

**Silicon Valley Chapter
American Association of Individual Investors**

Fred's Financial Planning Workshops
Investing ... Part 1

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Silicon Valley Chapter

American Association of Individual Investors

Please check us out!

- Chapter website: www.siliconvalleyaaii.org
- Meetups: www.meetup.com/AAII-Silicon-Valley-Meetup
- Facebook: www.facebook.com/sv.aa
- YouTube Channel

www.youtube.com/channel/UC4GepcU8lzx8rZMaWNBeJtA

- AAI National website: www.aaii.com
- My email address: fred.svaaii@gmail.com

Our Next Event and Special Interest Group Webcasts

- **Estate Planning: James Ward**
 - Saturday October 10th at 9:00am; webcast only
- **Investing Discussion Group**
 - Lynn Gillette: Fourth Monday of each month at 6:30pm
- **Computerized-Mechanical Investing Group**
 - Bill Paseman, Don Mauer: First Thursday of each month at 6:30pm
- **Financial Planning Discussion Group**
 - Fred Smith: Second Wednesday of each month at 6:30pm
- **Fintech/Realtech Discussion Group**
 - Roland Chow: To be determined.

Financial Planning Workshops

We cover a full range of topics in the cycle:

- **Financial Planning ... The Big Picture**
- **Investing I: Modern Portfolio Theory, Building a diversified portfolio**
- Investing II: Efficient Market Hypothesis; Can you beat the market?
- Taxes: TRJA, SECURE Act, Tax diversification, Asset location, QCDs
- Retirement Planning I: Tax-advantaged plans, RMDs
- Retirement Planning II: Safe withdrawal rates, Bengen's 4% rule
- Risk Management/Insurance: Annuities, Long-term care, Litigation
- Social Security and Medicare: Claiming strategies, Medicare traps
- Estate Planning: Probate, Executor/trustee duties, Philanthropy
- Wrap-up: Case study reviewing previous material

Overview for Today's Workshop

- The 5-step investing process
- Asset class characteristics
- Modern Portfolio Theory
- Building simple multi-asset portfolios

The 5-Step Investing Process

1. Define your Personal Investor Profile
2. Document your Investor Policy Statement
3. Design your personalized portfolio
4. Implement your portfolio
5. Review and rebalance periodically

First know thyself !

- *“If you don’t know who you really are,
the stock market is an expensive place to find
out.”*

Adam Smith (1722 – 1790)

1. The Personal Investor Profile, PIP

- **Who am I?**
 - Age, Marital status, Retired, Mortgage etc.
- **Time horizon?**
 - Short-term goals, long-term goals
- **Risk tolerance?**
 - Eat well versus sleep well decision
 - Questionnaires at Schwab, Vanguard, Fidelity, etc.
- **Income needs?**

Need to generate income, capital gains
- **Tax status?**
 - FIT and SIT brackets, AMT status

Techniques to Control Risk

- **Diversification of asset classes**
 - Cash / Bonds / Stocks
 - Domestic / International
- **Tax diversification**
 - Taxable, tax-deferred and tax-free accounts
- **Time diversification**
 - Dollar cost averaging
 - Value averaging

Dollar Cost Averaging

- Invest a fixed \$ amount at equal periods

<u>Month</u>	<u>\$Amt</u>	<u>SharePr</u>	<u>#Shares</u>	<u>TotalSh</u>	<u>TotalVal</u>
1	\$1000	\$10	100	100	\$1000
2	\$1000	\$9	111	211	\$1899
3	\$1000	\$8	125	337	\$2696
4	\$1000	\$10	100	437	\$4370
5	\$1000	\$12	83	520	\$6240
6	<u>\$1000</u>	<u>\$11</u>	<u>91</u>	611	\$6721
Total	\$6000	\$10.00	611		

Average cost of purchased shares = $\$6000/611 = \9.83

Value Averaging

- Adjust balance each period to target value

<u>Month</u>	<u>\$Amt</u>	<u>SharePr</u>	<u>#Shares</u>	<u>TotalSh</u>	<u>TotalVal</u>
1	\$1000	\$10	100	100	\$1000
2	\$1100	\$9	122	222	\$2000
3	\$1224	\$8	153	375	\$3000
4	\$250	\$10	25	400	\$4000
5	\$200	\$12	17	417	\$5000
6	<u>\$1413</u>	<u>\$11</u>	<u>128</u>	545	\$6000
Total	\$5187	\$10.00	545		

Average cost of purchased shares = $\$5187 / 545 = \9.52

Typical Life Cycle Investing

	Early Career	Mid Career	Late Career	Early Retrmnt	Late Retrmnt
Time Horizon	Long	Long	Long	Long	Medium
Risk Tolerance	High	High	Medium	Low	Low
Income Needs	No	No	No	Yes	Yes
Tax Status	Low	Medium	High	Medium	Low

2. The Investment Policy Statement, IPS

- **Outlines the general philosophy and objectives for managing the portfolio**
- **Sets the rules and limitations**
- **Defines the asset classes to be used and the broad asset allocation**
- **Decision on asset location**
- **Limits on tactical deviations for market conditions**
- **Documents the rebalancing strategy**
- **Spells out any prohibitions, e.g. no derivatives**

Can you Summarize Your IPS on an Index Card?

- **Example: Christine Benz, Morningstar**
 - Favor equity funds but gradually enlarge bond positions as retirement approaches
 - Hold cash and municipal-bond funds for near-term expenditures
 - Check up once a year; rebalance if asset allocation is +/- 10% off target allocation
- **Ten words or less: Fred Smith**
 - Build a diversified portfolio of cheap index funds; Rebalance annually.

3. Design Your Personalized Portfolio

- **Research the asset classes defined in your IPS**
 - Example: Which specific funds do you prefer to track U.S. stocks? Real estate? Emerging market?
 - Lowest cost? Least tracking error?, etc.
- **Asset allocation**
 - Pick an allocation to match your risk tolerance
- **Asset location**
 - Decide which funds belong in which accounts
 - Fixed income funds in tax-deferred retirement accounts
 - Risky hi-growth funds in tax-free Roth accounts
 - Remaining funds in taxable accounts

Asset Location: Traditional Portfolio

Rebalance each account separately

	Traditional IRA, 401(k), etc.	Regular account	Roth IRA
Fixed Income	30%	30%	30%
Conserv. stocks US stocks	50%	50%	50%
Hi-growth stocks Intl. Stocks	20%	20%	20%
Tax status Distributions	Tax-deferred Gains taxed as Ord.Income	Taxable Gains taxed as Cap.Gain	Tax-free No taxes

Asset Location: Household Portfolio

Rebalance total portfolio

	Traditional IRA, 401(k), etc.	Regular account	Roth IRA
Fixed Income	30%	-	-
Conserv. Stocks US stocks	-	50%	-
Hi-growth stocks Intl. stocks	-	-	20%
Tax status Distributions	Tax-deferred Gains taxed as Ord.Income	Taxable Gains taxed as Cap.Gain	Tax-free No taxes

4. Implement Your Portfolio

- Execute the trades to implement the portfolio for each account
- Accounts may be at different financial institutions
 - Traditional IRAs and Roth IRA at Vanguard
 - Taxable account at Schwab, etc.
- Execute all trades ...
 - ... immediately
 - ... or Dollar cost average
 - ... or Value average

5. Review and Rebalance

- Follow the review strategy defined in your IPS
- For a passive portfolio ...
 - ... calendar driven
 - ... or threshold driven
- For an active portfolio ...
 - ... may be necessary to monitor weekly or even daily
 - ... execute trades as spelled out in your IPS
- Have you met the return projection and risk level defined in your IPS?

Rebalancing Your Portfolio

- **Rebalancing is necessary to reduce risk**
- **Most helpful when it is most difficult**
Opposite of “Feed the winners and starve the losers”
- **Periodic or calendar driven: Rebalance annually**
Rebalancing more often is not useful
- **Threshold or data driven: Rebalance as necessary**
Check monthly or quarterly, but only rebalance when an actual asset allocation deviates from its strategic value by more than a predetermined amount, say 10% of the strategic value.

Practical Aspects of Rebalancing

- **Use cash flows into or out of portfolio to rebalance**
e.g. monthly contributions, withdrawals, RMDs, etc.
- **Do not reinvest dividend distributions**
Let dividends accumulate in money market account, then use this to make rebalancing purchases
- **Many retirement plans offer automatic rebalancing**

Asset Classes

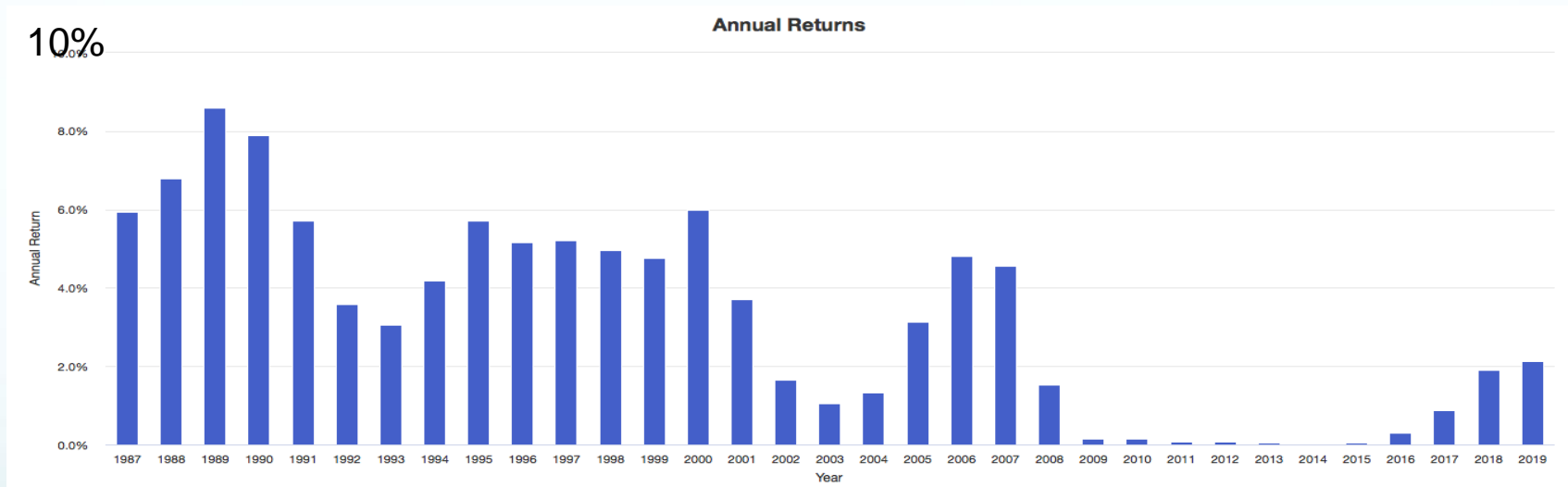
- **Fixed income**
 - Cash and cash equivalents
 - Bonds
- **Equities**
 - Domestic stocks
 - International stocks
- **Alternative investments**
 - Real estate investment trusts (REITs)
 - Commodities
 - etc.

The Brinson Study

- **1986 Study by Gary Brinson et al., Updated 1991**
Survey of 82 major pension funds
- **Contributions to variance in portfolio performance**
 - >91% Investment policy decisions**
i.e. deciding on asset classes and weights
 - <5% Security selection within asset class**
i.e. stock picking
 - <2% Market timing**

Cash (1987-2019)

portfoliovisualizer.com

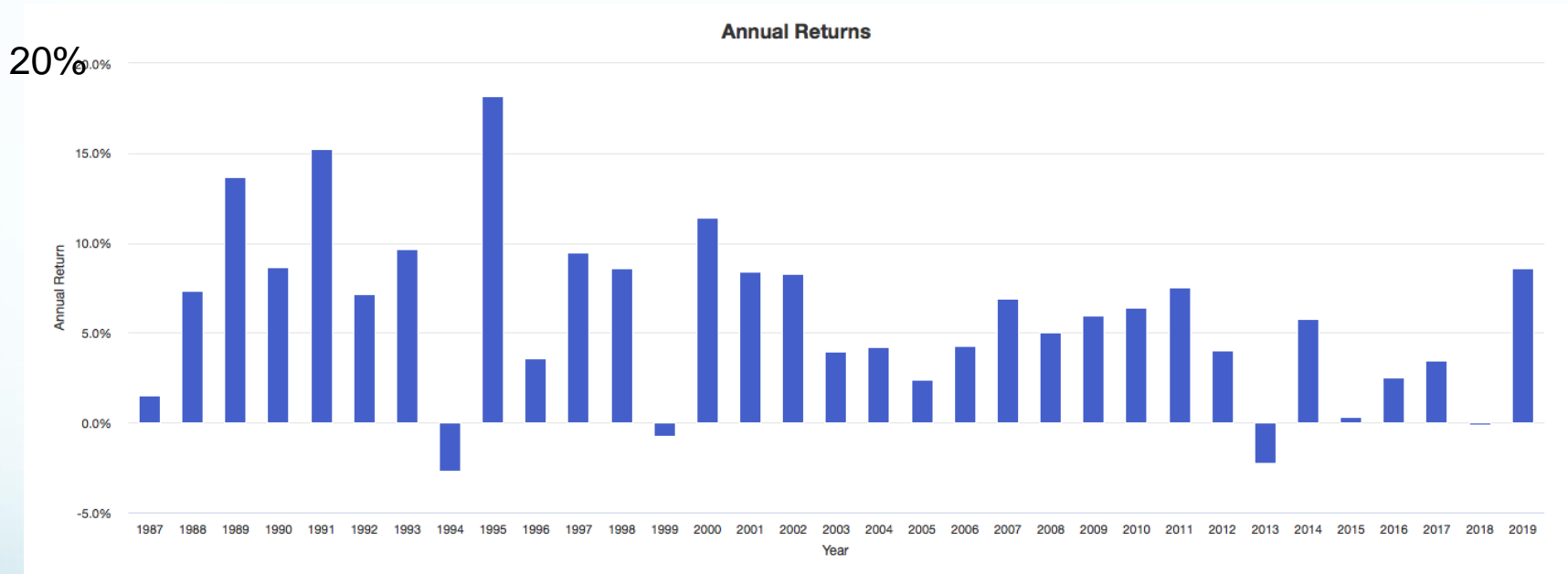


Characteristics for Cash and Cash Equivalents (1987-2019)

- **Low return**
Compound Annual Growth Rate = 3.2%
- **Low risk**
Standard deviation = 0.72%
- **Sharpe ratio = N/A**
- **Best year: 8.61% (1989)**
- **Worst year: 0.03% (2014)**
- **Number of down years: 0/33**

Total U.S. Bond Market (1987 – 2019)

portfoliovisualizer.com

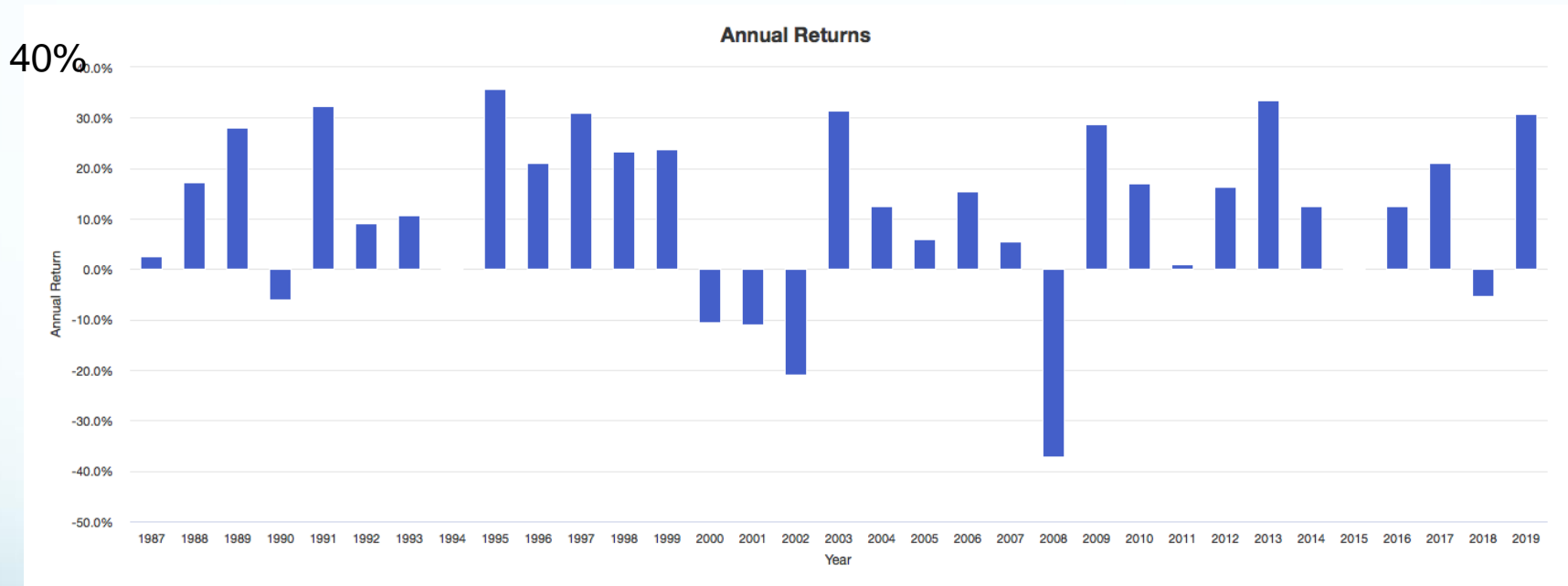


Characteristics for Total Bond Market (1987-2019)

- **Higher return than cash**
Compound Annual Growth Rate = 5.9%
- **Higher risk**
Standard deviation = 3.8%
- **Sharpe ratio = 0.71**
- **Best year: 18.0% (1995)**
- **Worst year: -2.3% (2013)**
- **Number of down years: 4/33 = 12%**

Total U.S. Stock Market (1987 – 2019)

portfoliovisualizer.com



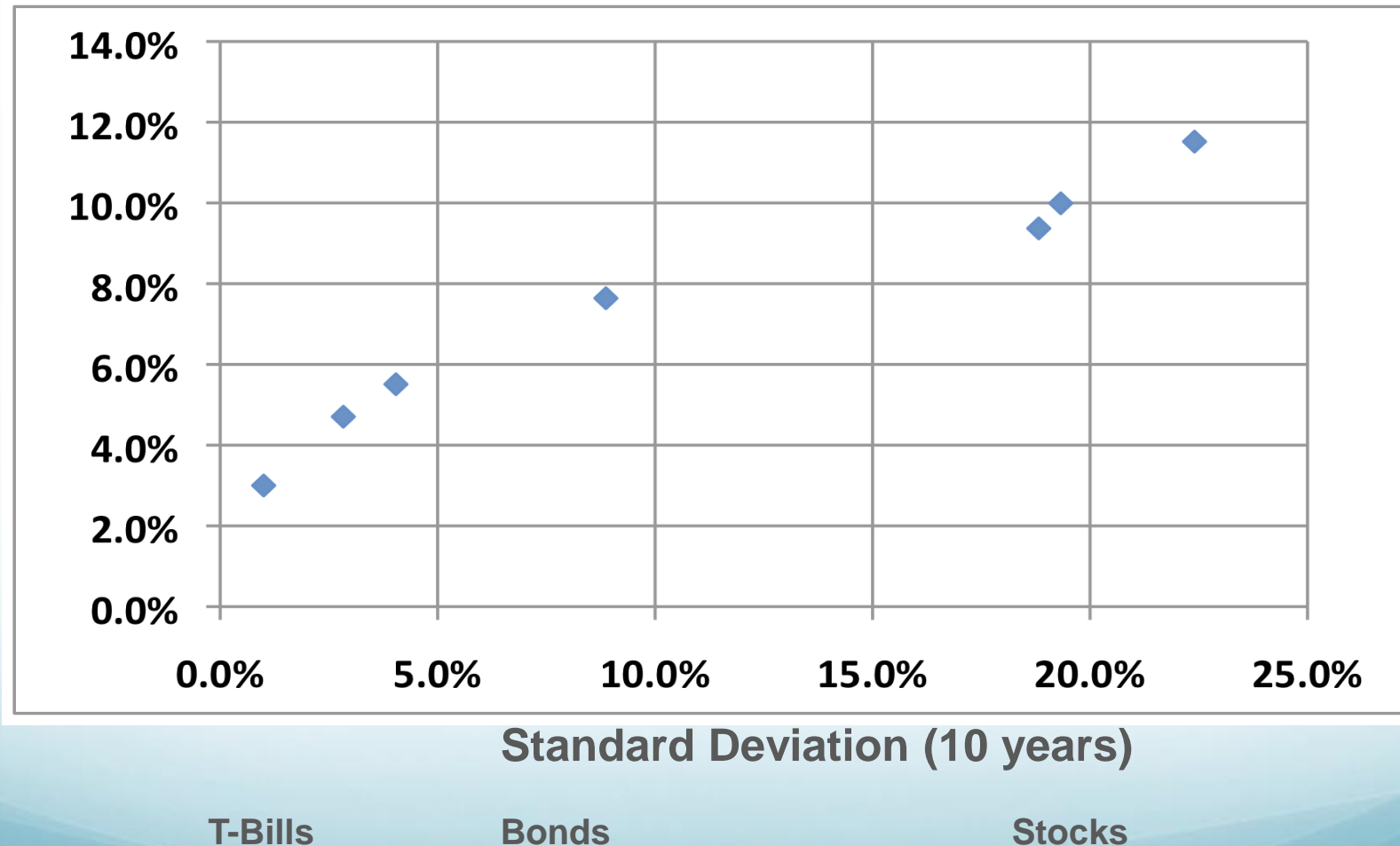
Characteristics for Total Stock Market (1987-2019)

- Higher return than cash or bonds
Compound Annual Growth Rate = 10.3%
- Significantly higher risk
Standard deviation = 15.0%
- Sharpe ratio = 0.53
- Best year: 35.8% (1995)
- Worst year: -37.0% (2008)
- Number of down years: 7/33 = 21%

Modern Portfolio Theory

- Theory on how risk-averse investors can construct a portfolio to maximize the expected return for a given level of market risk
- First formulated by Harry Markowitz in 1952
- Further developed by Bill Sharpe et al over the next two decades

Risk and Return are Correlated



The Third Dimension ... Correlation

- Total return, R
- Standard deviation, S
- Correlation, C

Measures how well two assets track each other

$C = 1$ for perfect tracking, i.e. zig and zag together

$C = 0$ for no correlation

$C = -1$ for perfect negative correlation

i.e. one asset zigs every time the other zags

Basic MPT Equations

- For a portfolio, P, with 2 risky assets, A and B with expected total returns R_A and R_B , and standard deviations S_A and S_B and correlation C_{AB} and weights W_A and W_B in the portfolio

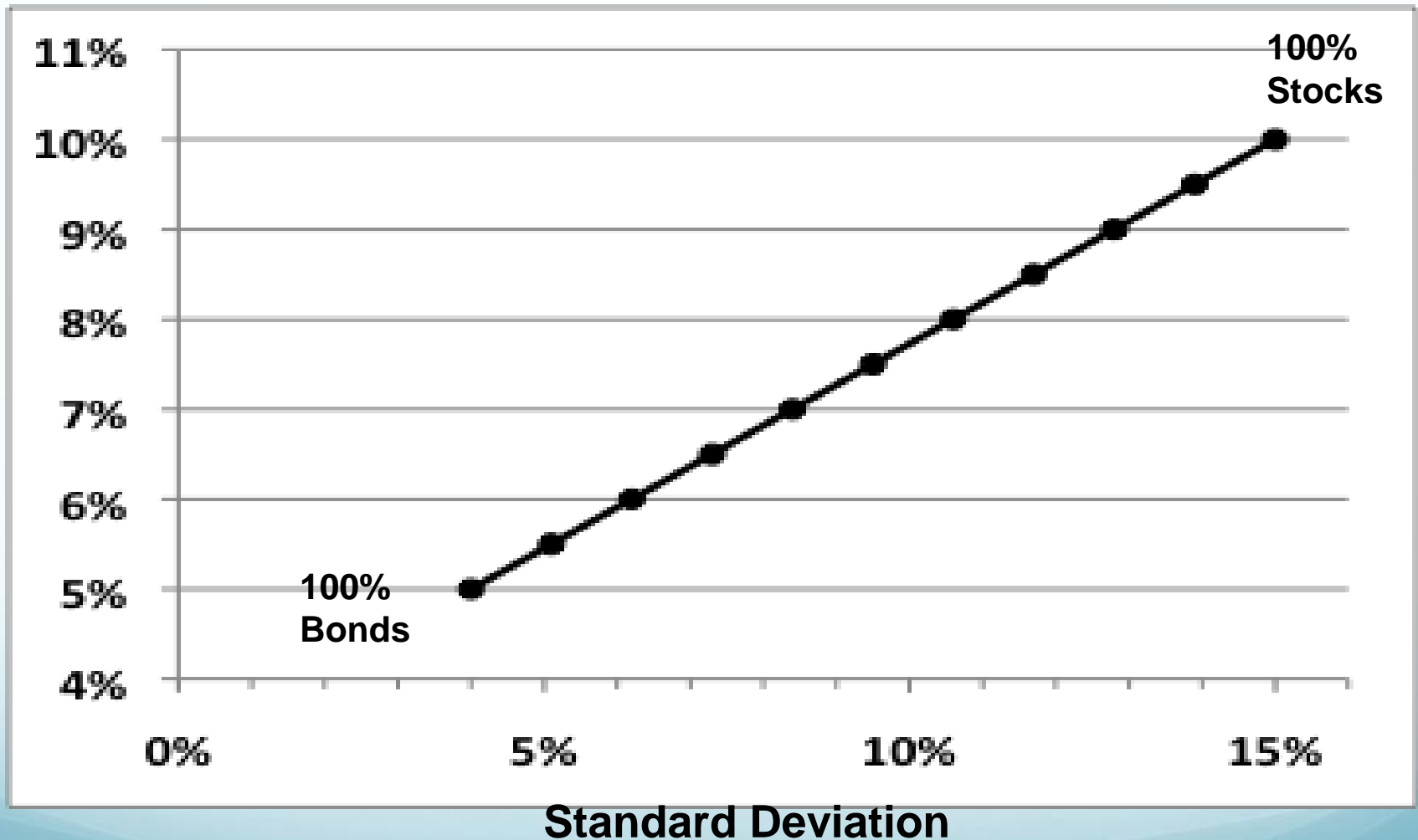
$$R_P = W_A \times R_A + W_B \times R_B$$

$$S_P = \text{SqRt}\{(W_A \times S_A)^2 + (W_B \times S_B)^2 + 2 \times W_A \times S_A \times W_B \times S_B \times C_{AB}\}$$

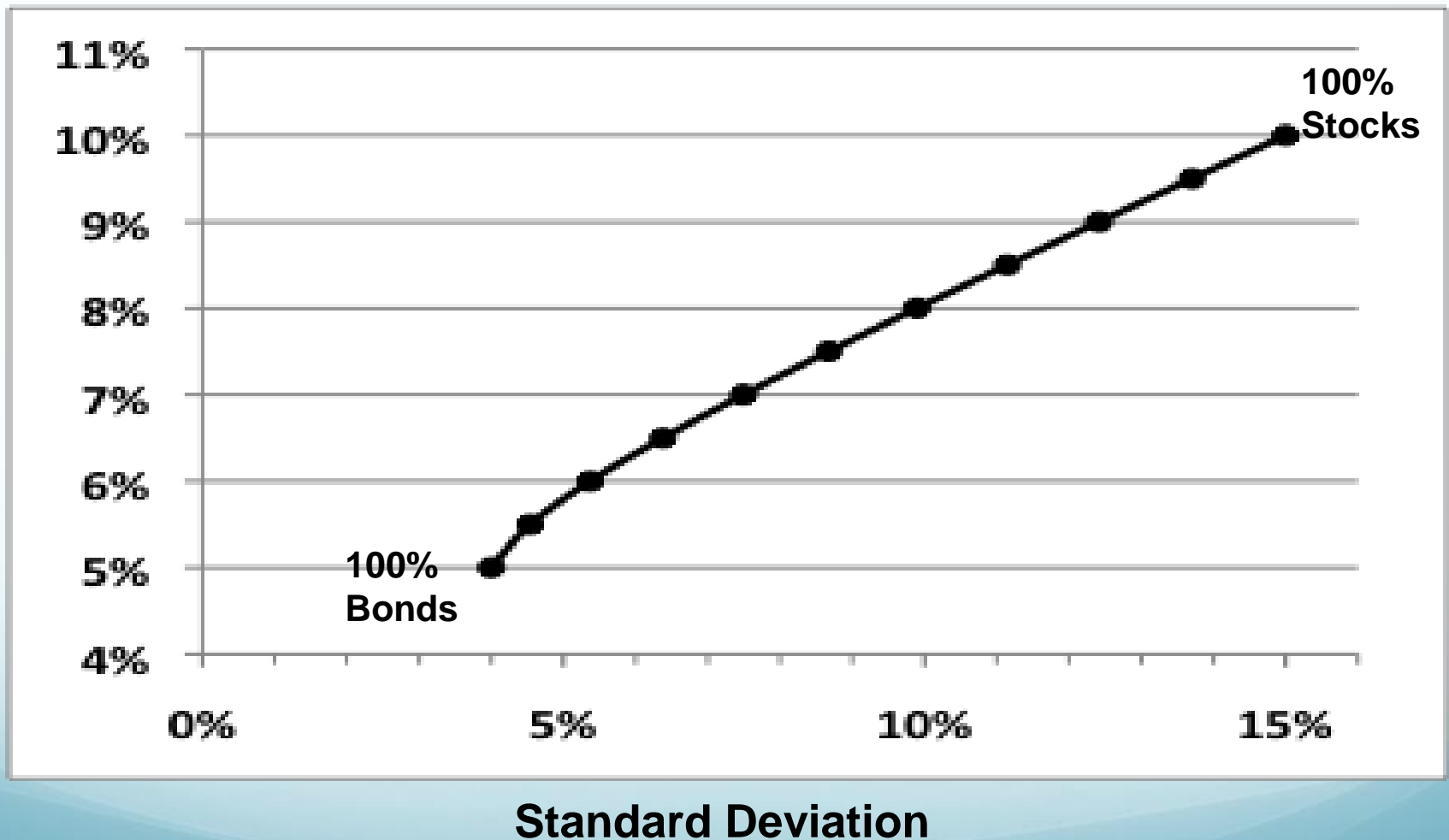
Simple Portfolio with 2 Risky Assets

- First asset (e.g. a bond fund)
 - Return = 5%
 - Standard deviation = 4%
- Second asset (e.g. a stock fund)
 - Return = 10%
 - Standard deviation = 15%
- Weights: Vary from 0, 10%, 20% ... 100%
- Correlation: Vary from +1.0, +0.5, 0, -0.5, -1.0

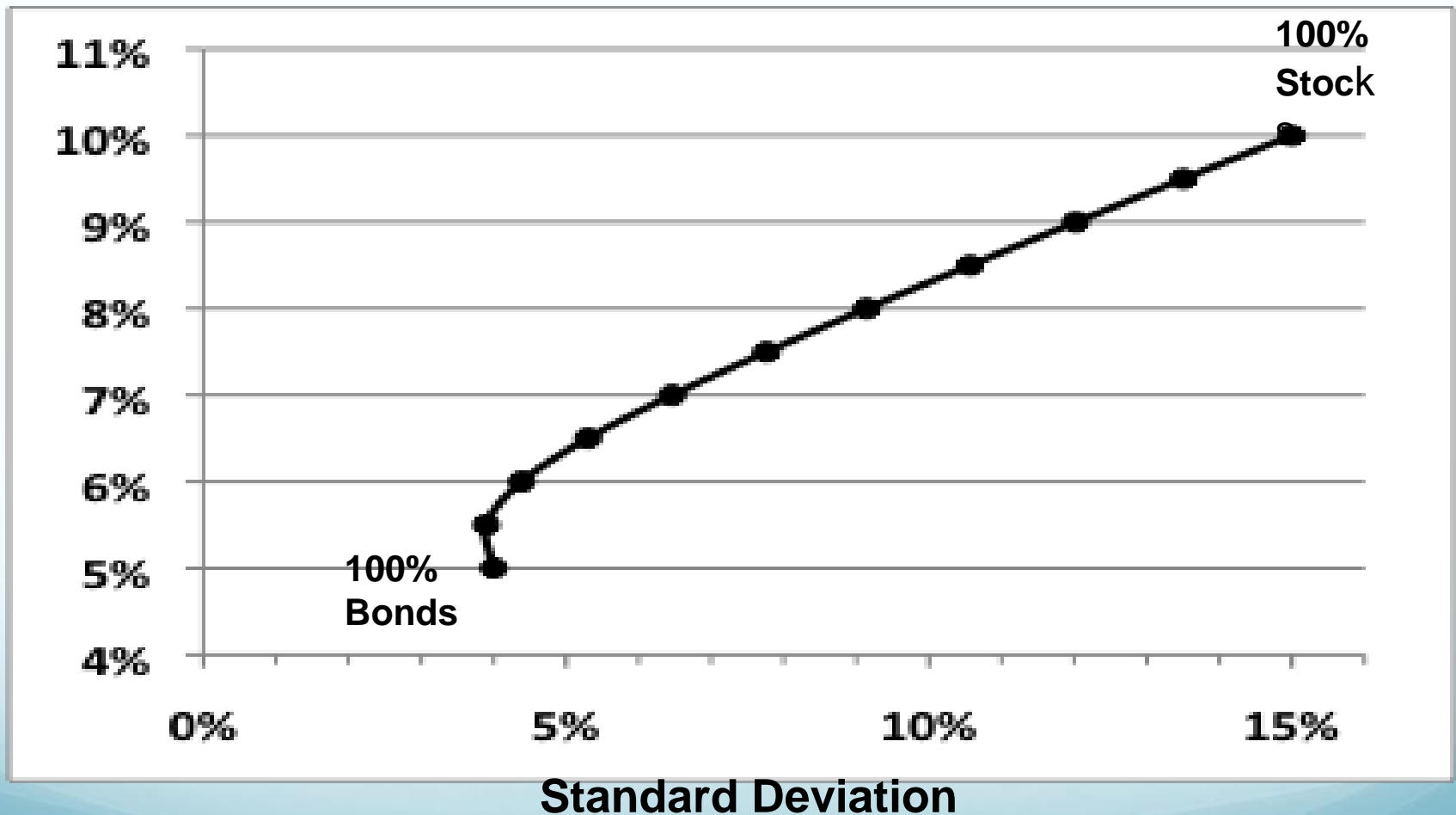
2 Assets: Correlation = 1.0



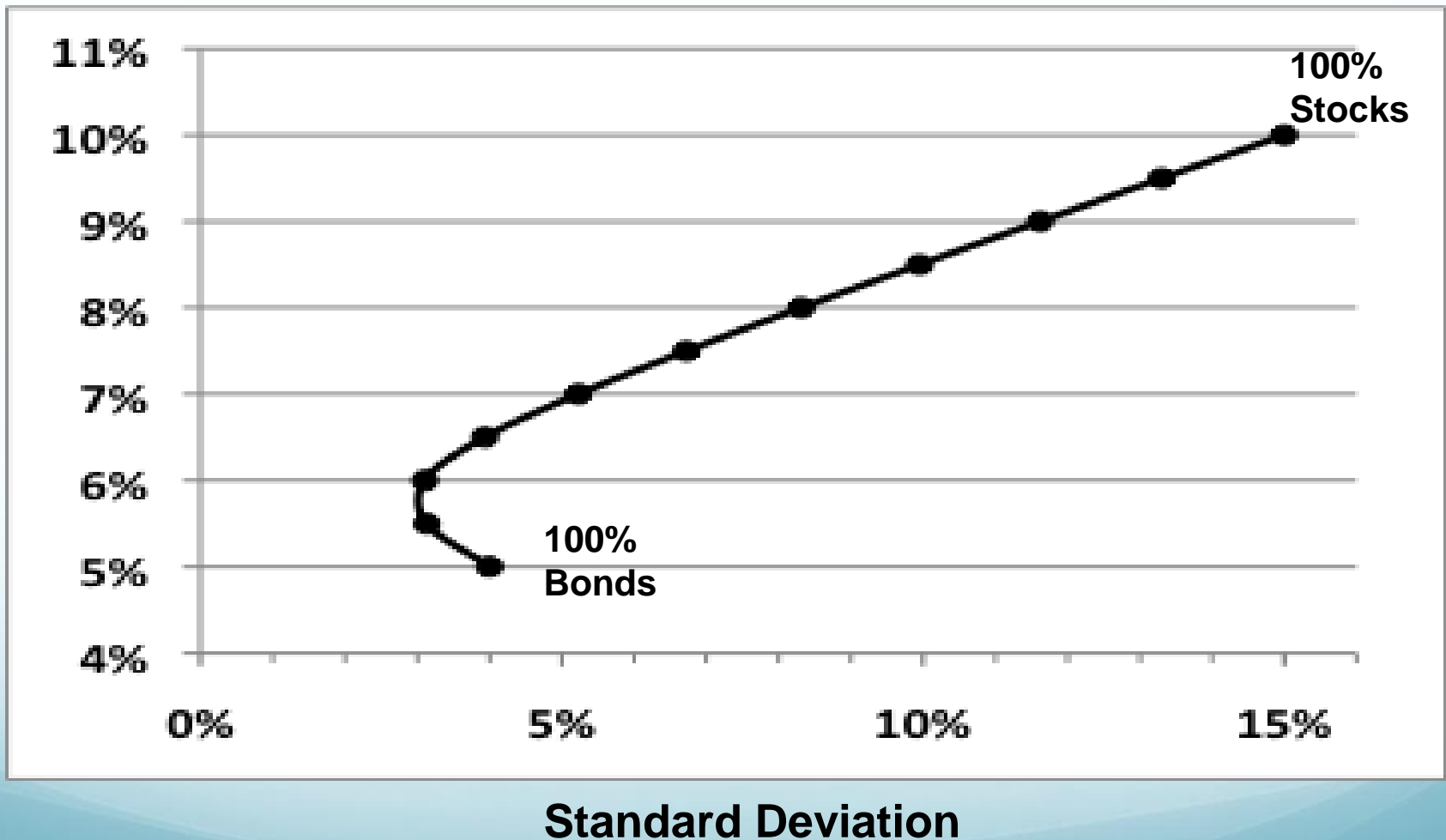
2 Assets: Correlation = 0.5



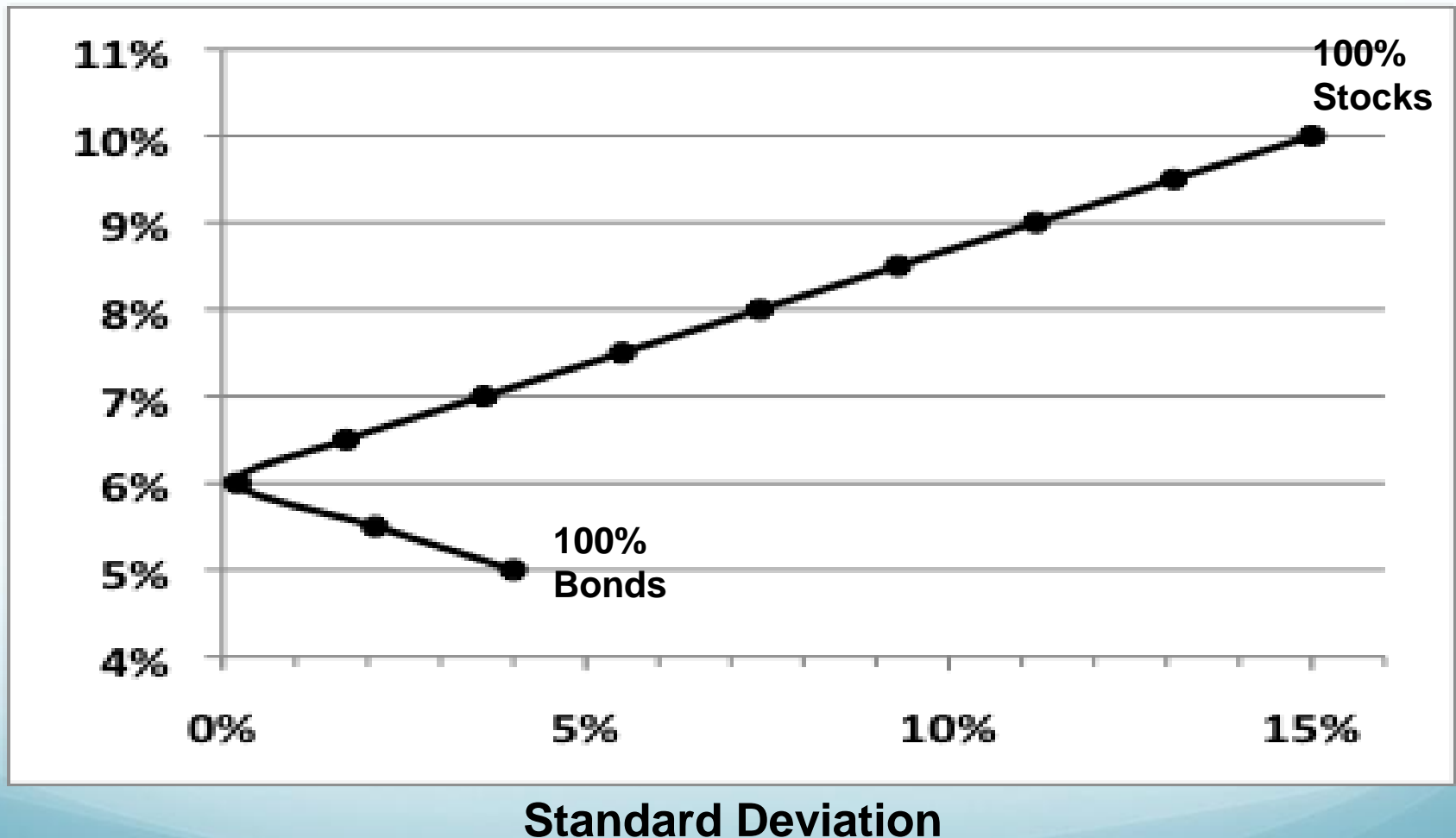
2 Assets: Correlation = 0



2 Assets: Correlation = -0.5



2 Assets: Correlation = -1.0

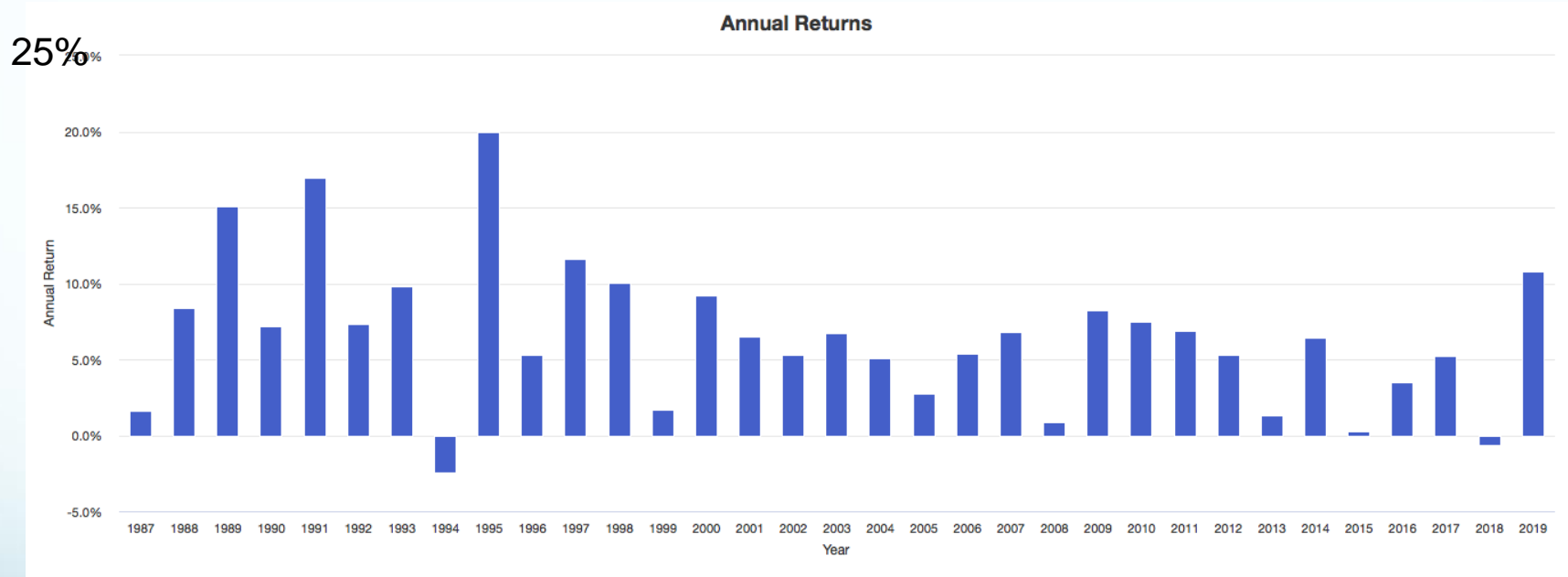


How Well Does MPT Work in Practice?

- Let's look at simple portfolios comprising the total US bond and stock funds we examined earlier
- **Portfolio 1**
 - 90% Total US bond fund
 - 10% Total US stock fund
- **Portfolio 2**
 - 30% Total US bond fund
 - 70% Total US stock fund

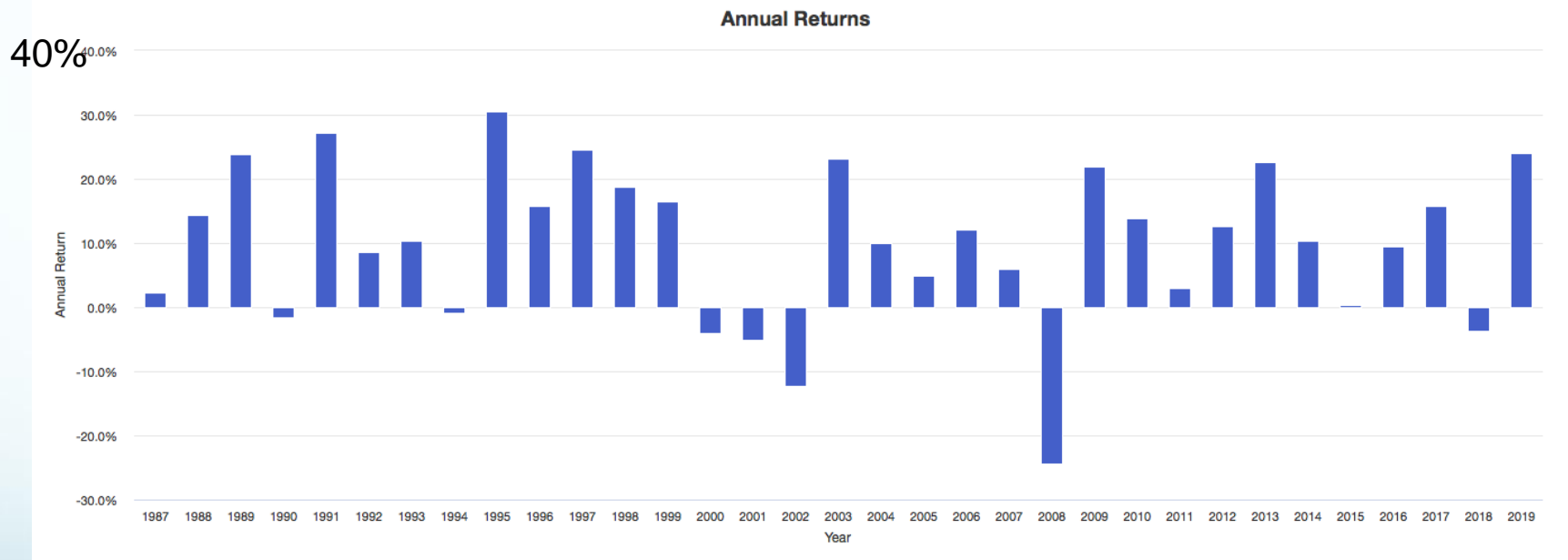
Simple 2-Asset Portfolio 1

90% Bond Market + 10% Stock Market



Simple 2-Asset Portfolio 2

30% Bond Market + 70% Stock Market



Characteristic data for Simple 2-Asset Portfolios (1987 – 2019)

	Bond Fund	Portfolio 1	Portfolio 2	Stock Fund
Weight Bnd/St	100%/0	90%/10%	30%/70%	0/100%
33yr CAGR	5.9%	6.4%	9.3%	10.3%
Std Deviation	3.8	3.8	10.6	15.0
Sharpe Ratio	0.71	0.85	0.60	0.53
US Mkt Corr.	0.06	0.45	0.99	1.00
Best Year	18.2%	19.9%	30.5%	35.8
Worst year	-2.7%	-2.4%	-24.4%	-37.0
# Down years	4	2	7	7

How Can We Diversify Further?

- **Replace Total US bond fund**
with short-term and intermediate term bonds
- **Replace Total US stock fund**
with large/small cap, value/growth index funds
- **Add real estate index, commodity index funds**
- **Add international index funds**
 - **Developed markets, emerging markets**

The Callan Periodic Table of Investment Returns

Annual Returns for Key Indices Ranked in Order of Performance (2000–2019)

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Real Estate	U.S. Fixed Income	Gbl ex-U.S. Fixed	Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate	Emerging Market Equity	U.S. Fixed Income	Emerging Market Equity	Small Cap Equity	U.S. Fixed Income	Real Estate	Small Cap Equity	Real Estate	Large Cap Equity	Small Cap Equity	Emerging Market Equity	Cash Equivalent	Large Cap Equity
13.84%	8.43%	22.37%	55.82%	37.96%	34.00%	42.12%	39.38%	5.24%	78.51%	26.85%	7.84%	27.73%	38.82%	15.02%	1.38%	21.31%	37.28%	1.87%	31.49%
U.S. Fixed Income	High Yield	U.S. Fixed Income	Small Cap Equity	Emerging Market Equity	Real Estate	Emerging Market Equity	Dev ex-U.S. Equity	Gbl ex-U.S. Fixed	High Yield	Real Estate	High Yield	Emerging Market Equity	Large Cap Equity	Large Cap Equity	U.S. Fixed Income	High Yield	Dev ex-U.S. Equity	U.S. Fixed Income	Small Cap Equity
11.63%	5.28%	10.26%	47.25%	25.55%	15.35%	32.17%	12.44%	4.39%	58.21%	19.63%	4.98%	18.23%	32.39%	13.69%	0.55%	17.13%	24.21%	0.01%	25.52%
Cash Equivalent	Cash Equivalent	Real Estate	Real Estate	Dev ex-U.S. Equity	Dev ex-U.S. Equity	Dev ex-U.S. Equity	Gbl ex-U.S. Fixed	Cash Equivalent	Real Estate	Emerging Market Equity	Gbl ex-U.S. Fixed	Dev ex-U.S. Equity	Dev ex-U.S. Equity	U.S. Fixed Income	Cash Equivalent	Large Cap Equity	Large Cap Equity	High Yield	Dev ex-U.S. Equity
6.18%	4.42%	2.82%	40.69%	20.38%	14.47%	25.71%	11.03%	2.06%	37.13%	18.88%	4.36%	16.41%	21.02%	5.97%	0.05%	11.96%	21.83%	-2.08%	22.49%
Small Cap Equity	Small Cap Equity	Cash Equivalent	Dev ex-U.S. Equity	Small Cap Equity	Large Cap Equity	Small Cap Equity	U.S. Fixed Income	High Yield	Dev ex-U.S. Equity	High Yield	Large Cap Equity	Small Cap Equity	High Yield	Small Cap Equity	Real Estate	Emerging Market Equity	Small Cap Equity	Gbl ex-U.S. Fixed	Real Estate
-3.02%	2.49%	1.78%	39.42%	18.33%	4.91%	18.37%	6.97%	-26.16%	33.67%	15.12%	2.11%	16.35%	7.44%	4.89%	-0.79%	11.19%	14.65%	-2.15%	21.91%
Gbl ex-U.S. Fixed	Emerging Market Equity	High Yield	High Yield	Gbl ex-U.S. Fixed	Small Cap Equity	Large Cap Equity	Large Cap Equity	Small Cap Equity	Small Cap Equity	Large Cap Equity	Cash Equivalent	Large Cap Equity	Real Estate	High Yield	Dev ex-U.S. Equity	Real Estate	Gbl ex-U.S. Fixed	Large Cap Equity	Emerging Market Equity
-3.91%	-2.61%	-1.37%	28.97%	12.54%	4.55%	15.79%	5.49%	-33.79%	27.17%	15.06%	0.10%	16.00%	3.67%	2.45%	-3.04%	4.06%	10.51%	-4.38%	18.44%
High Yield	Gbl ex-U.S. Fixed	Emerging Market Equity	Large Cap Equity	High Yield	Cash Equivalent	High Yield	Cash Equivalent	Large Cap Equity	Large Cap Equity	Dev ex-U.S. Equity	Small Cap Equity	High Yield	Cash Equivalent	Cash Equivalent	Small Cap Equity	Dev ex-U.S. Equity	Real Estate	Real Estate	High Yield
-5.86%	-3.75%	-6.16%	28.68%	11.13%	3.07%	11.85%	5.00%	-37.00%	26.47%	8.95%	-4.18%	15.81%	0.07%	0.03%	-4.41%	2.75%	10.36%	-5.63%	14.32%
Large Cap Equity	Real Estate	Dev ex-U.S. Equity	Gbl ex-U.S. Fixed	Large Cap Equity	High Yield	Gbl ex-U.S. Fixed	High Yield	Dev ex-U.S. Equity	Gbl ex-U.S. Fixed	U.S. Fixed Income	Real Estate	U.S. Fixed Income	U.S. Fixed Income	Emerging Market Equity	High Yield	U.S. Fixed Income	High Yield	Small Cap Equity	U.S. Fixed Income
-9.11%	-3.81%	-15.80%	19.36%	10.88%	2.74%	8.16%	1.87%	-43.56%	7.53%	6.54%	-6.46%	4.21%	-2.02%	-2.19%	-4.47%	2.65%	7.50%	-11.01%	8.72%
Dev ex-U.S. Equity	Large Cap Equity	Small Cap Equity	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	Cash Equivalent	Small Cap Equity	Real Estate	U.S. Fixed Income	Gbl ex-U.S. Fixed	Dev ex-U.S. Equity	Gbl ex-U.S. Fixed	Emerging Market Equity	Gbl ex-U.S. Fixed	Gbl ex-U.S. Fixed	Gbl ex-U.S. Fixed	U.S. Fixed Income	Dev ex-U.S. Equity	Gbl ex-U.S. Fixed
-13.37%	-11.89%	-20.48%	4.10%	4.34%	2.43%	4.85%	-1.57%	-48.21%	5.93%	4.95%	-12.21%	4.09%	-2.60%	-3.09%	-6.02%	1.49%	3.54%	-14.09%	5.09%
	Dev ex-U.S. Equity	Large Cap Equity	Cash Equivalent	Cash Equivalent	Gbl ex-U.S. Fixed	U.S. Fixed Income	Real Estate	Emerging Market Equity	Cash Equivalent	Cash Equivalent	Emerging Market Equity	Cash Equivalent	Gbl ex-U.S. Fixed	Dev ex-U.S. Equity	Emerging Market Equity	Cash Equivalent	Cash Equivalent	Emerging Market Equity	Cash Equivalent
	-21.40%	-22.10%	1.15%	1.33%	-8.65%	4.33%	-7.39%	-53.33%	0.21%	0.13%	-18.42%	0.11%	-3.08%	-4.32%	-14.92%	0.33%	0.86%	-14.57%	2.28%

Correlations of Major Asset Classes

Portfolio Visualizer 9/1/09 – 8/31/19

Name	Ticker	VTI	VO	VB	SHY	BND	TLT	TIP	MUB	VEU	VSS	VWO	VNQ	DBC	GLD
Vanguard Total Stock Market ETF	VTI	-	0.97	0.95	-0.28	-0.20	-0.48	-0.01	-0.11	0.86	0.84	0.76	0.64	0.55	0.04
Vanguard Mid-Cap ETF	VO	0.97	-	0.97	-0.27	-0.19	-0.46	-0.00	-0.08	0.84	0.84	0.75	0.68	0.52	0.07
Vanguard Small-Cap ETF	VB	0.95	0.97	-	-0.31	-0.24	-0.49	-0.03	-0.13	0.79	0.80	0.70	0.66	0.53	0.04
iShares 1-3 Year Treasury Bond ETF	SHY	-0.28	-0.27	-0.31	-	0.81	0.61	0.63	0.46	-0.15	-0.15	-0.06	0.09	-0.11	0.44
Vanguard Total Bond Market ETF	BND	-0.20	-0.19	-0.24	0.81	-	0.84	0.80	0.72	-0.08	-0.07	-0.00	0.29	-0.16	0.44
iShares 20+ Year Treasury Bond ETF	TLT	-0.48	-0.46	-0.49	0.61	0.84	-	0.59	0.63	-0.41	-0.42	-0.33	0.03	-0.45	0.25
iShares TIPS Bond ETF	TIP	-0.01	-0.00	-0.03	0.63	0.80	0.59	-	0.58	0.13	0.15	0.23	0.36	0.08	0.53
iShares National Muni Bond ETF	MUB	-0.11	-0.08	-0.13	0.46	0.72	0.63	0.58	-	0.00	0.00	0.03	0.31	-0.16	0.26
Vanguard FTSE All-Wld ex-US ETF	VEU	0.86	0.84	0.79	-0.15	-0.08	-0.41	0.13	0.00	-	0.96	0.92	0.59	0.61	0.17
Vanguard FTSE All-Wld ex-US SmCp ETF	VSS	0.84	0.84	0.80	-0.15	-0.07	-0.42	0.15	0.00	0.96	-	0.90	0.56	0.64	0.24
Vanguard FTSE Emerging Markets ETF	VWO	0.76	0.75	0.70	-0.06	-0.00	-0.33	0.23	0.03	0.92	0.90	-	0.56	0.58	0.28
Vanguard Real Estate ETF	VNQ	0.64	0.68	0.66	0.09	0.29	0.03	0.36	0.31	0.59	0.56	0.56	-	0.25	0.15
Invesco DB Commodity Tracking	DBC	0.55	0.52	0.53	-0.11	-0.16	-0.45	0.08	-0.16	0.61	0.64	0.58	0.25	-	0.36
SPDR Gold Shares	GLD	0.04	0.07	0.04	0.44	0.44	0.25	0.53	0.26	0.17	0.24	0.28	0.15	0.36	-

The Vanguard “Lazy Portfolios”

	Total Bond Market	Total Stock Market	Intl. Stock Market	REIT
Rick Ferri	40%	60%	-	-
Rick Ferri	40%	40%	20%	-
Rick Ferri	40%	40%	24%	6%
Bill Schulteis	40%	10+10+10+10%	10%	10%
William Bernstein	40%	15+10+5+10	5+5+5%	5%
Frank Armstrong	30%	7+9+6+9%	31%	8%
David Swenson	15+15%	30%	15+10%	15%

To Keep It Really Simple! One-Fund Solutions

- Vanguard Life Strategy Funds

	<u>Fixed Income</u>		<u>Equities</u>	
	<u>U.S.</u>	<u>Intl.</u>	<u>U.S.</u>	<u>Intl.</u>
VASIX Income Fund	56%	24%	12%	8%
VSCGX Conservative Growth Fund	42%	18%	24%	16%
VSMGX Moderate Growth Fund	28%	12%	36%	24%
VASGX Growth Fund	14%	6%	48%	32%

- Target Date Funds: 2020, 2025, 2030 ... 2055
 - Vanguard, Fidelity, T Rowe Price, etc.

Rick Ferri's

6 Rules for Disciplined Investing

1. Have a long-term investment philosophy.
2. Form a prudent asset allocation based on this philosophy.
3. Select low-cost funds to represent asset classes in the allocation.
4. Maintain this portfolio through all market conditions.
5. Don't change the asset allocation due to recent market activity.
6. Don't hold back on new investments while waiting for market clarity.

To Probe Further

- Making Sense of Investment Risk, Paul Merriman, AAI Journal, March 2020
- Rebalancing: A Sound Strategy for Limiting Risk, Vanguard, June 2019
- Global Equity Investing, The Benefits of Diversification and Sizing Your Allocation, Vanguard, February 2019
- The Importance of Diversification in Retirement Portfolios, Craig Israelsen, AAI Journal, April 2015
- Portfolio Selection, Harry Markowitz, Journal of Finance, 1952
- A Random Walk Down Wall Street, Burton Malkiel, Norton & Co.
- Winning the Loser's Game, Charles Ellis, McGraw-Hill
- Investing at Level 3, James Cloonan, AAI

Useful Websites

- aaii.com Broad selection of investing material
- siliconvalleyaaii.org Previous presentations on various topics
- [santaclaracountylib.org/Adults/Business & Money](http://santaclaracountylib.org/Adults/Business%20&%20Money)
Morningstar Research Center, S&P's NetAdvantage, Value Line
- portfoliovisualizer.com Free access to a wide selection of tools
- vanguard.com fidelity.com schwab.com
- callan.com Callan chart
- bogleheads.org Interesting blog
- obliviousinvestor.com/index-funds/ Mike Piper blog
- rickferri.com/investment-philosophy/ Rick Ferri blog



“Are you ready to start investing or do you want to keep throwing your money away on food, clothing and shelter?”