Increasing thereafter as we age, 60%-80%
- **Blanchett (2015)**
 - Optimum glide path depends on initial environment

Equity Glide Paths



Personal Philosophical Question

- **Two approaches to funding your retirement**
 - **Probability-based approach**
 - Diversified portfolio of “risky” assets
 - Withdraw X% annually to fund living expenses
 - Accept some probability of success, risk of failure
 - **Safety-first approach**
 - Fund essential expenses with “risk-free” investments
 - Fixed maturity date bond ladder
 - Annuity
 - Fund discretionary expenses with more volatile investments; greater upside, but also downside risk
- **Subjective tradeoff: Current live-style versus safety**

When Does “Safety-First” Trump Current Lifestyle?

- Picking too high a withdrawal rate may necessitate reducing your withdrawals significantly to avoid running out of money
- Picking too low a withdrawal rate could mean that you end up with a significant unintended portfolio surplus when you die, while missing out on lifestyle when alive
- Review your Personal Investor Profile (PIP) and Investment Policy Statement (IPS) to determine where you stand

Parting Thoughts

- There is no rule to satisfy an optimum withdrawal stream from a retirement portfolio of volatile assets with unknown expected returns for an indeterminate period.
- The future may be very different to the past
- There is no such thing as a “safe withdrawal rate”
 - “Safe” means “Safe **as far as we can tell**”
- Be conservative initially, more aggressive later
- Consider a longevity annuity starting at age 85
- Stay flexible; Review your plan regularly.

Summary

- **Safe Withdrawal Rates from your Retirement Portfolio**
 - Bengen's 4% rule
 - Variations on Bengen's Rule
 - RMD method
 - Bucket strategies
 - Equity glide paths
- **This is the last of 3 workshops on Retirement Planning**

Next Month We will Cover

- **Social Security Claiming Strategies**
 - Full retirement age
 - Early retirement, Late retirement
 - Simple claiming strategies for singles
 - File and Suspend
 - Strategies for married couples
 - Claim some now, more later
 - Effect of the Bipartisan Budget Act of 2015
- **Medicare**
 - Myths and reality

Before Next Month's Workshop

- Review your retirement plan
- For those already retired ...
 - How did the equity markets behave for the first few years of your retirement?
 - Have you had to adjust your withdrawal rate?
 - Do you use a bucket strategy? Is it written down?
 - How do you feel about rising equity glide paths?

Further Reading

- Charles Rotblut, “The Sequence in Which Returns Occur Affects Your Wealth”, AAll Journal, May 2015
- William P. Bengen, “Determining Withdrawal Rates Using Historical Data”, Journal of Financial Planning, October 1994
- William P. Bengen, “How Much Is Enough?”, Financial Advisor Magazine, May 2012
- Phillip I. Cooley, Carl M. Hubbard and Daniel T. Walz, “Retirement Savings: Choosing a Withdrawal Rate That Is Sustainable”, AAll Journal, February 1998 (Trinity study)
- Jonathan T. Guyton and William J. Klinger, “Decision Rules and Maximum Initial Withdrawal Rates”, Journal of Financial Planning, March 2006
- Craig Israelsen, “The Mathematics of Retirement Portfolios”, AAll Journal, January 2016
- Maria Scott Crawford, “Finding the Right Withdrawal Rate: One Key to Portfolio Sustainability”, AAll Journal, July 2012
- David Blanchett, Marciej Kowara and Peng Chen, “Optimal Withdrawal Strategy for Retirement Income Portfolios”, Morningstar, September 2012

Further Reading continued

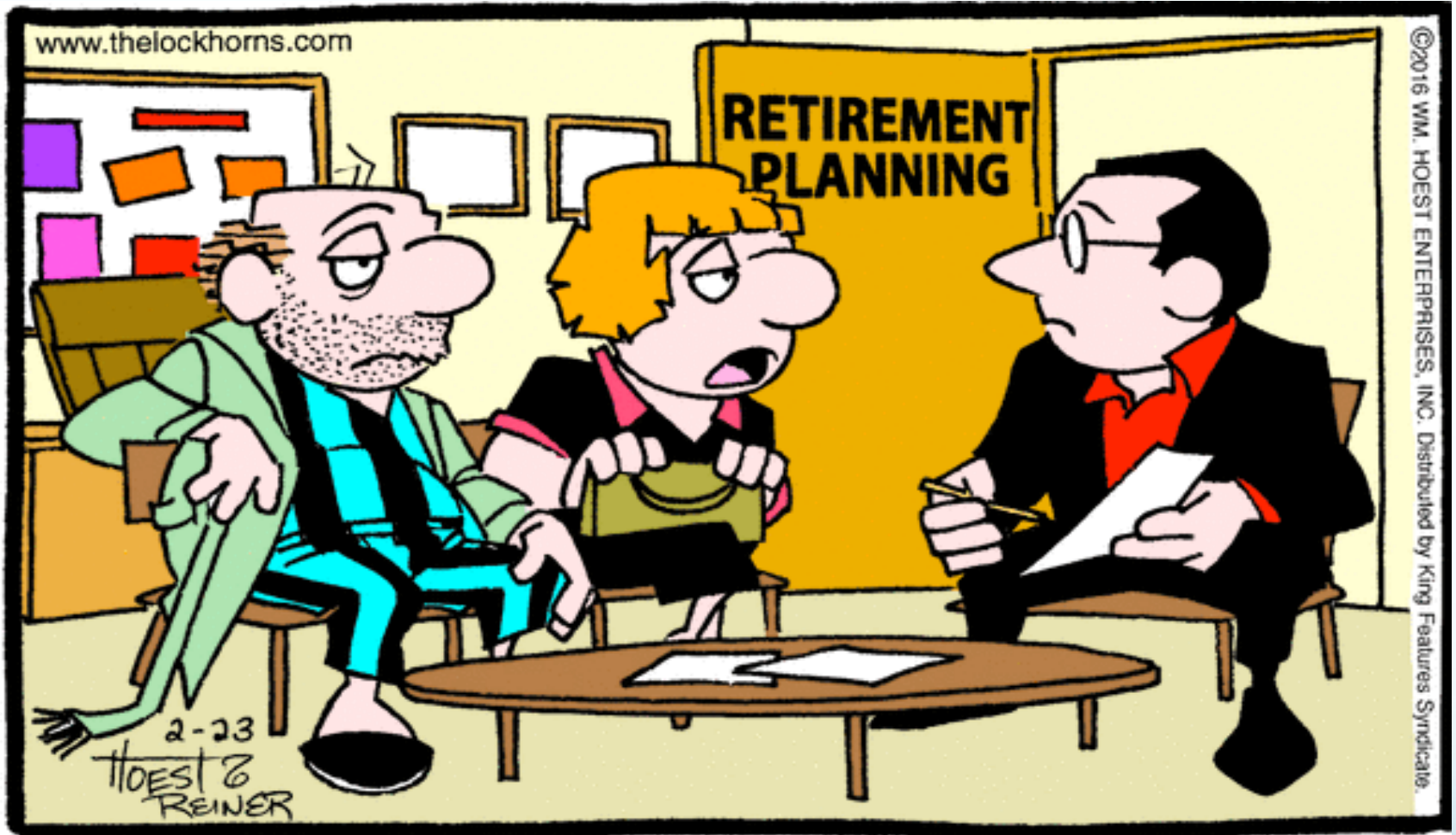
- **Wade Pfau and Wade Dorken, “Why 4% Could Fail”, Financial Advisor Magazine, September 2015**
- **William Sharpe, “The X% Rule”, Retirement Income Scenarios blog, December 2013**
- **Wei Sun and Anthony Webb, “Retirement Withdrawals: Can You Base Them on RMDs?”, AAll Journal, December 2012**
- **Colleen Jaconetti et al, “A More Dynamic Approach to Retirement Spending”, AAll Journal April 2014**
- **Christine Benz, “Using the Bucket Approach With Your Retirement Portfolio”, AAll Journal, October 2013**
- **John Salter, Shaun Pfeiffer and Harold Evensky, “Standby Reverse Mortgages: A Risk Management Tool for Retirement Distributions”, Journal of Financial Planning, August 2011**
- **David M. Cordell and Thomas P. Langdon, “Hedging Longevity Risk for Worry-Free Retirement”, Journal of Financial Planning, May 2013**

Further Reading continued

- **Wade D. Pfau and Michael E. Kitces, “Reducing Retirement Risk with a Rising Equity Glide Path”, Journal of Financial Planning, January 2014**
- **Michael Kitces and Wade Pfau, “Reduce Stock Exposure in Retirement, or Gradually Increase It?”, AAll Journal, April 2014**
- **Michael Kitces and Wade Pfau, “Retirement Risk, Rising Equity Glide Paths, and Valuation-Based Asset Allocation, Journal of Financial Planning, March 2015**
- **Michael Kitces and Wade Pfau, “Increasing Retirement Withdrawal Rates Through Asset Allocation”, AAll Journal, April 2015**
- **Luke Delorme, “Mathematical Support for Rising Equity Glide Paths”, AAll Journal, September 2015**
- **David Blanchett, “Initial Conditions and Optimal Retirement Glide Paths”, Journal of Financial Planning, September 2015**
- **David Blanchett, “Exploring the Optimal Equity Allocation path for Retirees”, AAll Journal, December 2015**

Useful Websites

- www.aaii.com Broad selection of financial planning material
- www.siliconvalleyaaii.org Previous presentations on various topics
- [www.santaclaracountylib.org/Adults/Business & Money](http://www.santaclaracountylib.org/Adults/Business%20&%20Money)
- www.RetirementIncomeScenarios.blogspot.com Bill Sharpe
- www.investopedia.com
- www.bogleheads.org
- www.obliviousinvestor.com/index-funds/ Mike Piper blog
- www.rickferri.com/investment-philosophy/ Rick Ferri
- blogRetirementIncomeScenarios.blogspot.com Bill Sharpe



"LEROY HAS A CERTAIN LIFESTYLE HE WANTS TO MAINTAIN."