

Combining Academic and Practitioner Theories

PMAR 2021

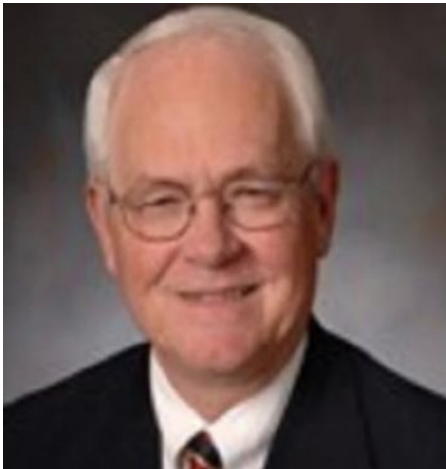
*John M. Longo, PhD, CFA
Professor of Finance,
Rutgers Business School
Chief Investment Officer, Beacon Trust*

Outline

- Early Academic Work (Pre-1980)
 - Discounted Cash Flows, Markowitz Portfolio Theory, CAPM, Efficient Market Hypothesis, APT
- More Recent Academic Work (1980+)
 - Size, Style, Momentum, Liquidity, Quality, Accruals, Behavioral Finance
- Great Investor Strategies
 - Graham, Buffett, Livermore, Bogle, Templeton, Soros, Simons, Wood, Jones, Icahn
- Combining Practitioner and Academic

Discounted Cash Flows (DCF)

- John Burr Williams (1938) suggested valuing an asset as the present value of its future cash flows.
- Myron Gordon (1959) developed the dividend discount model / terminal value model. [$P_0 = D_1 / (r - g)$]



John B Williams



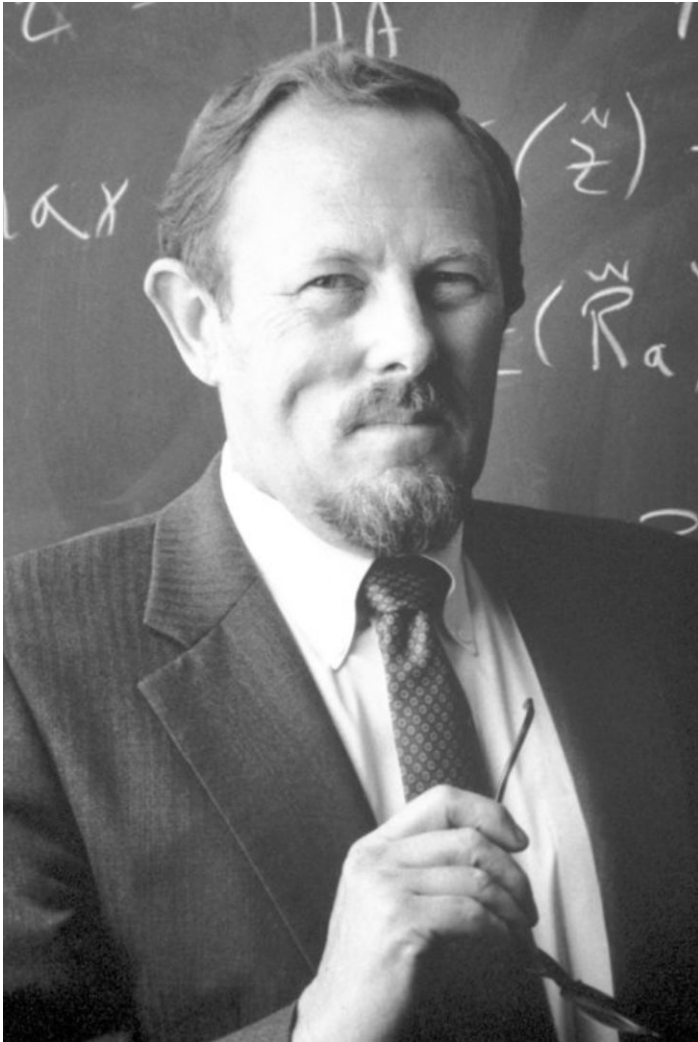
Myron Gordon at the University of Toronto in 1982.

Markowitz Portfolio Theory



- Harry Markowitz (1952+) was the first to correctly compute the risk of the portfolio quantitatively and understood the impact of **correlation** or covariance on portfolio risk.
- An **efficient portfolio** is one that maximizes return, for a given level of risk.

Capital Asset Pricing Model (CAPM)



- Developed by Sharpe / Lintner / Mossin / Treynor (1964+).
- The only risk that is worth paying for is the (market) risk that can't be diversified away, beta.
- Linear relationship between risk and expected return.

$$\text{CAPM} \rightarrow E(r_x) = r_f + B_x[E(r_m) - r_f]$$

Efficient Market Hypothesis (EMH)



Source: MINT

- Developed by Samuelson / Fama (1965+), Bachelier (1900).
- The price is always right.
- There is no such thing as bubbles - market is rational.
- Stock price changes are random (around an upward trend).

Arbitrage Pricing Theory (APT)



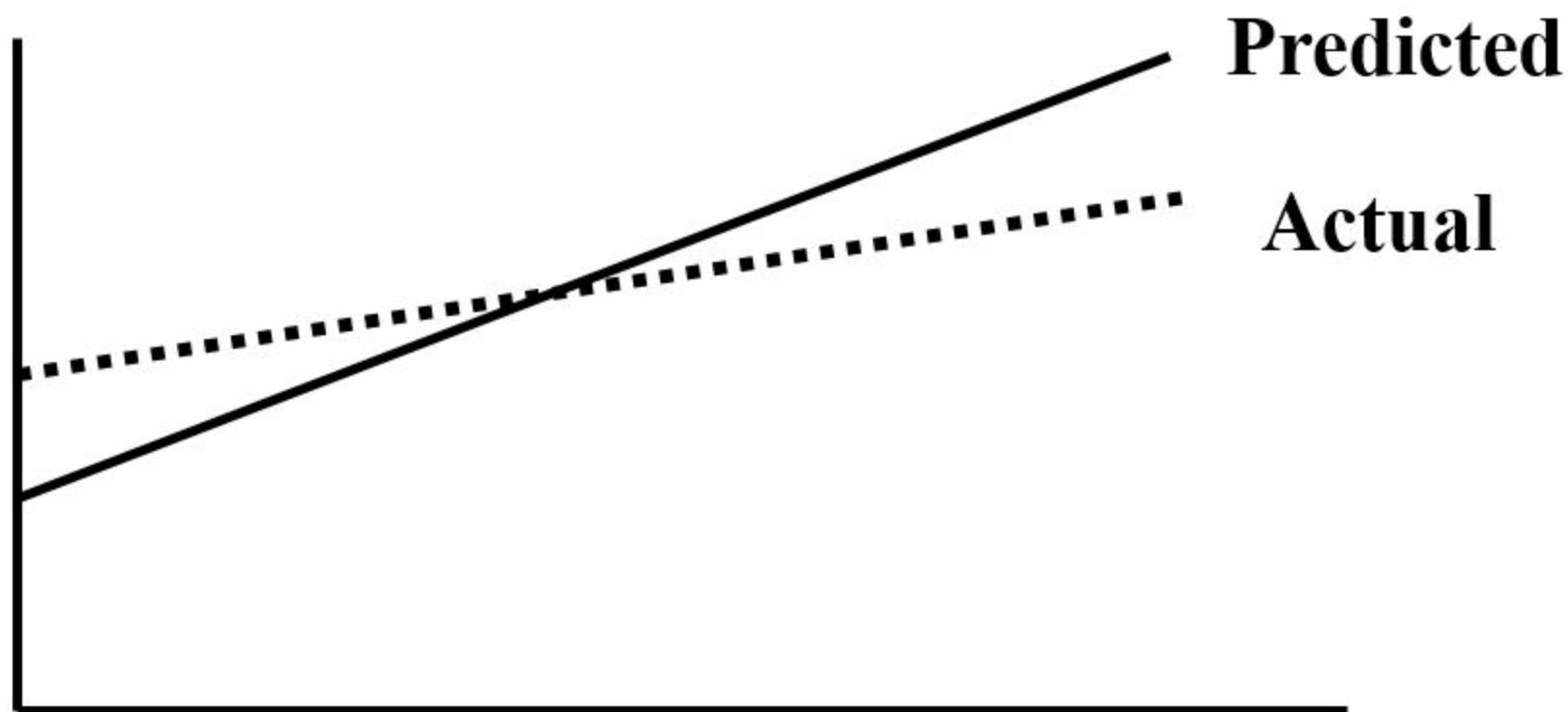
- Developed by Stephen Ross (1976+).
- Doesn't rely on restrictive assumptions of CAPM.
- Determines how assets are priced if there is **no arbitrage** in equilibrium
- Used as the basis for many multifactor models.
 - Many different versions.

Source: MIT

$$E(r_i) = r_f + \beta_{i1} * RP_1 + \beta_{i2} * RP_2 + \dots + \beta_{kn} * RP_n,$$

Fama French (1992+) Studies on CAPM

Return %



Source: Bodie, Kane, Marcus

Beta

Factors: Size and Style

- Fama French found Size (Market Cap) and Style (Growth vs. Value) do a better job explaining the risk return relationship than CAPM
 - Size, Style (2 factor); including Beta (3 factor)
- Morningstar popularized the Style Box



Source: Morningstar

Factor: Momentum



4 Factor Model

- 1) Beta
- 2) Size
- 3) Style
- 4) Momentum

- Jegadeesh and Titman (1993), Assness (AQR, Chicago dissertation)
 - Winners keep winning, losers keep losing over the short-term (3-12 months)

Factor: Liquidity



- Amihud and Mendelson(1986+)
 - Illiquid investments provide higher returns, if you can stomach the volatility

5 Factor Model

- 1) Beta
- 2) Size
- 3) Style
- 4) Momentum
- 5) Liquidity

Behavioral Economics / Finance



Source: U of Chicago

- Now mainstream.
- Nobel Laureates.
 - Kahneman (Tversky), Smith, Shiller, Simon, and Thaler
- Investors make systematic mistakes.
 - Maybe you can profit from them.

Benjamin Graham: Value Pioneer



Pioneer of Value Investing.

Money manager who also taught at Columbia.

Focused on quantitative measures of value.

One of the first activist investors.

One of the first hedge fund managers.

Active from the 1920s until his death in 1976.

Benjamin Graham

Views stock as ownership in a business.

If you don't like the business, don't buy the stock.

Will only buy at a discount to asset value and earnings.

Buying at a low valuation limits downside.

Only looks at firms with a long-term history.

Can see how firm has navigated recessions.

Your investment strategy should be a function of how much time you have to devote to your investments.

Defensive investor: Simple screen, not much time

Enterprising investor: More speculative, have time to follow the story closely.

Warren Buffett: The Greatest



Always ranked among the richest people in the world.

Was a student of Graham's and then worked for him.

Learned the value of long-term investing and high quality management from Philip Fisher.

Investment Strategy =
Graham + Fisher

Warren Buffett

Stays within his circle of competence.

Less likely to make a mistake in areas you know well.

Value investor who buys at a discount (like Graham).

Buying at a low valuation limits downside.

Favors companies with a wide moat (e.g. Coca Cola)

Can hold wide moat companies long term (avoid taxes) since they are more immune to competition.

Favors companies with a long-term history.

“You don’t know who is swimming naked until the tide comes out.”

Favors companies with honest, competent management.

Can delegate to this type of management, making Buffett’s operation more scalable (360,000 employees).

Buffett Quote on CAPM

“The competitive strengths of a Coke or Gillette are obvious to even the casual observer of business. Yet the beta of their stocks is similar to that of a great many run-of-the-mill companies who possess little or no competitive advantage.

Should we conclude from this similarity that the competitive strength of Coke and Gillette gains them nothing when business risk is being measured? Or **should we conclude that the risk in owning a piece of a company -- its stock -- is somehow divorced from the long-term risk inherent in its business operations?**

We believe neither conclusion makes sense and that **equating beta with investment risk** makes no sense.”

Cathie Wood: Disruptive Innovation



Cathie Wood
Source: CNBC

Focuses on disruptive innovation companies

Ark Innovation Fund increased 150% in 2020 vs. 18% rise for S&P 500. Firm AUM of \$50b

Type of venture capital approach with public companies.

A small amount of 10x winners will more than overcome many losers.

Current batting average is > 50%.

George Soros: Global Macro Star



Wanted to be a philosopher but failed.

Set up a hedge fund (Quantum Fund) in the late 1960s

Global macro trader who became famous for shorting the British Pound in 1992.

Fund made \$1 billion in a day when the UK left the ERM.

George Soros

Bet big when convinced you're right – go for the jugular.

Risk management is not only about avoiding losses but also knowing when to increase risk.

Believes market prices have a feedback loop where prices impact fundamentals (i.e., momentum).

Traditional investment theory says only fundamentals impact prices.

Social science is not physical science. Models lack precision and predictability.

Don't overemphasize value of models.

Boom-bust cycle is a regular part of capitalistic system.

100 year flood occurs every 5 years or so.

Jesse Livermore: Momentum Pioneer



Child trading prodigy.

Made and lost several fortunes.

Made \$100 million during the Crash of 1929 (\$1+ billion in today's dollars).

Early pioneer of momentum investing.

Manic-depressive, who committed suicide.

Jesse Livermore

- Let's winners run, cuts losers quickly.

 - Doesn't let small loss snowball into large loss.

- Trades with the trend (Long when market rising, Short when market falling).

 - Avoids risk of shorting star (e.g., Internet) stock during bubble, or catching falling knife in bear market.

- Will not average losing trades.

 - Small loss will not turn into a large loss.

- Unique behavioral characteristics (lived large, traded large).

 - Strategy consistent with personality.

John Templeton: International Pioneer



Founded (Franklin)
Templeton investments.

One of the first money
managers to invest
internationally.

Relocated to The
Bahamas to avoid taxes
and invest in solitude.

Created Templeton Prize
– “Nobel Prize for
Religion”

John Templeton

“If you search worldwide, you will find more bargains and better bargains than by studying only one nation.

Search globally to increase opportunity set.

Never adopt permanently any type of asset or any selection method. Try to stay flexible, open-minded, and skeptical.

Don't follow the crowd, develop your own approach.

Maximize total return after taxes.

Most fund managers are not paid on after-tax returns.

The best performance is produced by a person, not a committee.

Avoid “Group Think”. Don't water down ideas.

John Bogle: Index Fund Pioneer



Founder of Vanguard,
creator of first index
mutual fund.

Vanguard has a mutual
ownership structure –
profits sent back to the
funds themselves.

Emphasizes extremely
low cost funds and
broad diversification.

John Bogle

Costs Matters Hypothesis (CMH)

If market is close to efficient, indexing is optimal.

Was fired as CEO of Wellington before founding Vanguard.

Don't give up in the face of adversity, get even.

Vanguard Index Fund initially flopped ("Bogle's Folly")

Stick with a good idea that you know is right.

Beware of "law of large numbers" with active funds.

It is difficult for big, active funds to outperform. Need a compelling reason to own them.

Paul Tudor Jones: Futures & More



Started out as a futures trader before setting up his hedge fund, Tudor Investment Corp.

Predicted Crash of 1987 (+62% in October 1987)

Made 100%+ rate of return 5 consecutive years.

Created Robin Hood Foundation (\$2+ billion given to fight poverty in NYC).

Paul Tudor Jones

Like many traders, follows the trend, cuts losers, let's winners run. Willing to shift 180 degrees on opinion.

Avoids large losses.

Decrease volume if trading poorly and increase volume if trading well.

Avoids temptation to double up when things go wrong.

Assumes all his positions are wrong daily and has to reconvince himself they are right.

Does not get attached to positions.

Places a mental stop loss order. If hit, gets out.

Stop loss orders force discipline.

James Simons: Super Quant



Former code breaker for the U.S. government and Math Professor.

Cracked code of financial markets.

Renaissance Medallion Fund perhaps most successful hedge fund ever – 30%+ returns for 30+ years.

James Simons

- Has many models.

 - Diversification across models.

- Constant R&D in search of new strategies.

 - Most market inefficiencies disappear over time; need new pipeline of ideas.

- Have an open atmosphere – make sure everyone knows what everyone else is doing (use NDA to enforce). Pay people on profits of the firm.

 - Silo mentality not good for risk or return.

- Prefers to hire people without a financial background.

 - Doesn't want researchers to be biased by existing ideas. Breakthroughs often occur because people think “outside the box” and don't follow traditional rules.

A.W. Jones: Hedge Fund Pioneer



Sociologist, turned writer for *Fortune* magazine, turned hedge fund pioneer.

Created dynamic long/short fund.

Inspired many early fund managers, like George Soros and Michael Steinhardt.

Consciously avoided regulation and created the modern hedge fund (20%) incentive fee structure.

A.W. Jones

- Developed strong network. Paid high commissions for good ideas.

 - Information network matters.

- Net Exposure: $(\text{Long } \$ - \text{Short } \$) / \text{Fund Capital } \$$

 - Dynamically adjust Long / Short / Leverage ratios.

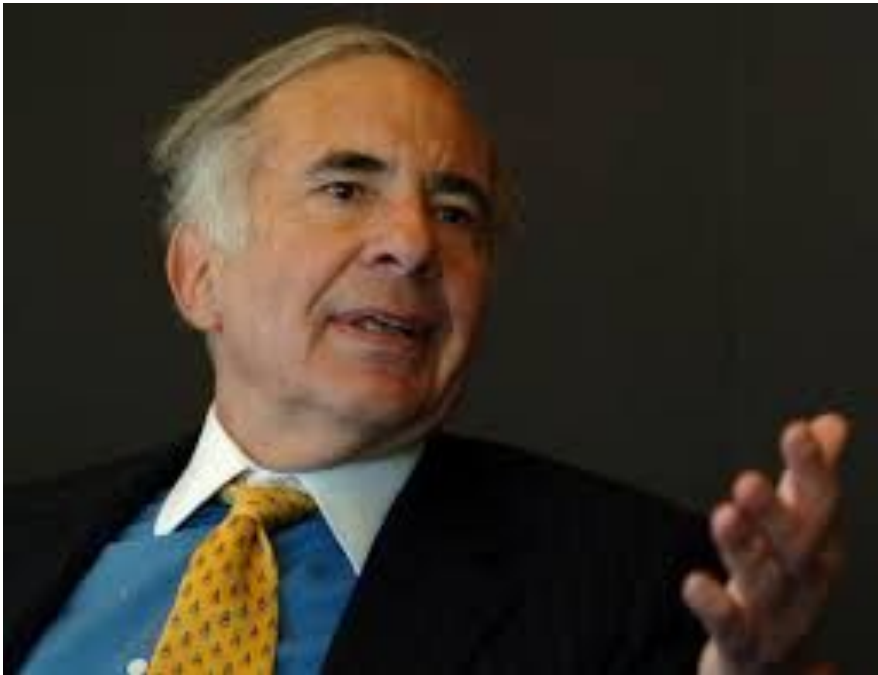
- Made conscious decision to avoid most regulation.

 - Less regulation, better opportunity for returns.

- Evolved to fund of fund approach later in career

 - Added layer of diversification reduces risk, but extra layer of fees decreases returns.

Carl Icahn: Raider / Activist Investor



Activist is the catalyst to realize fair value.

Raider strategy: Take a large stake in a company and push for changes:

- Stock buyback

- Increase dividends

- Cut costs

- Change management

- Change Board of Directors

- Outright sale of company

Carl Icahn

Went to medical school, but hated it and dropped out.

You are more likely to excel in a field if you are passionate about it.

“If you want a friend on Wall Street get a dog.”

Investing is a tough business – need the mindset / fortitude to survive and thrive.

The “Icahn Manifesto.”

Trying to convince management to liquidate or sell the company to a “white knight.”

Waging a proxy contest (Gordon Gekko, Wall Street).

Making a tender offer.

Selling back our position to the company (Greenmail).

More likely to succeed if have a well thought out strategy (and a lot of money).

One Size or Ratio Does Not Fit All

- A Sharpe Ratio is a simple way to make a quick comparisons across strategies but misses important information.
- Evaluate short-term strategies with short-term metrics.
 - Example: Batting average, correlations, drawdowns, etc.
- Measure long-term strategies using long-term metrics.
 - Example: Focus on 3-5 year returns and alpha, not monthly, quarterly, annually.

What Does Markowitz Do?

- How does Harry Markowitz invest his own money?
 - He said, “I visualized my grief if the stock market went way up and I wasn’t in it — or if it went way down and I was completely in it. So I split my contributions 50/50 between stocks and bonds.”

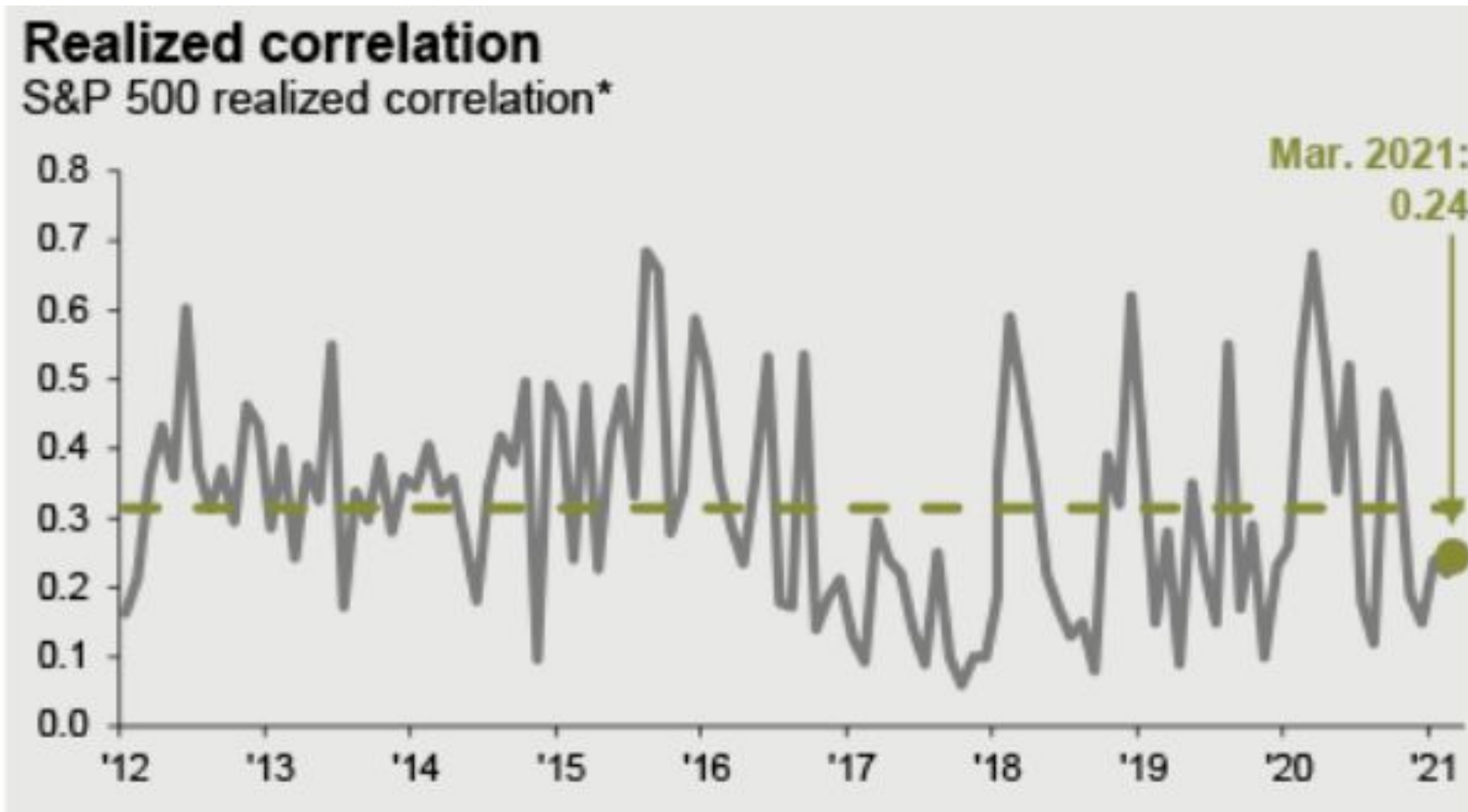
Source: Jason Zweig

[https://www.nytimes.com/2007/09/29/business/29noce
ra.html](https://www.nytimes.com/2007/09/29/business/29noce
ra.html)

Markowitz: Big Picture Use

- Estimating individual expected returns, standard deviations, and correlations is challenging.
 - 50 security portfolio \square 2500 estimates.
- Use Markowitz for big picture asset allocation decisions.
 - Not as effective in picking individual equities or other volatile assets.

Difficulty In Estimating Correlations



Buffett and (Single or Multifactor) Beta

- If you are going to use (single or multifactor) beta models, add a common sense filter.
 - Compare, large mature firms (like P&G) only with other large mature firms.
 - Realize that beta estimates for new firms, or those with irregular growth rates, probably have little value.
 - Have more confidence in beta estimates when the fundamentals haven't changed radically for the firm or industry.

More on Buffett, Risk, and Time Horizons

- Are stocks really riskier than bonds if you have a long-term horizon (10+ years)?
 - Consider the 10-Year U.S. Treasury Note, currently yielding around 1.6%-1.7%.
 - This yield is taxable (in taxable accounts), and significantly below the inflation rate of 4%+, destroying net worth in real terms, in an environment that favors an increase in interest rates.

Quant Strategies and Card Counting

- Many quant strategies, like those from Renaissance, are like card counting.
- Batting average is important ($> 50\%$).
- Short-term performance is important.
- Correlations should be low with broad market indexes.
- Concentration should be low / diversification should be high.
 - Contrast with Activist strategies.

Icahn and the Activists

- A concentrated portfolio is the only one that makes sense for activists in order to have an impact.
 - Vol will be high, so Sharpe Ratios may not be especially relevant.
- Evaluate over a long-term period on the portfolio returns and ability to influence direction / strategy.

Quants and Black Litterman (BL)

- If you insist on a (largely) quantitative model, consider Black Litterman Model
 - Traditional applications of Markowitz Portfolio Theory often result in portfolios that look nothing like the (macro/fundamental/technical) views of the portfolio manager.
 - BL doesn't require input estimates of expected returns
 - The user states how their assumption about expected returns differ from the markets and states their degree of confidence in the alternative assumptions.
 - The BL Model then computes the desired (mean-variance efficient) asset allocation.

Personal Investing Advice

- If you have no edge or time, index fund investing is optimal.
- Invest in your circle of competence.
 - Circle of competence is derived from education, work experience, investing experience, and available time to monitor your investments.
- If your circle of competence is small, supplement individual securities with index funds and/or funds managed by talented investors.

Questions & Answers



Source: blog.octopusgardenyoga.com

Speaker Biographical Sketch

Dr. Longo is Professor of Finance & Economics at Rutgers Business School, and Chief Investment Officer and Portfolio Manager for Beacon Trust, a registered investment advisor with about \$4 billion in assets under management. Beacon is a subsidiary of Provident Financial Services (NYSE: PFS), founded in 1839. Dr. Longo is part of a team that manages a series of mutual funds and separately managed accounts (SMAs). He is also a Visiting Professor of Finance at EMBA Global-Asia, The joint Executive MBA Program of Columbia University, London Business School, and The University of Hong Kong (for the past 5+ years).

Dr. Longo has appeared on CNBC, Bloomberg TV, Bloomberg Radio, ABC News, Fox Business, BBC World, wsj.com (video), GreatInvestors.tv, and several other programs. He has been quoted in *The Wall Street Journal*, *Barron's*, *Thomson Reuters*, *The New York Times*, *Los Angeles Times*, *Dow Jones MarketWatch*, *U.S. News & World Report*, *CNBC.com*, *The Chicago Tribune*, *Yahoo! Finance*, *The Star Ledger*, *Hedge Fund Alert*, and dozens of other periodicals.

He is the author of *Buffett's Tips: A Guide to Financial Literacy and Life* and *The Art of Investing: Lessons from History's Greatest Traders*. He is a member of the Editorial Board of *The Journal of Performance Measurement*. He has led Rutgers students to a personal visit with Warren Buffett on 4 separate occasions. Previously, he was a Vice President at Merrill Lynch & Co., Inc. and served on the Advisory Board of Bloomberg's educational subsidiary, The Bloomberg Institute.