My Investor Journey

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October 25, 2023

The Investment Forum
Osher Lifelong Learning Institute at
George Mason University

Disclaimer

- I am not licensed or qualified to provide investment advice. Consider your own situation carefully and consult with a properly licensed and accredited professional before making or disposing of any investments involving real money.
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Disclosure

- I currently hold long positions in AMGN, CSCO, ICE and UNH.

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Uniform Gifts to Minors Act (UGMA) – An early start

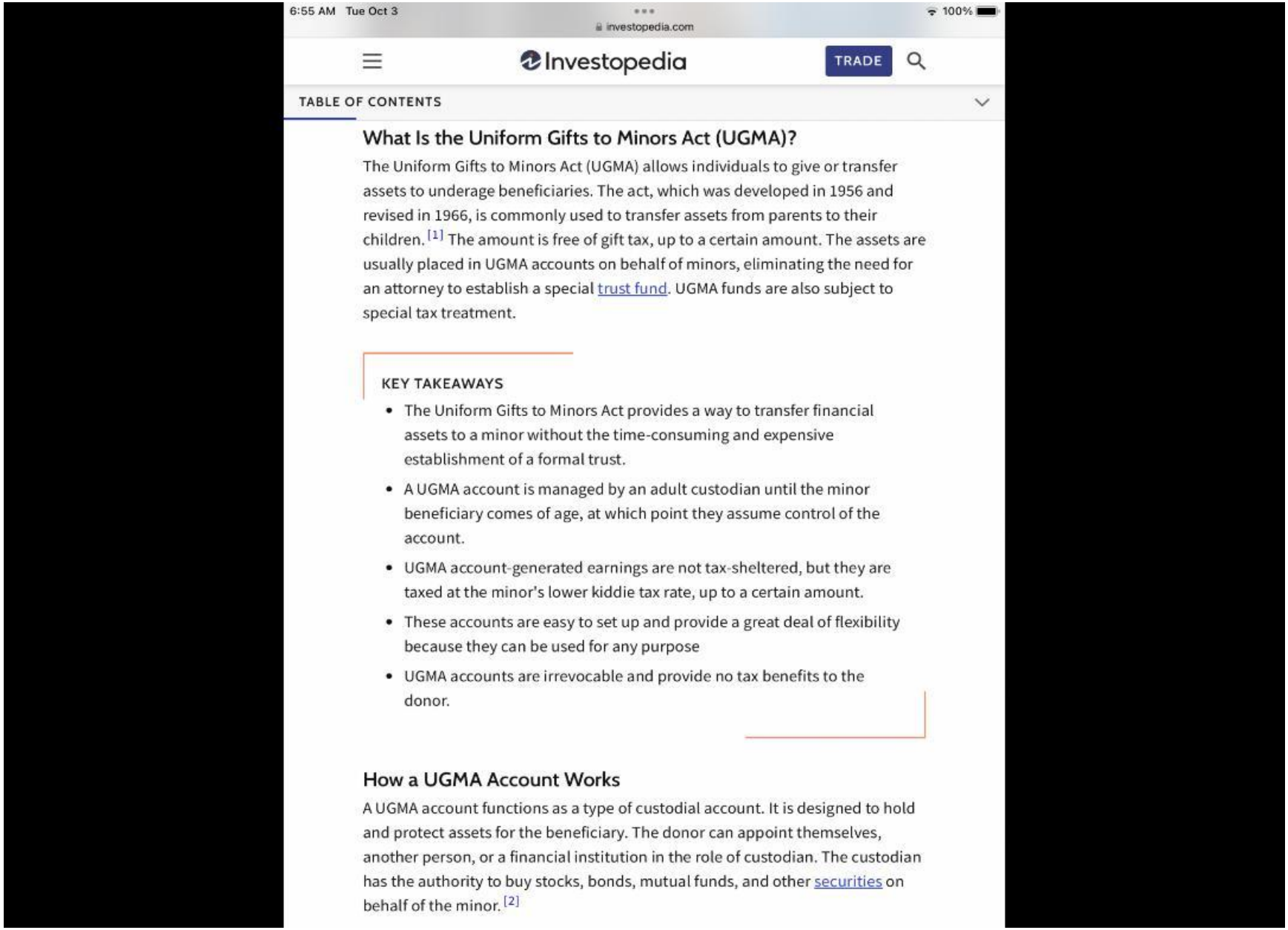
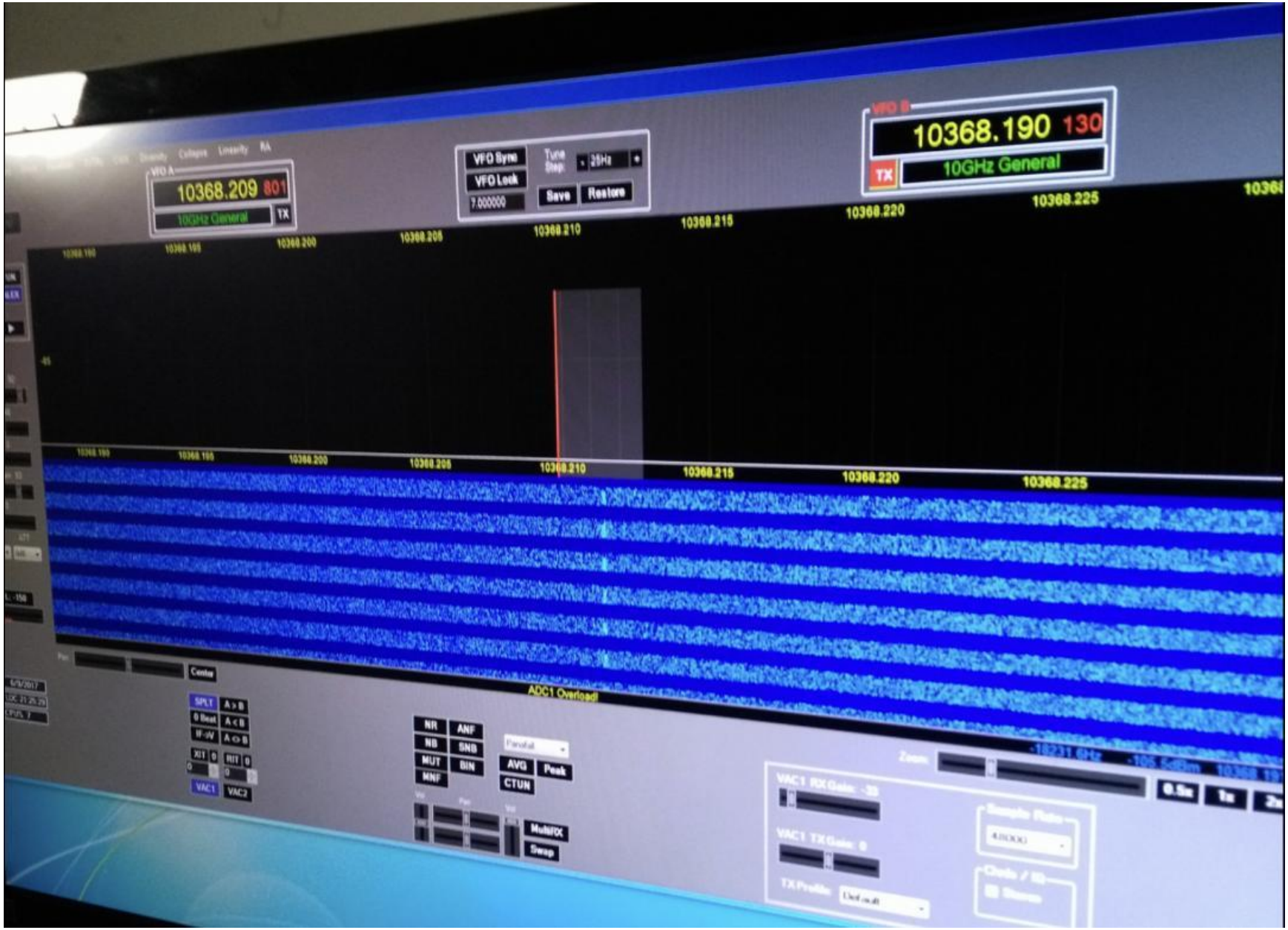


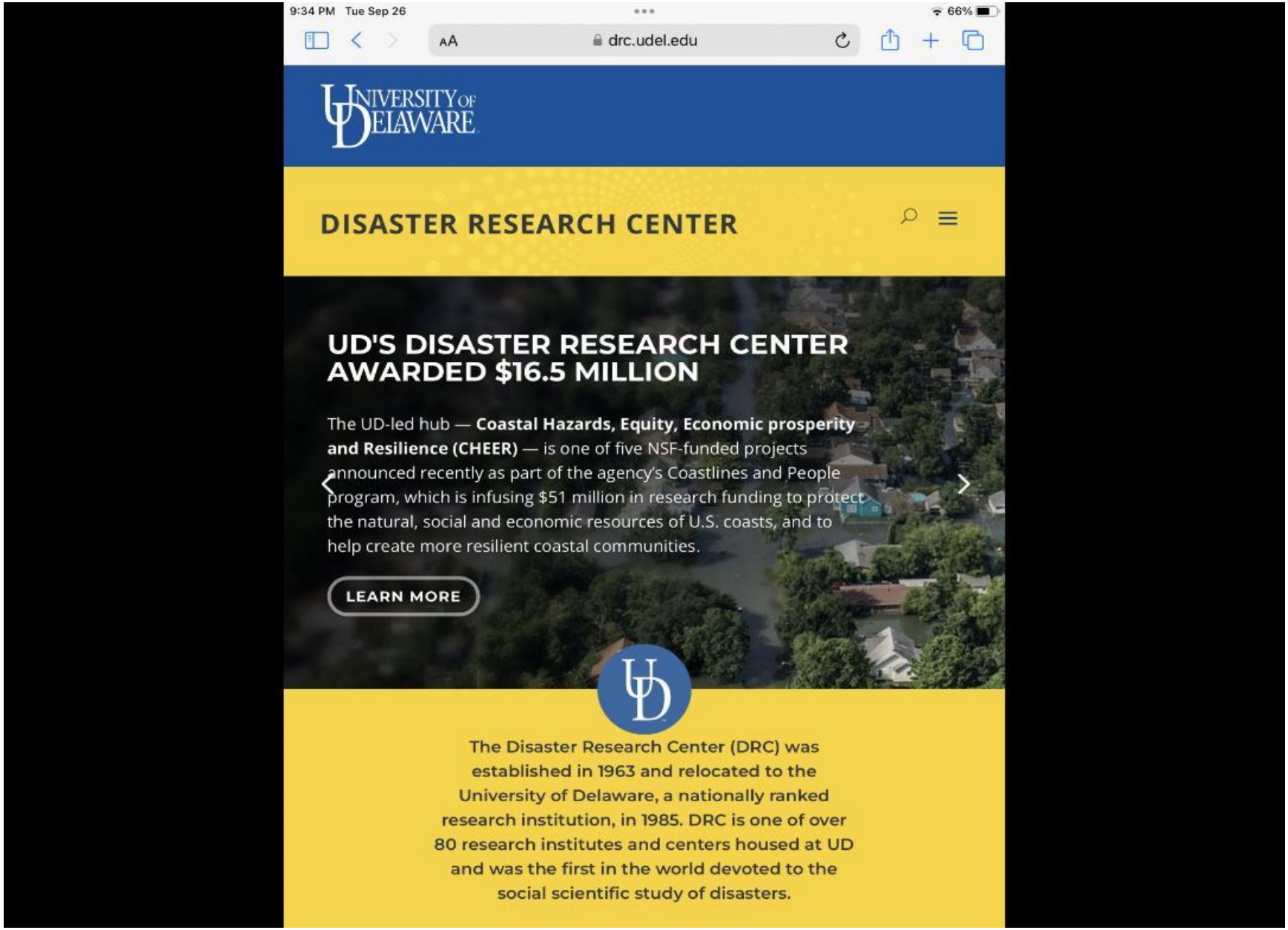
Image source: Segal, Troy, Thomas J. Catlano & Jared Ecker. (2023, Jul 15). "How does a Uniform Gifts to Minors (UGMA) account work?" *Investopedia* https://www.investopedia.com/terms/u/ugma.asp (portion shown)

I had started listening to shortwave radio in 1970 (when I was 12). My first stocks (held under UGMA) were Scientific Atlanta, Comsat, IBM and Sony.

Although I still preferred listening to shortwave, I decided to get an amateur radio license in 1974 (when I was 16). My first stock market profits (IBM) allowed me to get a really great shortwave radio (Allied SX-190).



I thought amateur radio was kind of fun, building equipment and antennas and talking to other hams in remote locations via satellites, via the moon and through more esoteric routes. I began a radio broadcast career shortly thereafter.



In college I joined the Disaster Research Center – an outfit that studies how organizations and communities respond to disaster. I received excellent training in social and behavioral science research and fieldwork. I also worked at a bank part-time.

Asset allocation (mean-variance optimization)

Image source: Michael & Rosann Geltzeiler Trading Center, University of Delaware
https://lerner.udel.edu/centers/lerner-college-trading-center/

I continued taking classes on the University of Delaware (UD) campus after I completed my master's degree. I made use of the Bloomberg terminals whenever I had a chance. In 2006 (age 48), I realized I needed to take investing a little more seriously.

Asset class returns

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2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	YTD	2008 - 2022 Ann.	2008 - 2022 Vol.
Fixed Income 5.2%	EM Equity 79.0%	REITs 27.9%	REITs 8.3%	REITs 19.7%	Small Cap 38.8%	REITs 28.0%	REITs 2.8%	Small Cap 21.3%	EM Equity 37.8%	Cash 1.8%	Large Cap 31.5%	Small Cap 20.0%	REITs 41.3%	Comdty. 16.1%	Large Cap 16.9%	Large Cap 8.8%	REITs 23.4%
Cash 1.8%	High Yield 59.4%	Small Cap 26.9%	Fixed Income 7.8%	High Yield 19.6%	Large Cap 32.4%	Large Cap 13.7%	Large Cap 1.4%	High Yield 14.3%	DM Equity 25.6%	Fixed Income 0.0%	REITs 28.7%	EM Equity 18.7%	Large Cap 28.7%	Cash 1.5%	DM Equity 12.1%	Small Cap 7.2%	Small Cap 23.2%
Asset Alloc. -25.4%	DM Equity 32.5%	EM Equity 19.2%	High Yield 3.1%	EM Equity 18.6%	DM Equity 23.3%	Fixed Income 6.0%	Fixed Income 0.5%	Large Cap 12.0%	Large Cap 21.8%	REITs -4.0%	Small Cap 25.5%	Large Cap 18.4%	Comdty. 27.1%	High Yield -12.7%	Small Cap 8.1%	REITs 6.6%	EM Equity 23.0%
High Yield -26.9%	REITs 28.0%	Comdty. 16.8%	Large Cap 2.1%	DM Equity 17.9%	Asset Alloc. 14.9%	Asset Alloc. 5.2%	Cash 0.0%	Comdty. 11.8%	Small Cap 14.6%	High Yield -4.1%	DM Equity 22.7%	Asset Alloc. 10.6%	Small Cap 14.8%	Fixed Income -13.0%	Asset Alloc. 7.8%	Asset Alloc. 6.1%	Comdty. 20.2%
Small Cap -33.8%	Small Cap 27.2%	Large Cap 15.1%	Cash 0.1%	Small Cap 16.3%	High Yield 7.3%	Small Cap 4.9%	DM Equity -0.4%	EM Equity 11.6%	Asset Alloc. 14.6%	Large Cap -4.4%	Asset Alloc. 19.5%	DM Equity 8.3%	Asset Alloc. 13.5%	Asset Alloc. -13.9%	High Yield 5.2%	High Yield 5.4%	DM Equity 20.0%
Comdty. -35.6%	Large Cap 26.5%	High Yield 14.8%	Asset Alloc. -0.7%	Large Cap 16.0%	REITs 2.9%	Cash 0.0%	Asset Alloc. -2.0%	REITs 8.6%	High Yield 10.4%	Asset Alloc. -5.8%	EM Equity 18.9%	Fixed Income 7.5%	DM Equity 11.8%	DM Equity -14.0%	EM Equity 5.1%	Fixed Income 2.7%	Large Cap 17.7%
Large Cap -37.0%	Asset Alloc. 25.0%	Asset Alloc. 13.3%	Small Cap -4.2%	Asset Alloc. 12.2%	Cash 0.0%	High Yield 0.0%	High Yield -2.7%	Asset Alloc. 8.3%	REITs 8.7%	Small Cap -11.0%	High Yield 12.6%	High Yield 7.0%	High Yield 1.0%	Large Cap -18.1%	REITs 3.0%	DM Equity 2.3%	High Yield 13.0%
REITs -37.7%	Comdty. 18.9%	DM Equity 8.2%	DM Equity -11.7%	Fixed Income 4.2%	Fixed Income -2.0%	EM Equity -1.8%	Small Cap -4.4%	Fixed Income 2.6%	Fixed Income 3.5%	Comdty. -11.2%	Fixed Income 8.7%	Cash 0.5%	Cash 0.0%	EM Equity -19.7%	Cash 2.3%	EM Equity 1.0%	Asset Alloc. 12.4%
DM Equity -43.1%	Fixed Income 5.9%	Fixed Income 6.5%	Comdty. -13.3%	Cash 0.1%	EM Equity -2.3%	DM Equity -4.5%	EM Equity -14.6%	DM Equity 1.5%	Comdty. 1.7%	DM Equity -13.4%	Comdty. 7.7%	Comdty. -3.1%	Fixed Income -1.5%	Small Cap -20.4%	Fixed Income 2.1%	Cash 0.6%	Fixed Income 4.2%
EM Equity -53.2%	Cash 0.1%	Cash 0.1%	EM Equity -18.2%	Comdty. -1.1%	Comdty. -9.5%	Comdty. -17.0%	Comdty. -24.7%	Cash 0.3%	Cash 0.8%	EM Equity -14.2%	Cash 2.2%	REITs -5.1%	EM Equity -2.2%	REITs -24.9%	Comdty. -7.8%	Comdty. -2.6%	Cash 0.4%

Source: Bloomberg, FactSet, MSCI, NAREIT, Russell, Standard & Poor's, J.P. Morgan Asset Management.
Large cap: S&P 500, Small cap: Russell 2000, EM Equity: MSCI EME, DM Equity: MSCI EAFE, Comdty: Bloomberg Commodity Index, High Yield: Bloomberg Global HY Index, Fixed Income: Bloomberg US Aggregate, REITs: NAREIT Equity REIT Index, Cash: Bloomberg 1-3m Treasury. The "Asset Allocation" portfolio assumes the following weights: 25% in the S&P 500, 10% in the Russell 2000, 15% in the MSCI EAFE, 5% in the MSCI EME, 25% in the Bloomberg US Aggregate, 5% in the Bloomberg 1-3m Treasury, 5% in the Bloomberg Global High Yield Index, 5% in the Bloomberg Commodity Index and 5% in the NAREIT Equity REIT Index. Balanced portfolio assumes annual rebalancing. Annualized (Ann.) return and volatility (Vol.) represents period from 12/31/2007 to 12/31/2022. Please see disclosure page at end for index definitions. All data represents total return for stated period. The "Asset Allocation" portfolio is for illustrative purposes only. Past performance is not indicative of future returns.
Guide to the Markets – U.S. Data are as of June 30, 2023.

J.P.Morgan
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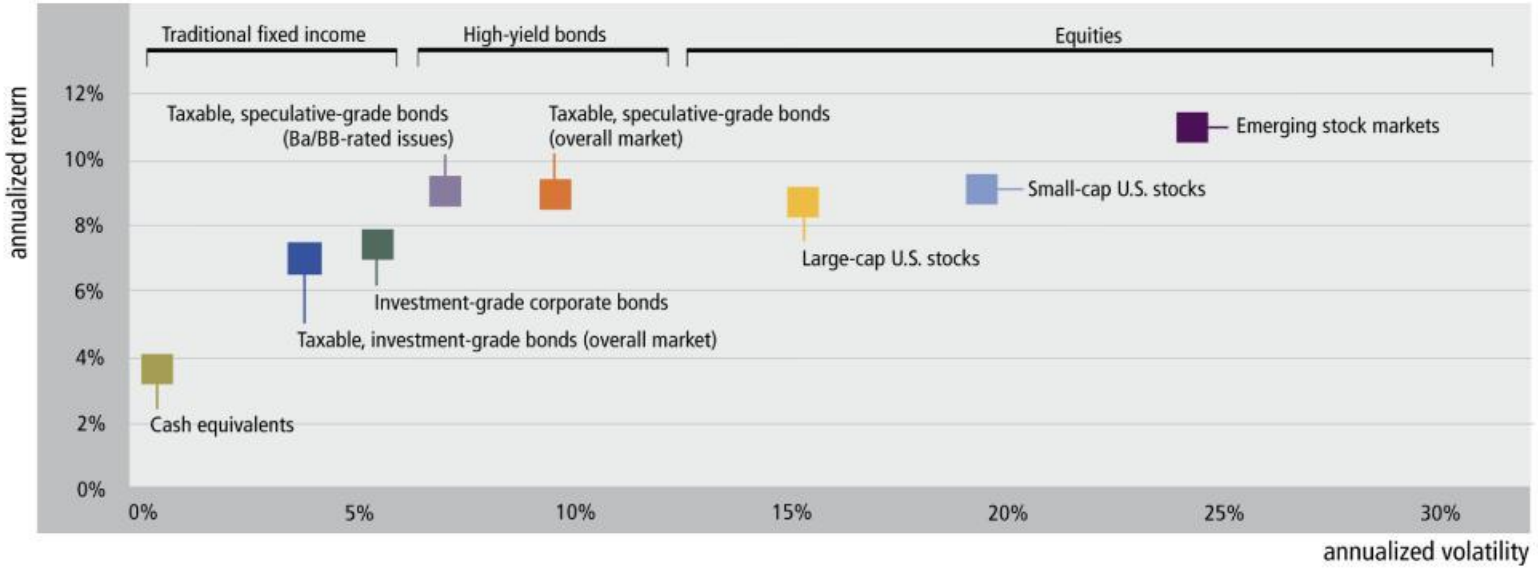
Investing Principles

J.P. Morgan Asset Management. (2023, Jun 30). "Guide to the markets," U.S. edition, 3Q 2023, p. 62.

WILMINGTON TRUST

High-yield bonds bridge traditional bonds, equities

Historical performance, 1990–2010



The following unmanaged market indices are used as proxies for the asset classes: Merrill Lynch 3-Month T-Bill Index for cash equivalents; Barclays Capital U.S. Aggregate Bond Index for the overall market of taxable, investment-grade bonds; Barclays Capital U.S. Corporate Investment-Grade Index for investment-grade corporate bonds; Barclays Capital Ba Corporate Bond Index for Ba/BB-rated bonds; Barclays Capital High Yield Corporate Bond Index for overall market of taxable, speculative-grade bonds; Russell 1000® Index for large-cap U.S. stocks; Russell 2000® Index for small-cap U.S. stocks; and MSCI Emerging markets Index for emerging stock markets. You cannot invest directly in an index. Volatility is measured by the standard deviation of monthly total returns. Past performance is no guarantee of future results.

Source: mpi Stylus

Sup 15b

Image source: Wilmington Trust. (2011). "Capital markets forecast for high-net-worth investors 2011-2017," p. 23

https://en.wikipedia.org/wiki/Portfolio_optimization

Mathematical tools [edit]

The complexity and scale of optimizing portfolios over many assets means that the work is generally done by computer. Central to this optimization is the construction of the covariance matrix for the rates of return on the assets in the portfolio.

Techniques include:

- Linear programming[8][9]
- Quadratic programming
- Nonlinear programming
- Mixed integer programming
- Meta-heuristic methods[10]
- Stochastic programming for multistage portfolio optimization[11]
- Copula based methods[12]
- Principal component-based methods
- Deterministic global optimization
- Genetic algorithm[13]

https://en.wikipedia.org/wiki/Portfolio_optimization

Developing Robust Asset Allocations[1]

Working Paper

First Version: February 17, 2006
Current Version: April 18, 2006

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Abstract

Over the last 50 years, Markowitz's mean-variance optimization framework has become the asset allocation model of choice. Unfortunately the model often leads to highly concentrated asset allocations, the primary reason that practitioners haven't fully embraced this Nobel Prize winning idea. Two relatively new techniques that help practitioners develop robust, well-diversified asset allocations are the Black-Litterman model and resampled mean-variance optimization. The first approach focuses on building capital market expectations that behave better within an optimizer while the second approach is an attempt to build a better optimizer. In addition to providing practitioner friendly overviews of the two approaches, this article contributes to the literature by comparing / contrasting empirical examples of both approaches as well as the first empirical example of how the Black-Litterman model and resampled mean-variance optimization can be used together to develop robust asset allocations.

Key Words: Robust asset allocation, mean-variance optimization, Black-Litterman, resampling.

This is the first paper that I saw that showed what an optimizer output actually looks like... namely an asset allocation area graph (also known as an efficient frontier transition map).

Correlations and volatility

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	U.S. Large Cap	EAFE	EME	Bonds	Corp. HY	Munis	Currcy.	EMD	Cmdty.	REITs	Hedge funds	Private equity	Gold	Ann. Volatility
U.S. Large Cap	1.00	0.88	0.79	0.26	0.87	0.35	-0.46	0.72	0.41	0.76	0.83	0.80	0.11	15%
EAFE		1.00	0.89	0.28	0.85	0.43	-0.63	0.77	0.45	0.61	0.80	0.79	0.24	15%
EME			1.00	0.31	0.83	0.44	-0.69	0.80	0.49	0.54	0.77	0.77	0.39	18%
Bonds				1.00	0.38	0.85	-0.35	0.66	-0.21	0.42	-0.02	0.13	0.58	4%
Corp. HY					1.00	0.46	-0.50	0.87	0.50	0.69	0.79	0.75	0.29	8%
Munis						1.00	-0.39	0.75	-0.13	0.54	0.13	0.26	0.51	4%
Currencies							1.00	-0.59	-0.41	-0.22	-0.31	-0.56	-0.56	6%
EMD								1.00	0.27	0.64	0.56	0.60	0.51	8%
Commodities									1.00	0.34	0.64	0.58	0.29	17%
REITs										1.00	0.60	0.61	0.20	16%
Hedge funds											1.00	0.80	0.03	5%
Private equity												1.00	0.09	8%
Gold													1.00	15%

Source: Bloomberg, Burgiss, Credit Suisse/Tremont, FactSet, Federal Reserve, MSCI, Standard & Poor's, J.P. Morgan Asset Management.
Indices used – Large Cap: S&P 500 Index; Currencies: Federal Reserve Trade-Weighted Dollar; EAFE: MSCI EAFE; EME: MSCI Emerging Markets; Bonds: Bloomberg Aggregate; Corp HY: Bloomberg Corporate High Yield; EMD: Bloomberg Emerging Market; Cmdty.: Bloomberg Commodity Index; REITs: NAREIT All Equity Index; Hedge funds: CS/Tremont Hedge Fund Index; Private equity: Time weighted returns from Burgiss; Gold: Gold continuous contract ($/oz). Private equity data are reported on a one- to two-quarter lag. All correlation coefficients and annualized volatility are calculated based on quarterly total return data for period from 3/31/2013 to 3/31/2023, except for Private equity, which is based on the period from 9/30/2012 to 9/30/2022. This chart is for illustrative purposes only.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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Alternatives

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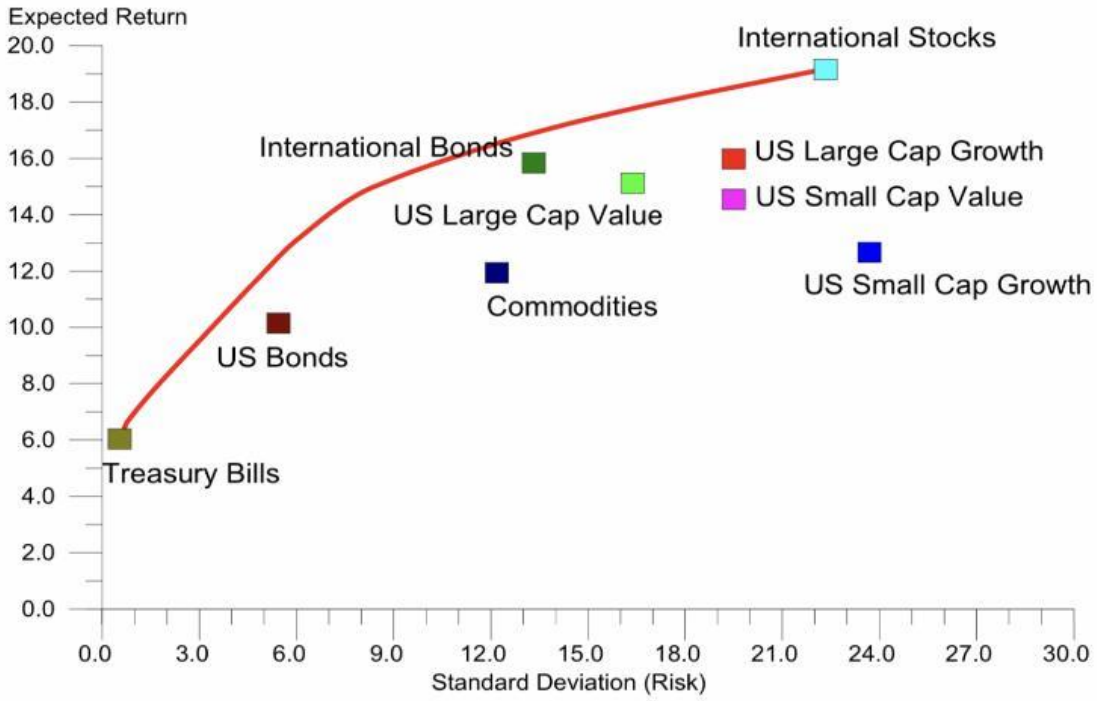
To generate an efficient frontier, you not only need the expected mean returns and standard deviations of each asset class but also the correlations of returns between each pair of asset classes. Image source:
J.P. Morgan Asset Management. (2023, Jun 30). "Guide to the markets," U.S. edition, 3Q 2023, p. 57

Next, we repeat the experiment using a different historical 10-year period, January 1985 to December 1994.

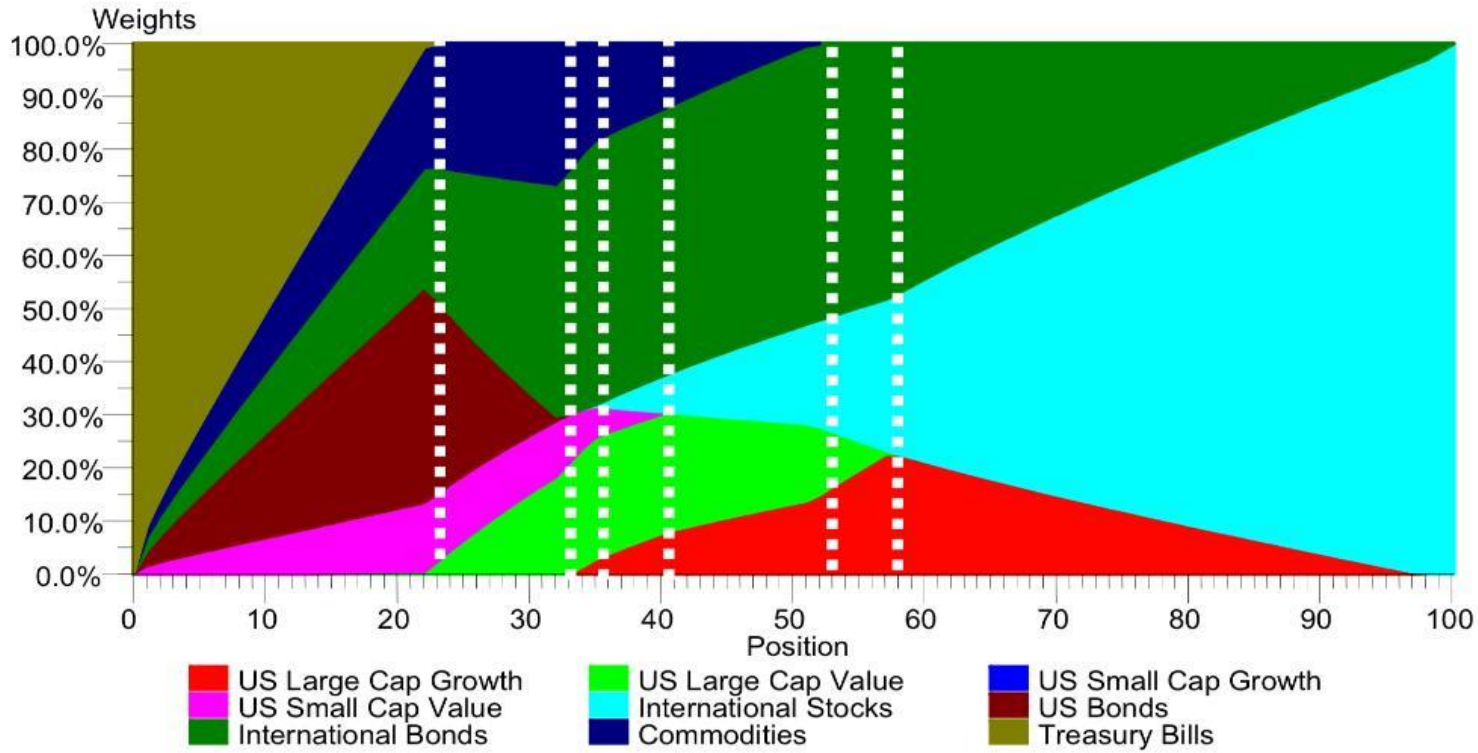
Figure 3: Traditional MVO Efficient Frontier, Historical Inputs (Jan. 1985 to Dec. 1994)



 Robust Asset Allocation

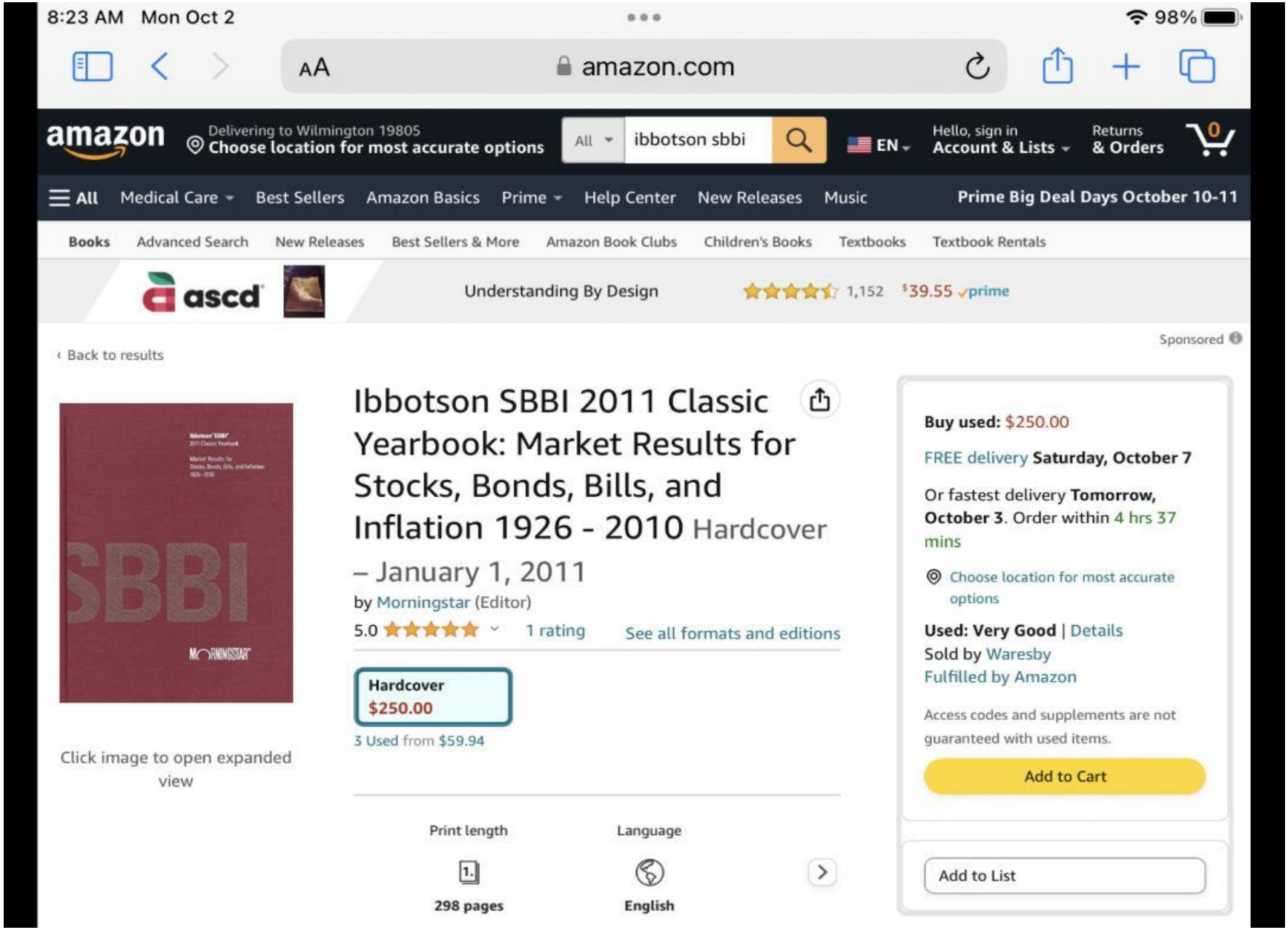
Whenever an advisor discussed mean-variance optimization, this is the kind of graph that was shown. The red line is the efficient frontier. Image source: Idzorek, Thomas M. (2006, Apr 18). "Developing robust asset allocations (working paper), Fig 3., p. 5

Figure 4: Efficient Frontier Asset Allocation Area Graph (Based on Figure 3 Efficient Frontier)

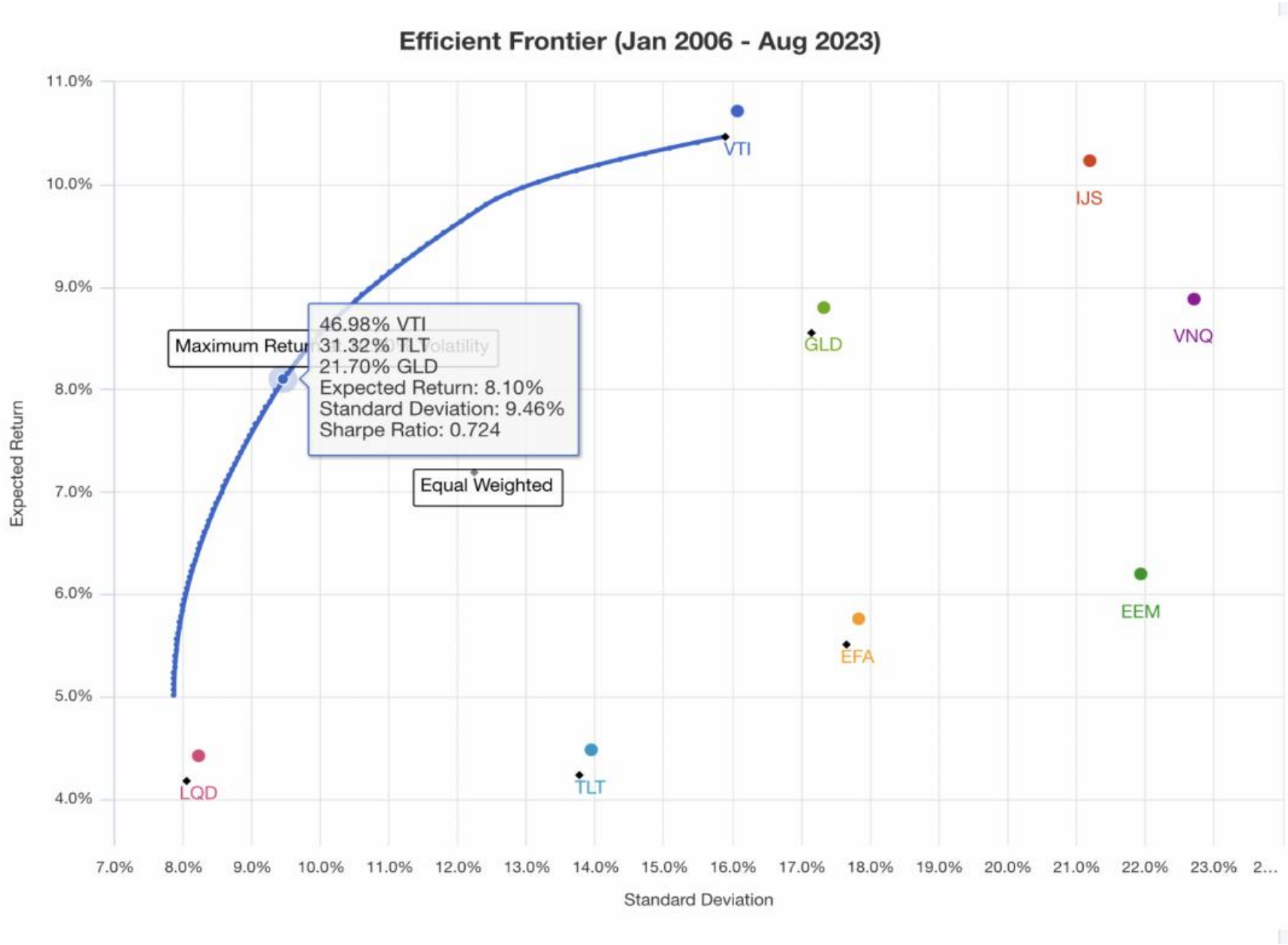


This is the part that was never shown to a client. This is the secret sauce! It is the optimizer output expressed as an asset allocation area graph (also called an efficient frontier transition map).

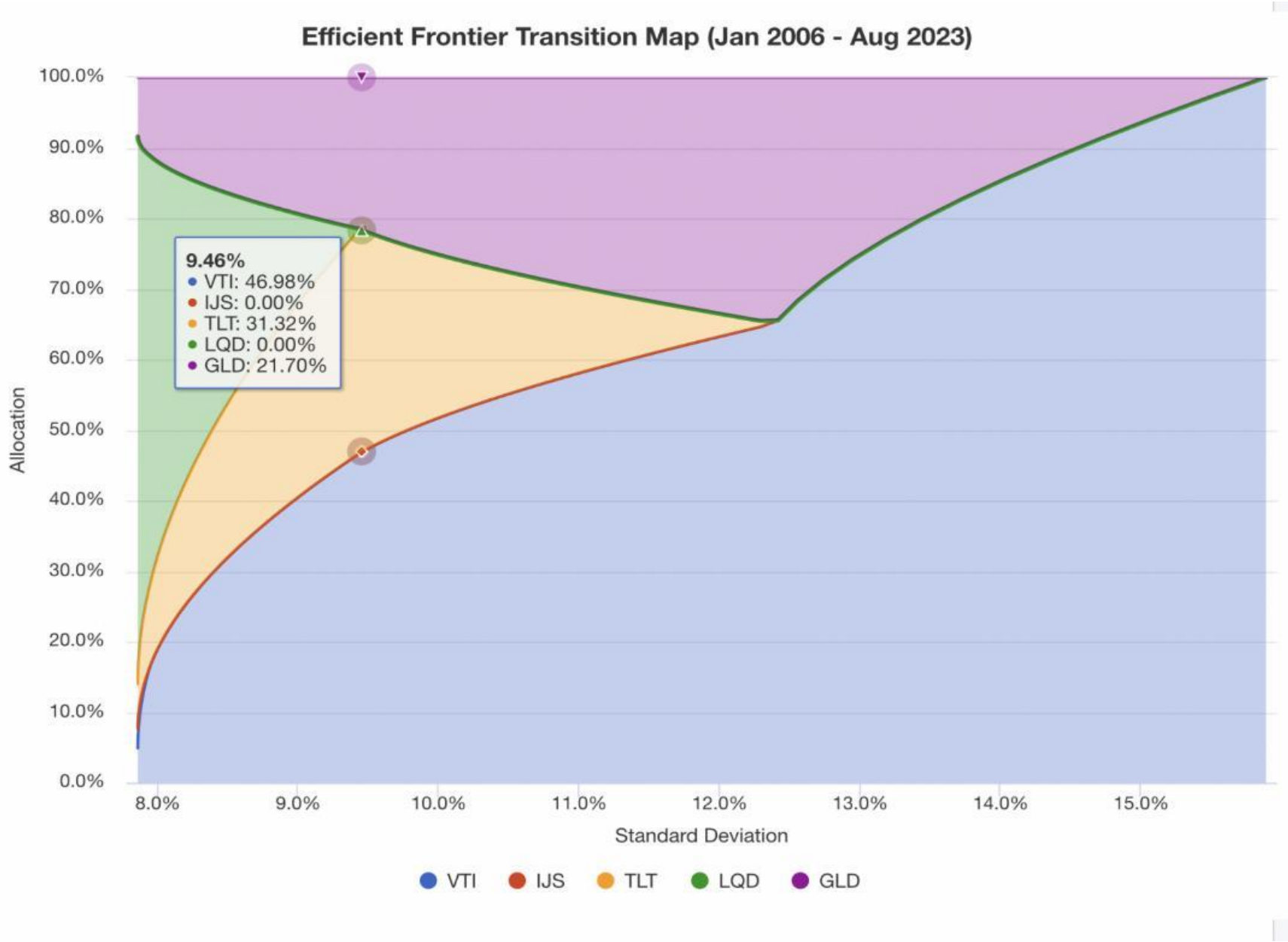
Image source: Idzorek, Thomas M. (2006, Apr 18). "Developing robust asset allocations (working paper), Fig 4., p. 6



Since I didn't understand all the math, my go-to source for theory and data was the Ibbotson SBBI Classic Yearbook (maroon cover). Image source: amazon.com



Today, portfolio optimization tools are available on the internet.
Image source: https://www.portfoliovisualizer.com/



The secret sauce is no longer so secret.
Image source: https://www.portfoliovisualizer.com/

CASH POSITIONS HIDDEN IN FIXED INCOME

Forty leading wealth-management firms reveal their specific portfolio calls for their wealthy clients. Overall allocations don't appear to have changed much from last year, but larger cash holdings are hidden in "cash equivalent" instruments inside fixed-income allocations.

	STOCKS				FIXED INCOME					ALTERNATIVES						CASH
	Total	U.S.	Developed	Emerging	Total	U.S.	High Grade/ HY	Developed	Emerging	Total	Real Estate	Commodities	Hedge Funds	Pvt-Equity	Other	Total
Atlantic Trust	51.0%	38.0%	7.0%	6.0%	25.0%	25.0%	23/2	0.0%	0.0%	22.0%	1.0%	0.0%	19.0%	2.0%	0.0%	2.0%
Barclays	50.0	21.0	19.0	10.0	17.0	17.0	12/5	0.0	0.0	25.0	4.0	2.0	14.0	5.0	0.0	8.0
Bernstein GWM	54.0	37.0	14.0	3.0	29.0	29.0	29/0	0.0	0.0	15.0	1.0	2.0	9.0	3.0	0.0	3.0
Bessemer	51.0	32.2	15.2	3.6	20.0	19.5	18.5/1	0.2	0.3	26.8	5.0	1.8	10.0	10.0	0.0	2.3
BMO Private Bank	67.0	45.0	14.0	8.0	17.0	17.0	17/0	0.0	0.0	16.0	2.0	5.0	0.0	0.0	9.0	0.0
BNY Mellon	45.1	30.1	9.5	5.5	29.8	28.3	26.3/2	0.0	1.5	25.1	1.5	1.2	9.9	10.0	2.5	0.0
Brown Advisory	52.0	36.0	7.0	9.0	15.0	15.0	13/2	0.0	0.0	28.0	3.0	2.0	14.0	7.0	2.0	5.0
Brown Bros Harriman	48.0	34.0	4.0	10.0	31.0	31.0	31/0	0.0	0.0	18.0	4.0	0.0	5.0	6.0	3.0	3.0
Charles Schwab	54.0	29.0	20.0	5.0	30.0	29.0	28/1	1.0	0.0	11.0	5.0	6.0	0.0	0.0	0.0	5.0
Citi Private Bank	39.1	14.3	11.8	13.1	29.8	12.2	9.9/2.3	6.3	11.3	26.0	5.0	0.0	16.0	5.0	0.0	5.1
City National Rochdale	59.0	50.0	3.0	6.0	37.0	37.0	24.5/12.5	0.0	0.0	4.0	2.0	2.0	0.0	0.0	0.0	0.0
Constellation Wealth	50.0	35.0	10.0	5.0	10.0	10.0	10/0	0.0	0.0	35.0	10.0	0.0	25.0	0.0	0.0	5.0
Credit Suisse	43.0	20.5	18.0	4.5	27.0	27.0	27/0	0.0	0.0	27.0	5.0	4.5	12.5	5.0	0.0	3.0
Deutsche Bank	53.0	29.0	17.5	6.5	33.0	29.0	25.5/3.5	0.0	4.0	9.0	0.0	0.0	9.0	0.0	0.0	5.0
Fidelity Investments	62.0	43.0	16.0	3.0	35.0	32.0	32/0	3.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	1.0
Fiduciary Trust	57.5	44.5	10.5	2.5	27.5	27.5	26.5/1	0.0	0.0	10.0	0.0	0.0	10.0	0.0	0.0	5.0
Fifth Third Bank	56.0	35.0	12.0	9.0	22.0	15.0	12/3	2.0	5.0	19.0	4.0	2.0	13.0	0.0	0.0	3.0
Genspring	44.0	22.0	17.0	5.0	23.0	20.0	18/2	3.0	0.0	33.0	0.0	0.0	28.0	0.0	5.0	0.0
Glenmede	56.0	36.0	15.0	5.0	24.0	21.0	19/2	3.0*	0.0	17.0	2.0	2.0	7.0	6.0	0.0	3.0
Goldman Sachs	38.0	23.5	11.5	3.0	29.8	27.8	21.3/6.5	0.0	2.0	30.6	6.0	0.0	7.0	14.0	3.6	1.5
Highmount Capital	50.0	34.0	10.0	6.0	33.5	30.5	21/9.5	0.0	3.0	8.0	2.0	0.0	0.0	3.0	3.0	8.5

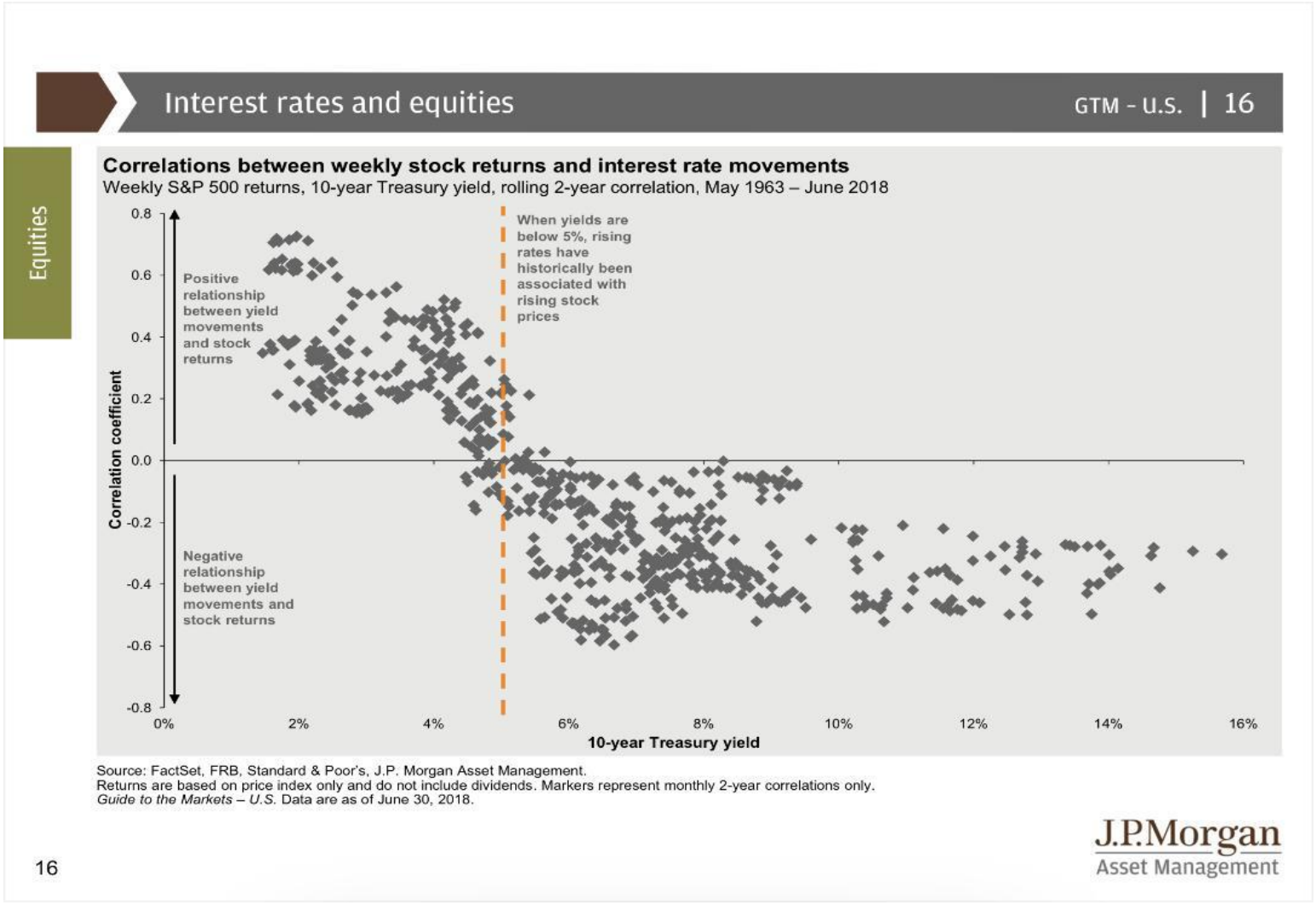
Since I wasn't sure I was doing all the math correctly, I sometimes just collected data on the asset allocations that others were using.
Image source: Barrons Penta (Mar 2, 2015), p. 28.

Barron's Penta 3/2/15
P. 28-29

	STOCKS				FIXED INCOME					ALTERNATIVES						CASH
	Total	U.S.	Developed	Emerging	Total	U.S.	High Grade/ HY	Developed	Emerging	Total	Real Estate	Commodities	Hedge Funds	Pvt-Equity	Other	Total
HSBC Private Bank	45.0	17.0	21.0	7.0	29.0	16.0	13/3	3.0	10.0	25.0	4.0	3.0	13.0	5.0	0.0	1.0
Janney Montgomery	48.0	31.0	13.0	4.0	38.0	38.0	34/4	0.0	0.0	12.0	1.0	2.0	9.0	0.0	0.0	2.0
JPMorgan Chase	41.0	25.0	14.0	2.0	20.0	20.0	18/2	0.0	0.0	33.0	3.0	2.0	23.0	5.0	0.0	6.0
Key Private Bank	65.0	44.0	16.0	5.0	35.0	29.0	19/0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LPL Financial	65.0	60.0	2.0	3.0	26.0	26.0	19/7	0.0	0.0	6.0	0.0	0.0	6.0	0.0	0.0	3.0
Merrill Lynch Wealth Mgt	47.1	24.3	17.8	5.0	26.7	26.7	24.3/2.4	0.0	0.0	25.2	0.0	3.1	13.3	8.8	0.0	1.0
Morgan Stanley	50.0	20.0	22.0	8.0	26.0	19.0	14.0/5.0**	2.0	0.0	20.0	0.0	3.0	9.0	0.0	8.0	4.0
Neuberger Berman	48.0	32.0	10.0	6.0	32.0	26.0	21/5	2.0	4.0	17.0	4.0	0.0	8.0	5.0	0.0	3.0
Northern Trust	37.0	24.0	9.0	4.0	41.0	41.0	31/10	0.0	0.0	22.0	3.0	4.0	6.0	6.0	3.0	0.0
PNC Asset Mgt	50.0	39.5	8.5	2.0	30.0	27.0	24/3	0.0	3.0	20.0	2.0	4.0	8.0	2.0	4.0	0.0
Raymond James	65.0	47.0	14.0	4.0	28.0	24.0	20/4	4.0*	0.0	5.0	0.0	0.0	5.0	0.0	0.0	2.0
RBC Wealth Mgt	56.0	30.0	21.0	5.0	37.0	26.0	22/4	7.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0
Silvercrest	56.0	43.4	7.0	5.6	15.0	15.0	11.2/3.8	0.0	0.0	24.0	0.0	0.0	24.0	0.0	0.0	5.0
UBS	37.0	24.5	7.5	5.0	44.0	41.0	32.5/8.5	1.0	2.0	19.0	0.0	4.0	10.0	5.0	0.0	0.0
U.S. Bank Wealth Mgt	46.0	34.0	7.0	5.0	28.0	23.0	20/3	3.0	2.0	26.0	5.0	2.0	13.0	6.0	0.0	0.0
U.S. Trust	48.0	32.0	10.0	6.0	24.0	23.0	20/3	1.0	0.0	26.0	5.0	6.0	8.0	7.0	0.0	2.0
Wells Fargo	52.0	31.0	12.0	9.0	16.5	11.0	6/5	1.5	4.0	28.5	8.0	4.0	12.5	4.0	0.0	3.0
William Blair	50.0	20.0	20.0	10.0	18.0	15.0	10/5	0.0	3.0	30.0	5.0	0.0	5.0	0.0	20.0	2.0
Wilmington Trust	54.2	34.5	16.4	3.3	22.2	22.2	20.2/2	0.0	0.0	17.8	2.0	0.8	15.0	0.0	0.0	5.8
AVERAGE	51.0	32.5	12.8	5.7	27.1	24.2	23.4/5	1.0	1.6	19.1	2.7	1.7	9.8	3.3	1.6	2.9

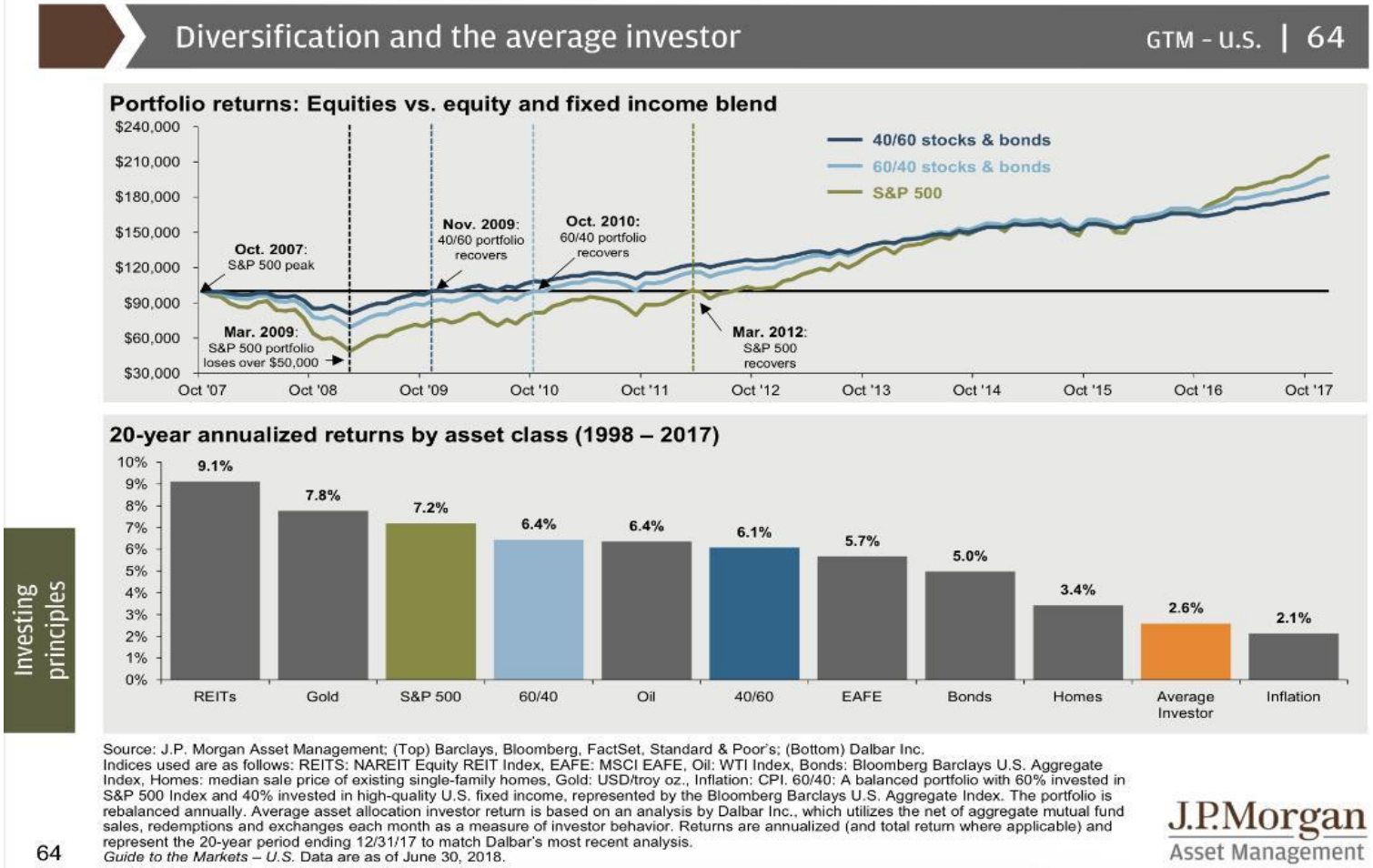
*May include some emerging-market debt. **High yield may include some developed foreign exposure. Note: In some cases, numbers may not total 100% due to rounding.

Note that the averages are shown in the final row.
Image source: Barrons Penta (Mar 2, 2015), p. 29.



Although the data is a little old, this scatterplot may be instructive for us now, as 10-year treasuries are around 5%. When rates on the 10 year are below 5%, an increase in rates is usually accompanied by an increase in stock prices. When the rates are above 5%, an increase in rates is usually accompanied by a decrease in stock prices. For asset allocation, we generally want uncorrelated or negatively correlated asset classes.

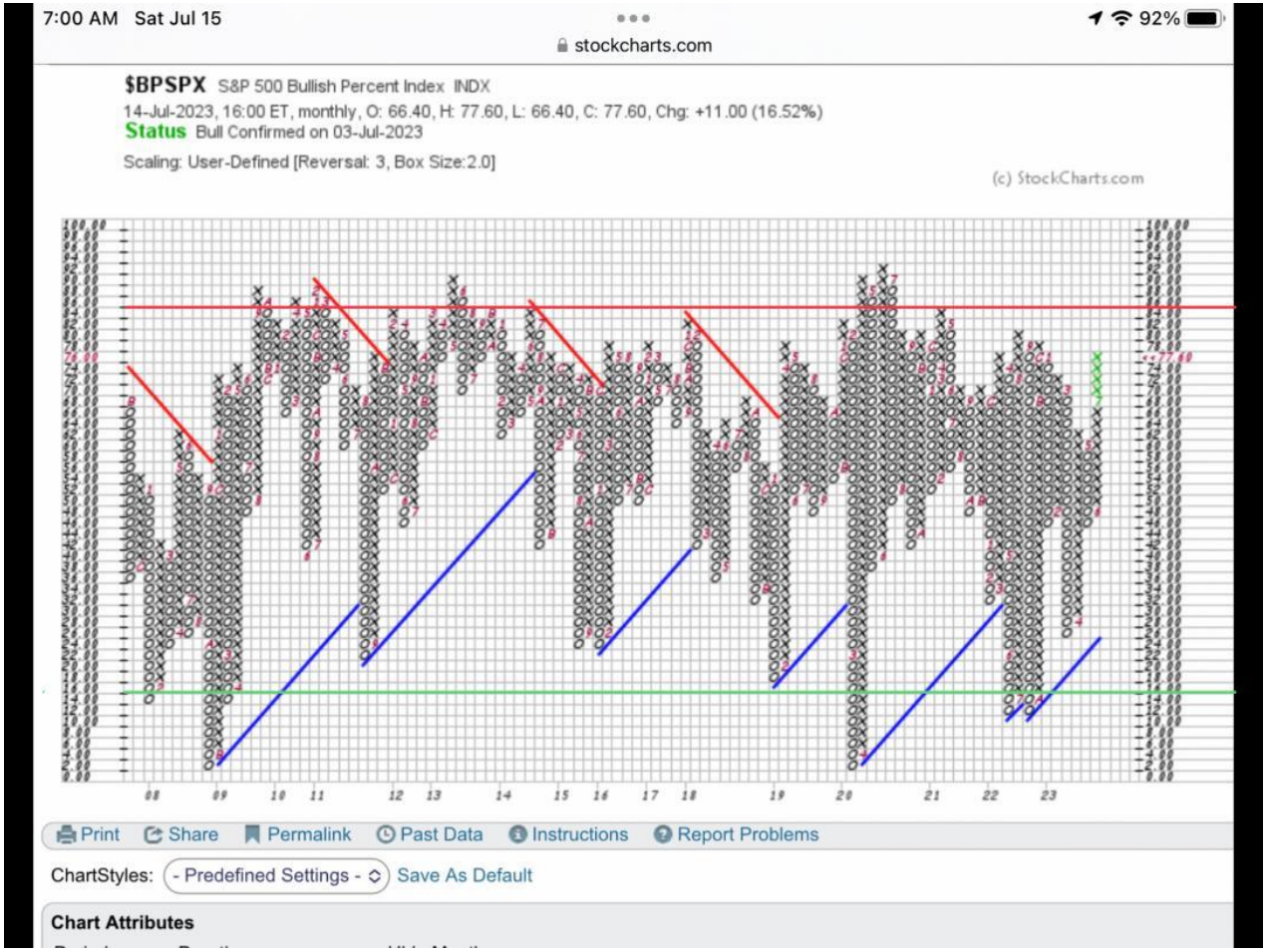
Image source: J.P. Morgan Asset Management. (2018, Jun 30). "Guide to the Markets," U.S. edition 3Q 2018, p. 16.



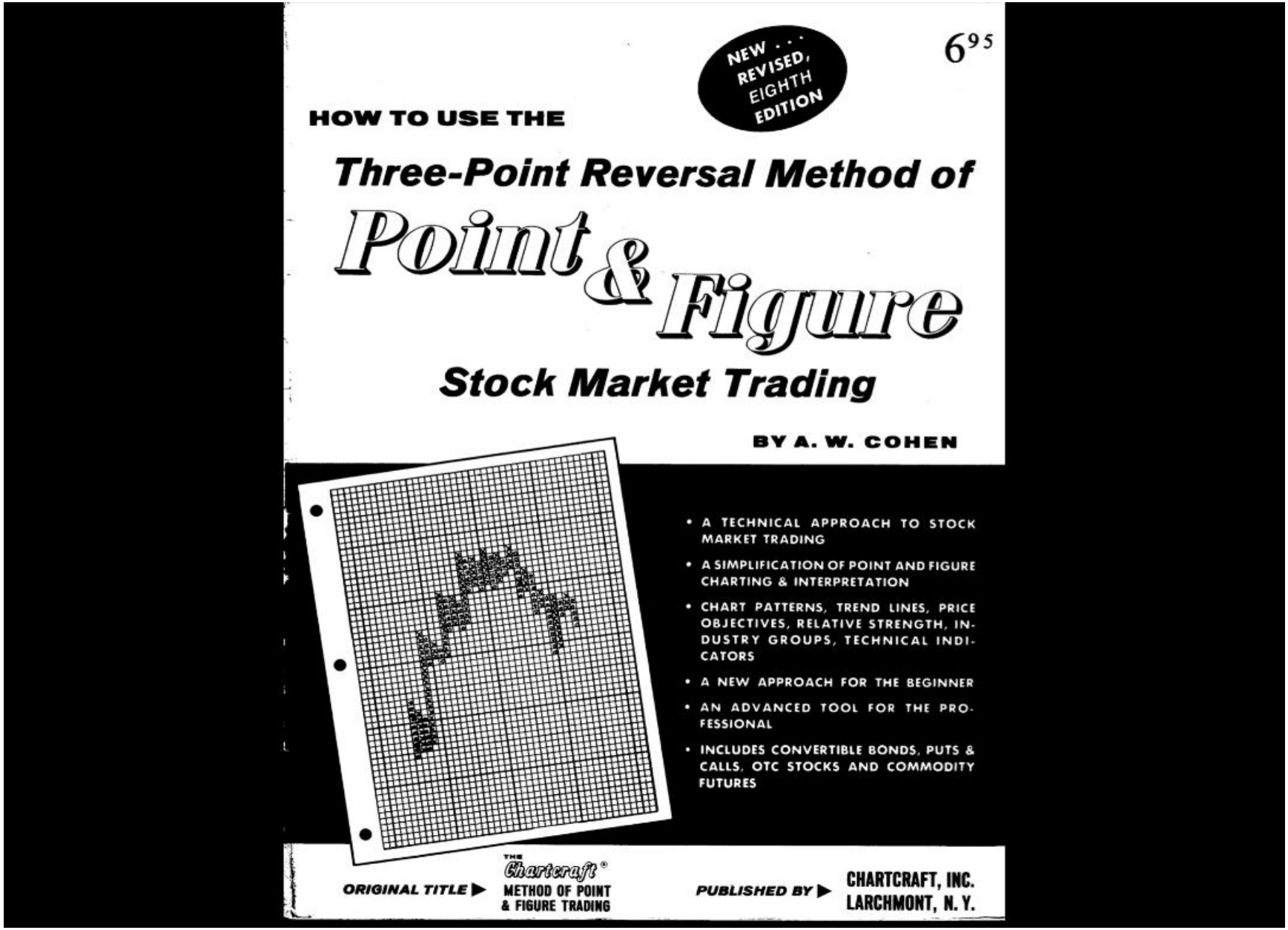
Sometimes simpler is better and some investors will just use two asset classes: stocks and bonds. Many investors do OK with a 60/40 portfolio (60% stocks, 40% bonds).

Image source: J.P. Morgan Asset Management. (2018, Jun 30). "Guide to the Markets," U.S. edition 3Q 2018, p. 64.

Sentiment (bullish percent, fear & greed)

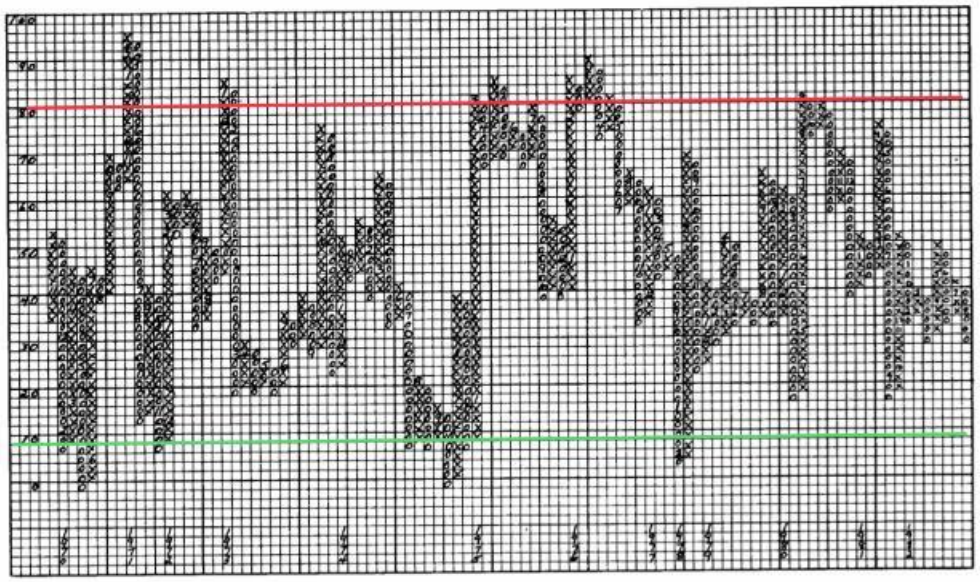


S&P 500 Bullish Percent Index ($BPSPX) on StockCharts.com (emphasis added)



Point and figure charts are useful for monitoring the Bullish Percent Index over time. This index was developed my Chartcraft, Inc. in 1955

DOW-JONES INDUSTRIALS BULLISH PERCENTAGE



AS ITS NAME IMPLIES, THE ABOVE INDICATOR IS BASED ON THE DAILY PERCENTAGE OF BULLISH STOCKS IN THE 30-DOW JONES INDUSTRIALS. A STOCK IS CONSIDERED BULLISH IF ITS MOST RECENT CHART PATTERN SHOWS THE PENETRATION OF A PREVIOUS TOP; A STOCK IS CONSIDERED BEARISH IF ITS MOST RECENT CHART PATTERN SHOWS THE PENETRATION OF A PREVIOUS BOTTOM. THE NUMBER OF BULLISH STOCKS IS TALLIED WEEKLY AND DIVIDED BY 30 TO OBTAIN THE BULLISH PERCENTAGE. THIS PERCENTAGE IS THEN PLOTTED ON A 2% BY 6% POINT AND FIGURE CHART. (EACH BOX EQUALS 2% AND 3 BOXES, OR 6%, ARE NEEDED FOR A REVERSAL OF DIRECTION.)

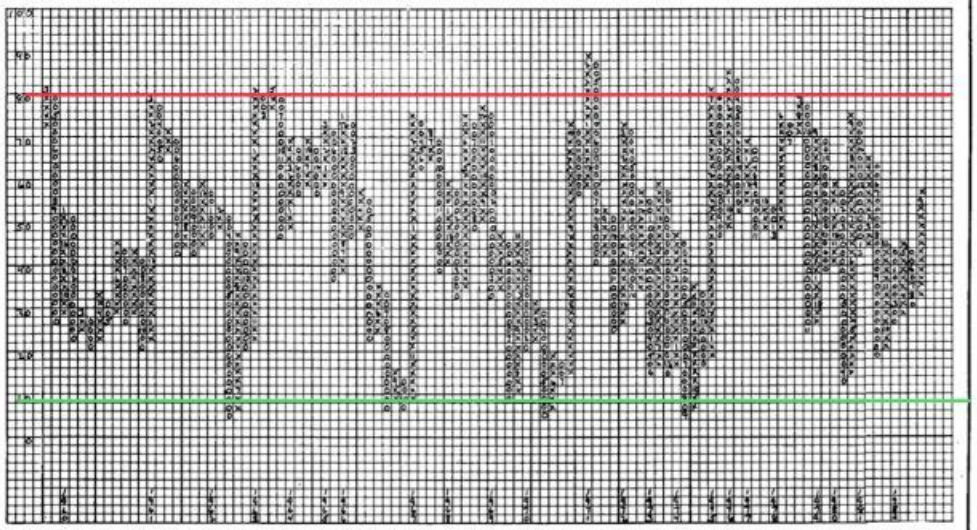
THE INTERPRETATION OF THE DJI BULLISH PERCENTAGE IS BASICALLY THE SAME AS THAT OF THE NYSE BULLISH PERCENTAGE. ALLOWANCES SHOULD BE MADE FOR THE FACT THAT, BEING BASED ONLY ON 30 STOCKS, IT IS MORE VOLATILE THAN THE BULLISH PERCENTAGE BASED ON ALL STOCKS. ITS BIG ADVANTAGE IS THAT IT CAN BE CALCULATED BY THE AVERAGE TRADER IN A FEW MINUTES.

A COLUMN OF XS BELOW THE 50% LEVEL MAY BE REGARDED AS A BULL ALERT SIGNAL; WHEN THIS COLUMN OF XS EXCEEDS A PREVIOUS COLUMN OF XS OR RISES ABOVE THE 50% LEVEL, IT MAY BE REGARDED AS A BULL CONFIRMED SIGNAL. A COLUMN OF OS ABOVE THE 50% LEVEL MAY BE REGARDED AS A BEAR ALERT SIGNAL; WHEN THIS COLUMN OF OS PENETRATES A PREVIOUS COLUMN OF OS OR DECLINES BELOW THE 50% LEVEL, IT MAY BE REGARDED AS A BEAR CONFIRMED SIGNAL.

A BEAR MARKET BOTTOM USUALLY FINDS THE DJI BULLISH PERCENTAGE BELOW 10%. A BULL MARKET TOP USUALLY FINDS THE DJI BULLISH PERCENTAGE ABOVE 70%.

Image source: Cohen, A.W. (1982). “How to use the three-point reversal method of point & figure stock market trading,” p. 105. Larchmont, NY: Chartcraft, Inc. (emphasis added) (Bullish percent on the Dow is shown)

NYSE BULLISH PERCENTAGE



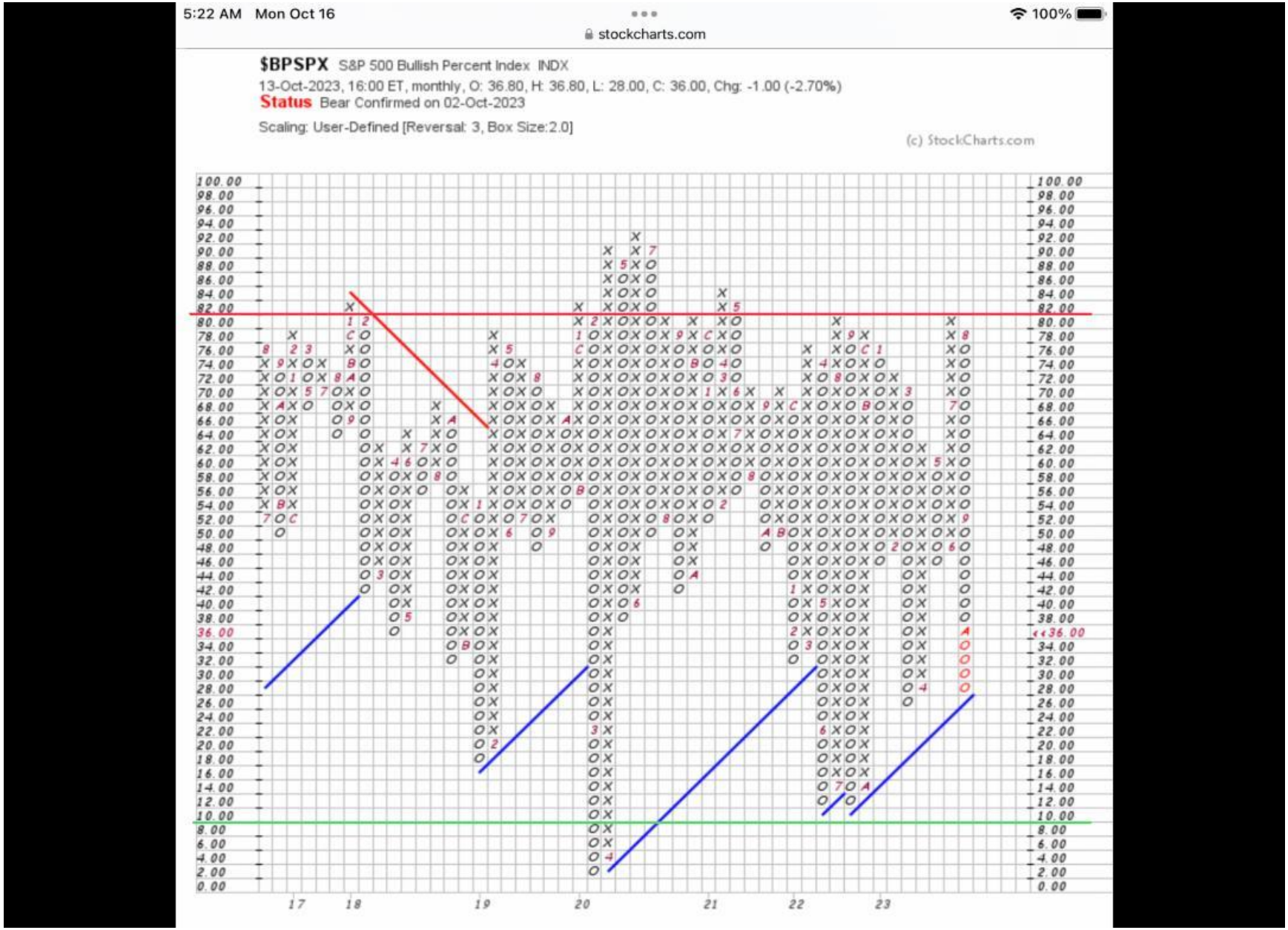
AS ITS NAME IMPLIES, THE ABOVE INDICATOR IS BASED ON THE DAILY PERCENTAGE OF BULLISH STOCKS ON THE NEW YORK STOCK EXCHANGE. A STOCK IS CONSIDERED BULLISH IF ITS MOST RECENT CHART PATTERN SHOWS THE PENETRATION OF A PREVIOUS TOP; A STOCK IS CONSIDERED BEARISH IF ITS MOST RECENT CHART PATTERN SHOWS THE PENETRATION OF A PREVIOUS BOTTOM. THE NUMBER OF BULLISH STOCKS IS TALLIED EVERY DAY AND DIVIDED BY THE TOTAL OF ALL STOCKS BOTH BULLISH AND BEARISH. THIS PERCENTAGE IS THEN PLOTTED ON A 2% BY 6% POINT AND FIGURE CHART. EACH BOX EQUALS 2%, AND 3 BOXES OR 6% ARE NEEDED FOR A CHANGE IN DIRECTION. THIS INDICATOR WAS ORIGINATED BY CHARTCRAFT, INC., IN 1955.

UPMOVES USUALLY END WHEN THE PERCENTAGE RISES ABOVE THE 70%, OR 80%, OR 90% LEVEL - DEPENDING UPON THE STRENGTH AND MOMENTUM OF THE BULL MARKET. DOWNMOVES TERMINATE WHEN THE PERCENTAGE DROPS BELOW 30%, OR 20%, OR 10% - DEPENDING UPON THE MOMENTUM OF THE BEAR MARKET.

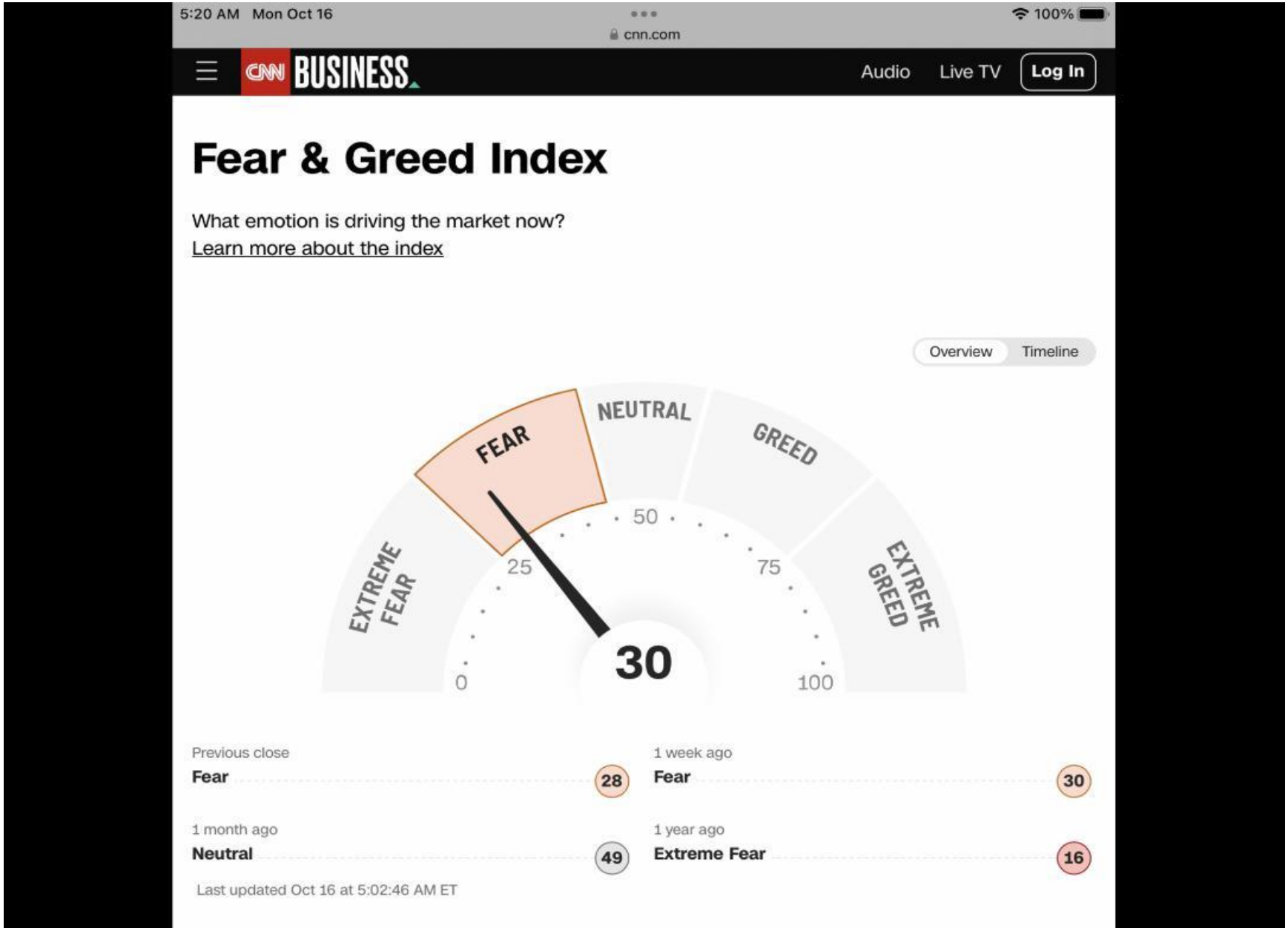
AFTER A LOW LEVEL HAS BEEN MADE, A COLUMN OF Xs BELOW THE 50% LEVEL MAY BE REGARDED AS A BULL ALERT SIGNAL; WHEN THE COLUMN OF Xs RISES ABOVE THE 50% LEVEL, THIS MAY BE REGARDED AS A BULL CONFIRMED SIGNAL. AFTER A HIGH LEVEL, A COLUMN OF Os ABOVE THE 50% LEVEL MAY BE REGARDED AS A BEAR ALERT SIGNAL; WHEN THE COLUMN OF Os DROPS BELOW 50%, THIS MAY BE REGARDED AS A BEAR CONFIRMED SIGNAL. A BULL CONFIRMED SIGNAL MAY OCCUR BELOW THE 50% LEVEL WHEN A COLUMN OF Xs EXCEEDS A PREVIOUS TOP; A BEAR CONFIRMED SIGNAL MAY OCCUR ABOVE THE 50% LEVEL WHEN A COLUMN OF Os PENETRATES A PREVIOUS BOTTOM.

ANY UPTURN FROM BELOW THE 10% LEVEL IS USUALLY THE SIGNAL FOR A NEW BULL MARKET.

Image source: Cohen, A.W. (1982). "How to use the three-point reversal method of point & figure stock market trading," p. 104. Larchmont, NY: Chartcraft, Inc. (emphasis added) (Bullish percent on the NYSE is shown)



You can see that the 80 and 10 levels still work today. I like to "buy" an S&P 500 index ETF when $BPSPX drops to 10 and "sell" when $BPSPX rises to 80. Image source: StockCharts.com (emphasis added)



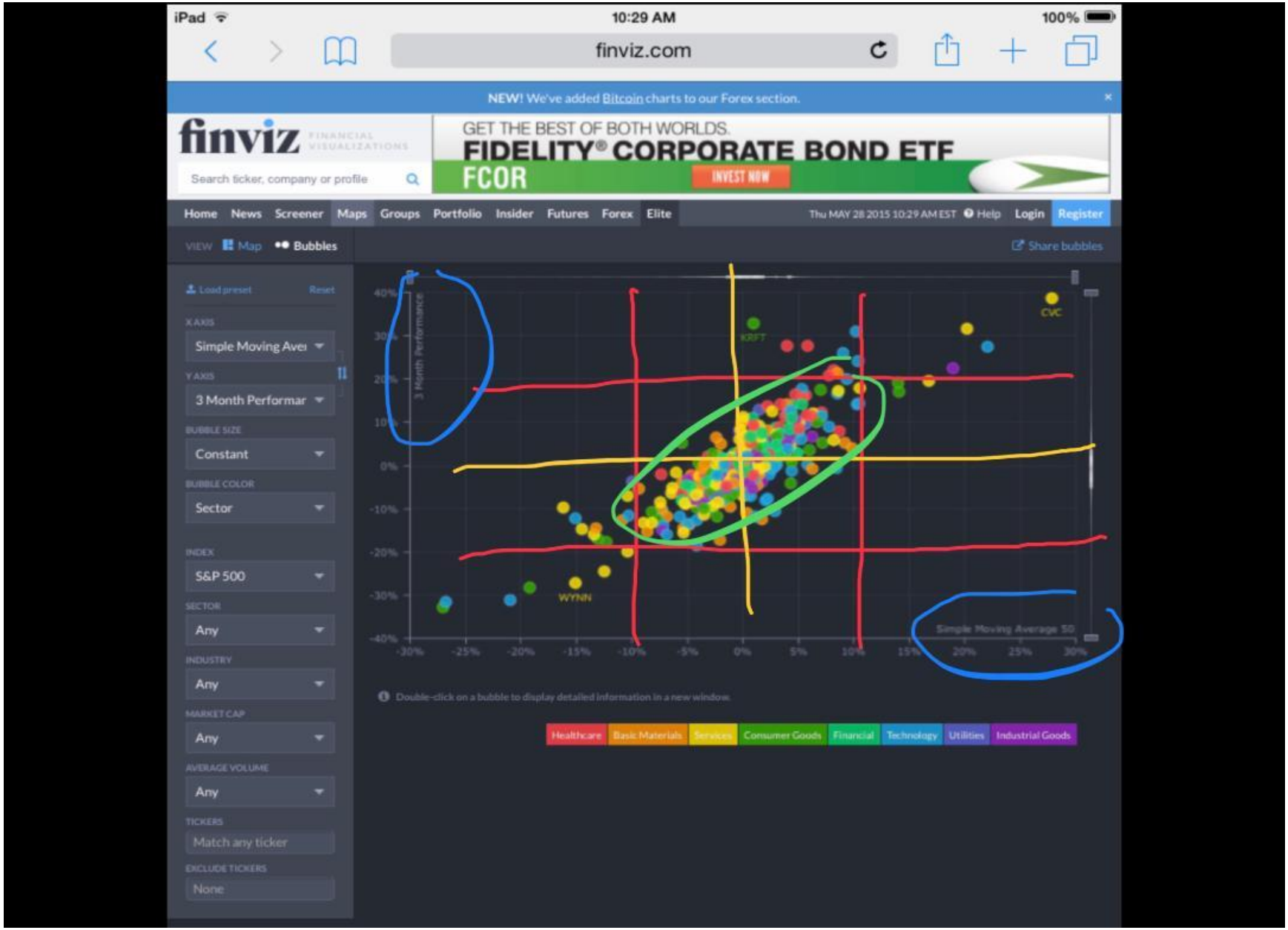
A close cousin of the S&P 500 Bullish Percent Index is the CNN Fear & Greed Index. These indices track pretty well with each other. I like to “buy” during the “extreme fear” condition and sell during the “extreme greed” condition. Keep track of the numbers!

Dividend-channel method (entry and exit signals for dividend growers)

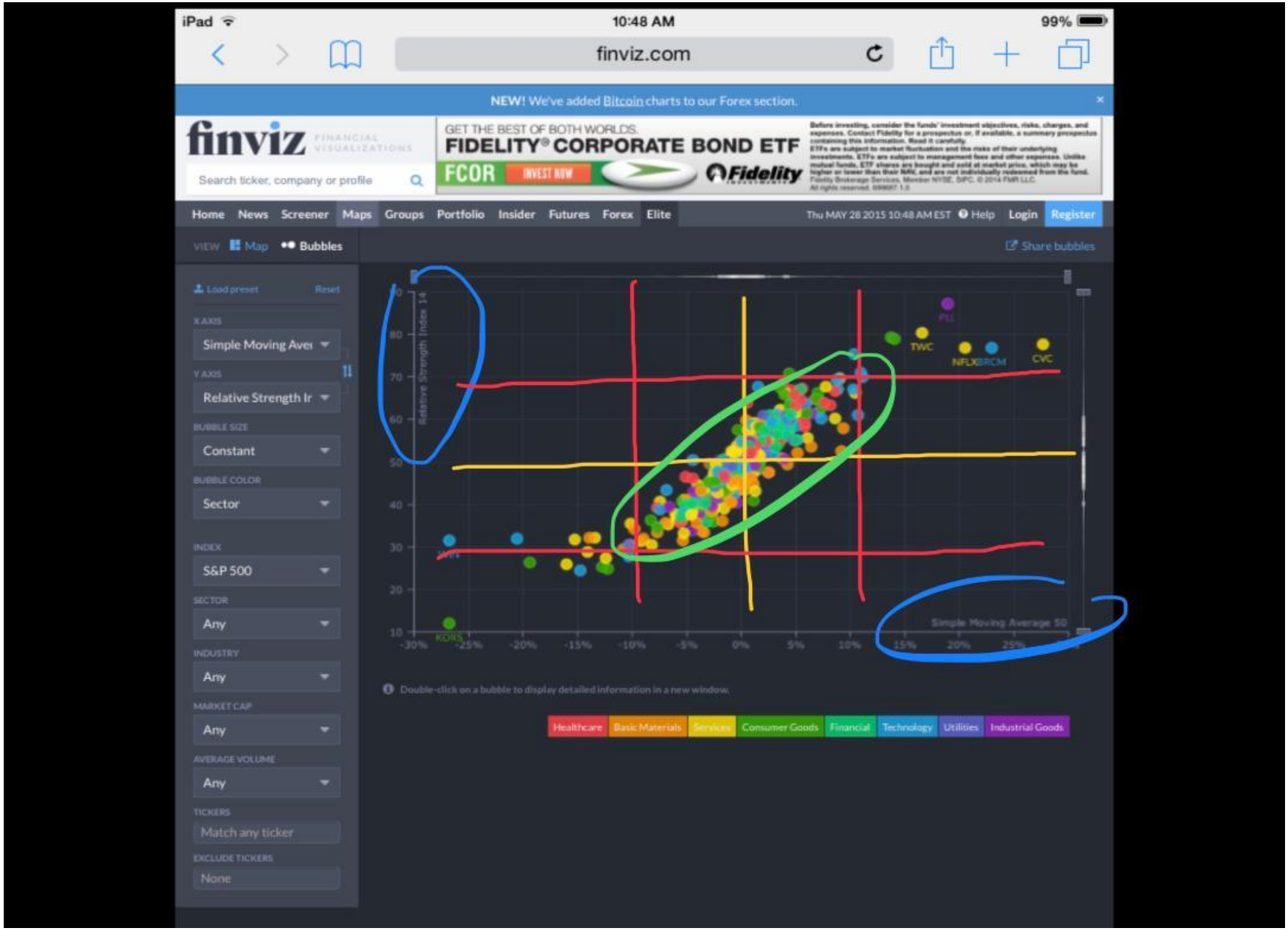
Image source: StockCharts.com (emphasis added)

The dividend-channel method uses a momentum strategy to try to maximize total return. Momentum is only one of several factors that is thought to drive risk and returns. Here's a Bloomberg screenshot from 2018 showing that a momentum strategy was one of the top 5 strategies employed in 2018 (mid year)

The dividend-channel method is a method that I devised for timing entries and exits on dividend-growers in the S&P 500. Image source: StockCharts.com (emphasis added)

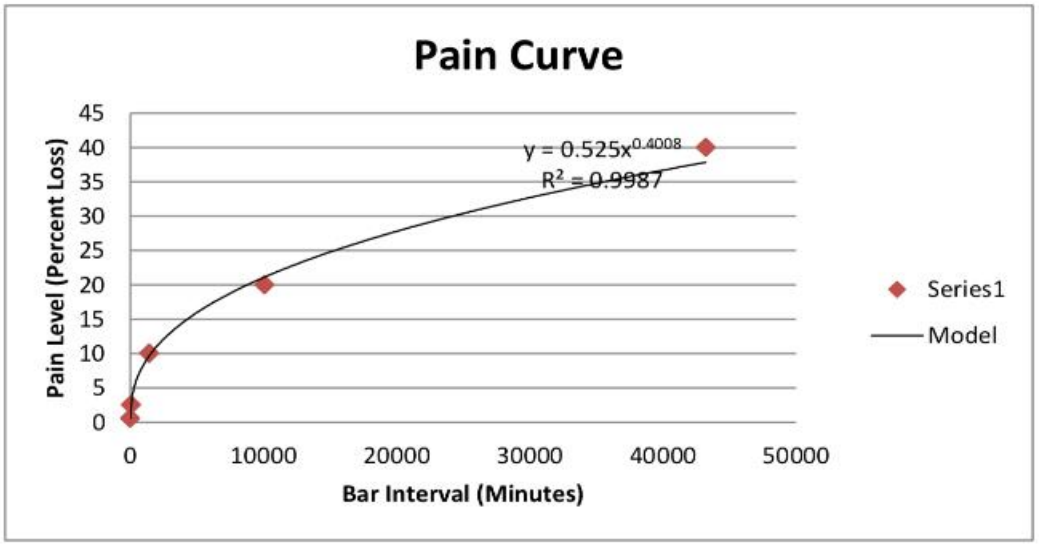


The channel method was derived by looking at scatter plots of S&P 500 stocks and noticing how their performance relates to their clustering around a 50 period simple moving average. Image source: FinViz.com [retrieved May 28, 2015] (emphasis added)

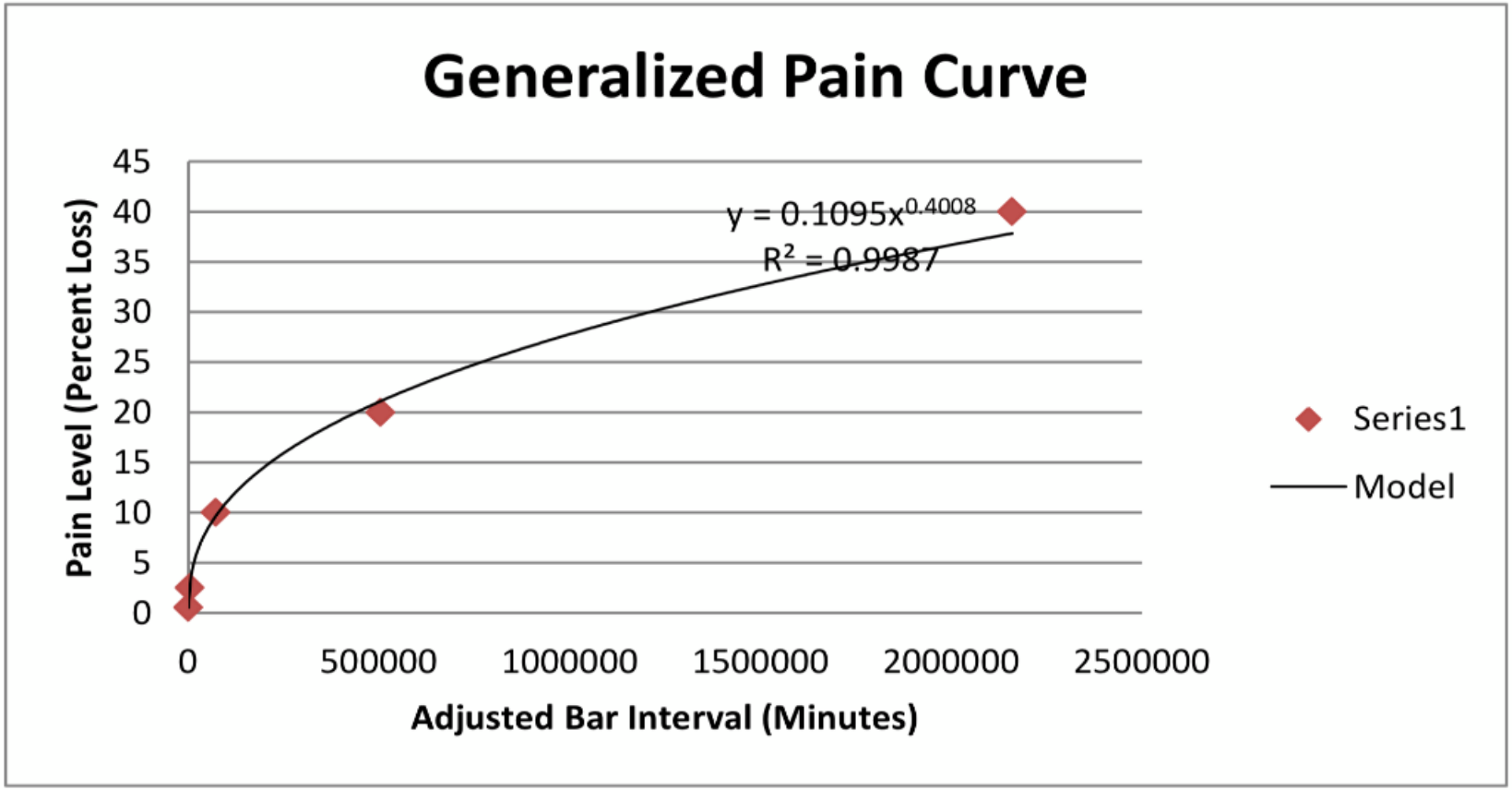


I also noticed that a range of relative strength index (RSI) values between 30 and 70 corresponded to that same spread around the 50 period simple moving average. Image source: FinViz.com [retrieved May 28, 2015] (emphasis added)

Bar Interval (Minutes)	Pain Level (Percent Loss)
1	0.55
60	2.5
1440	10
10080	20
43200	40



I used this property of the RSI to calibrate trading bands around the 50 period simple moving average for charts with various time scales (minute, hour, day, week, month). +/- 40% trading bands would be used on monthly charts.



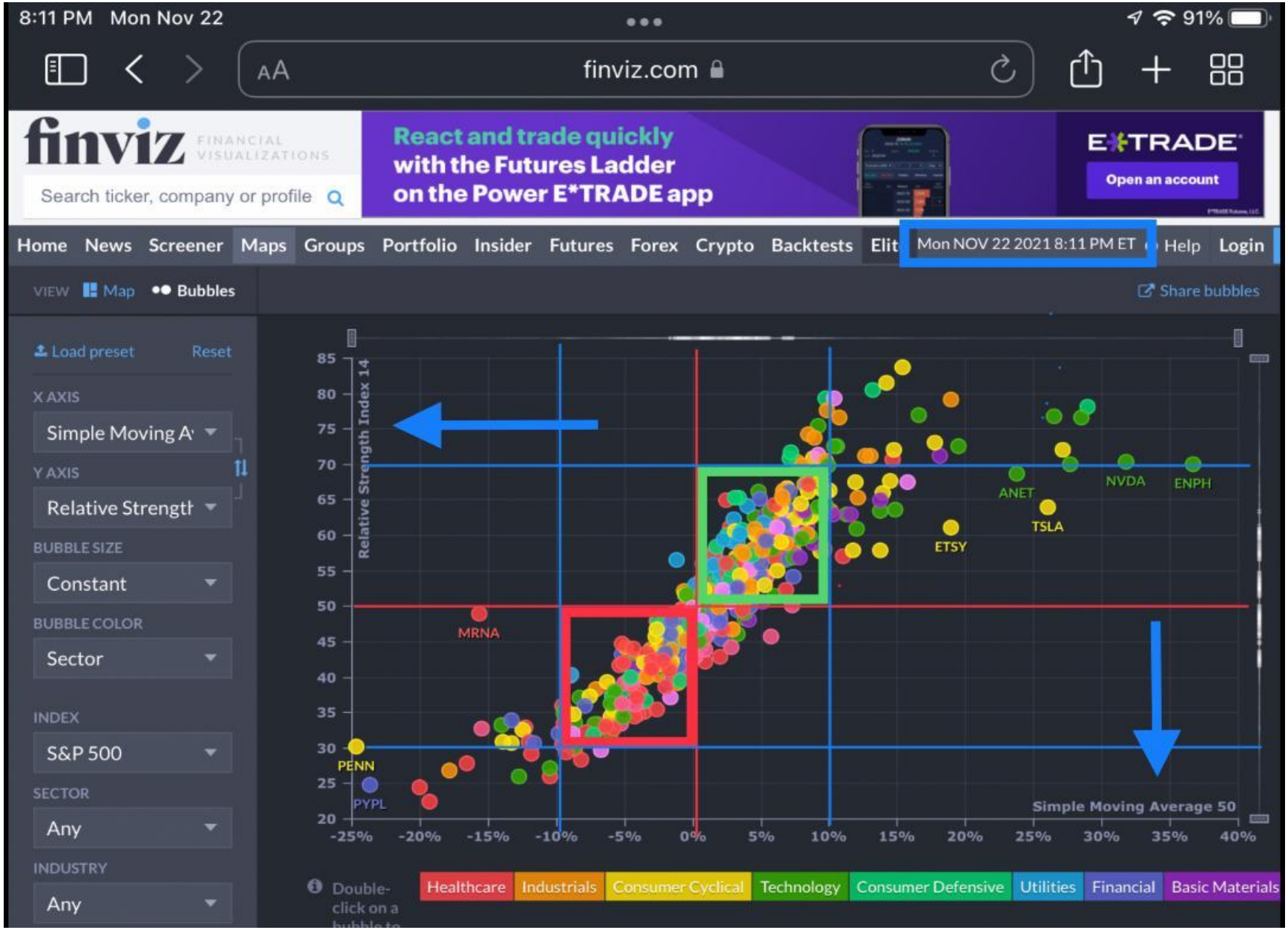
I also found that I could find calibrated trading bands for any simple moving average (SMA) that was desired – not only the 50 period.

Simple moving average	Magnitude	Period	Adjusted Minutes	Trading band size (Pain Level)
10 day	10	day	14400	5.1
20 day	20	day	28800	6.7
50 day	50	day	72000	9.7
100 day	100	day	144000	12.8
200 day	200	day	288000	16.9
250 day	250	day	360000	18.5
500 day	500	day	720000	24.4
10 week	10	week	100800	11.1
20 week	20	week	201600	14.6
50 week	50	week	504000	21.1
100 week	100	week	1008000	27.9
200 week	200	week	2016000	36.8
250 week	250	week	2520000	40.3
500 week	500	week	5040000	53.2
10 month	10	month	432000	19.9
20 month	20	month	864000	26.2
50 month	50	month	2160000	37.9
100 month	100	month	4320000	50.0
200 month	200	month	8640000	66.0
250 month	250	month	10800000	72.2
500 month	500	month	21600000	95.3

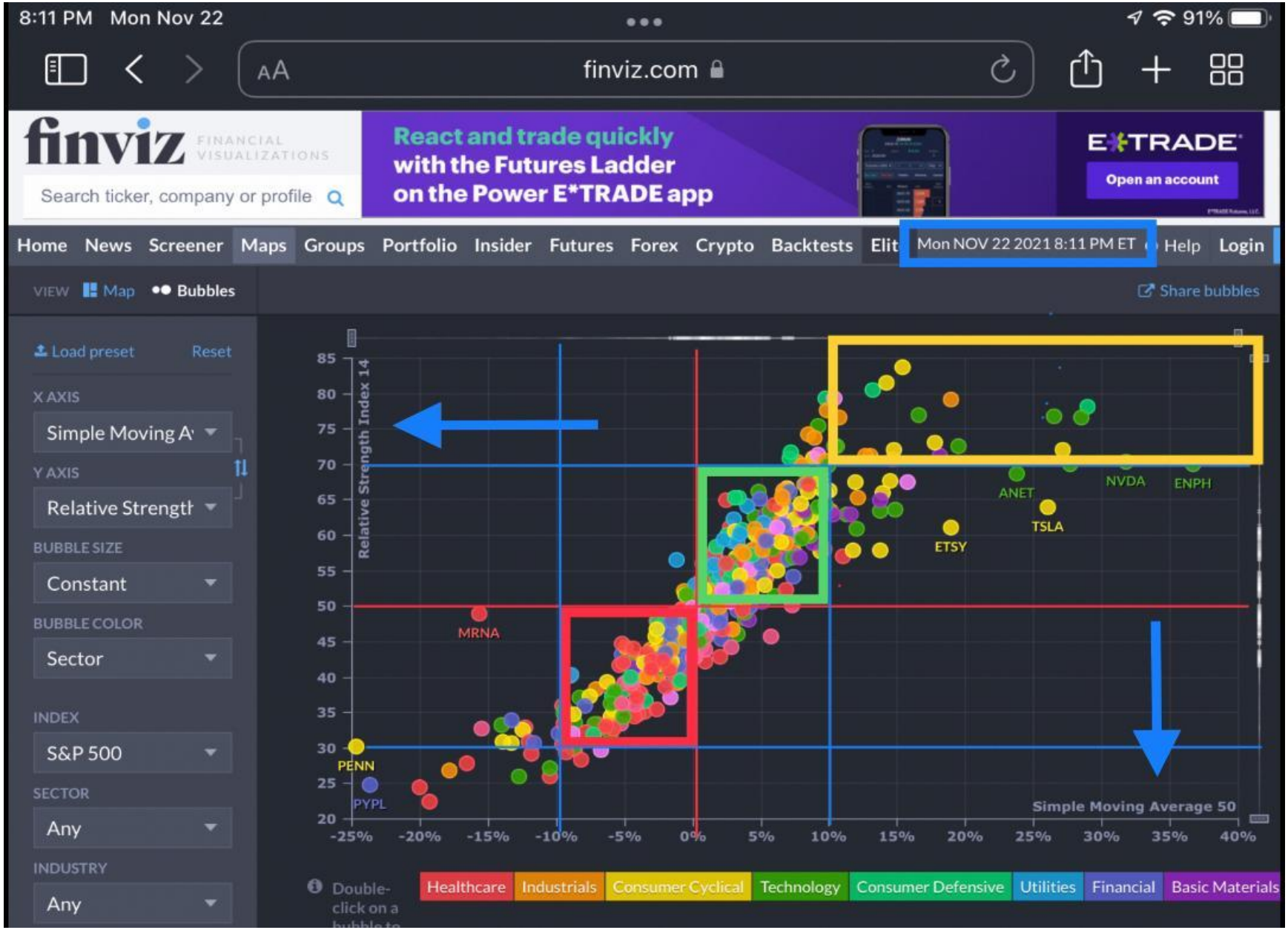
I arranged the results from the generalized pain curve into a table. It's a bit easier to use than the formula. The values show the amount of pain an investor (or algorithm) is willing to tolerate before bailing out and taking a loss.

With the channel method, the desirable stocks in the green box are travelling in the upper channel and the undesirable stocks in the red box are travelling in the lower channel. Image source: FinViz.com [accessed Nov 22, 2021] (emphasis added) This is a daily chart.

This is a monthly chart (each bar represents one month). The overall time period is ten years. Time flows from left to right. We consider both the price action within the channels and the dividend stream. Image source: StockCharts.com (emphasis added)



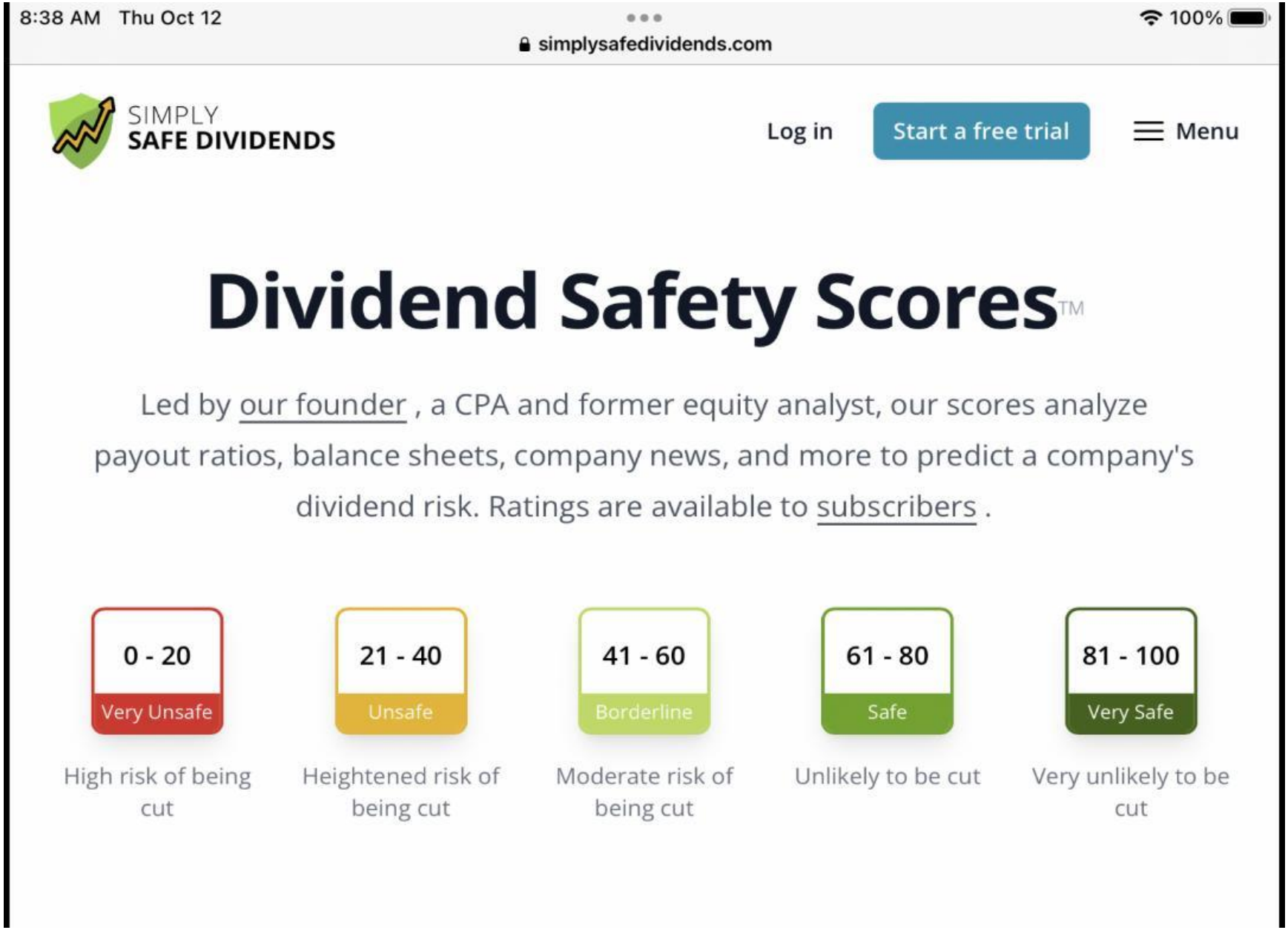
You may notice that these scatterplots from 2021 confirm the same basic pattern found in 2015. The RSI is constrained between 30 and 70 for everything but the outliers. Image source: FinViz.com [accessed Nov 22, 2021] (emphasis added). This is also a daily chart.



As I continued to develop the method, I also figured out how to exploit stocks in the speculative space (yellow box). Image source: FinViz.com [accessed Nov 22, 2021] (emphasis added). This is a daily chart.

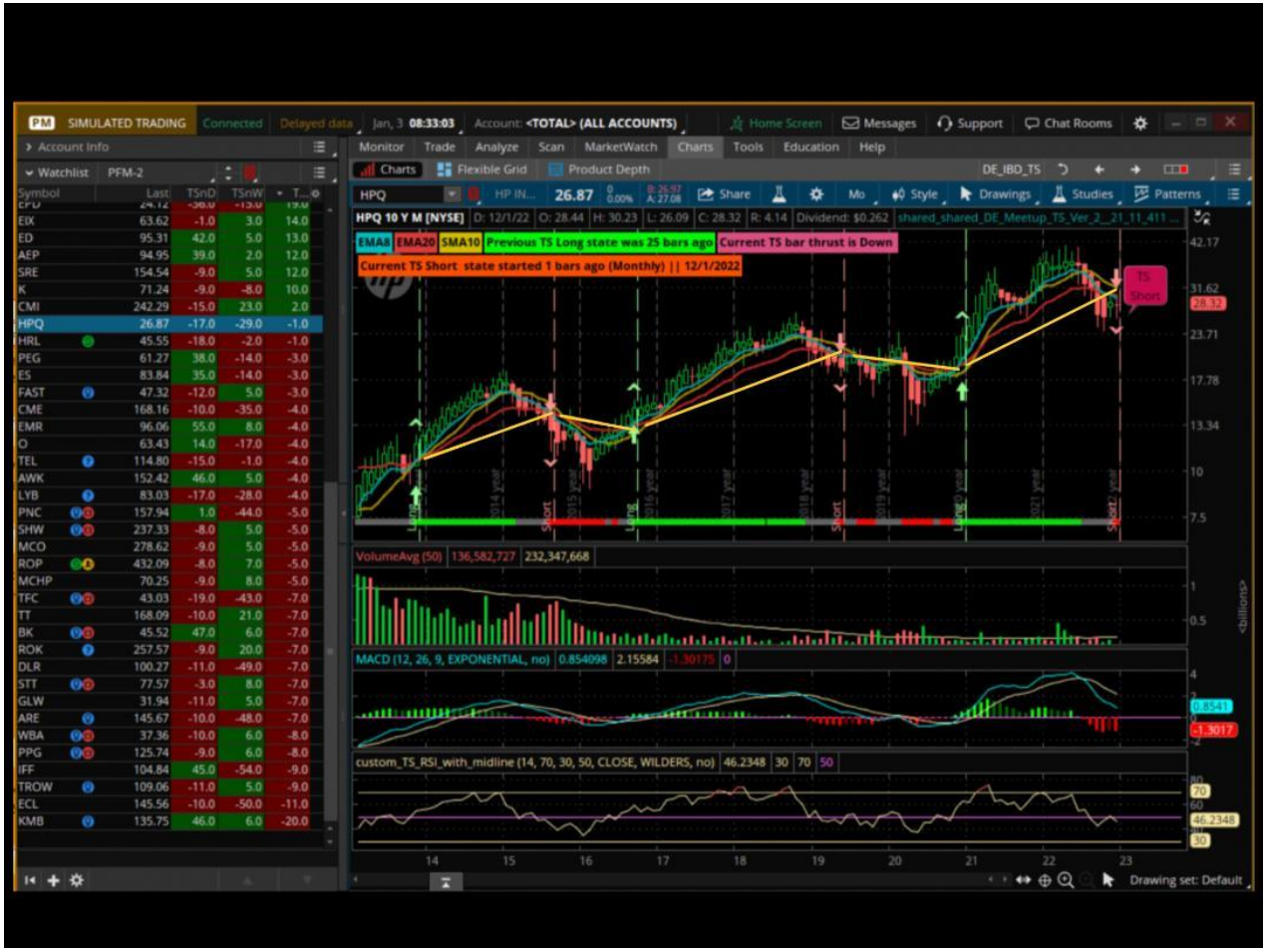
Note that this stock has been in a speculative condition for quite a long time. Later, I added the dividend stream to improve the analysis.
Image source: StockCharts.com (emphasis added)

As it turns out, an analysis of the dividend stream tells a lot about the fitness of the company. I consider it even more important than the price action.
Image source: StockCharts.com (emphasis added)



I perform my own dividend stream analysis, but others such as Simply Safe Dividends provide similar analytics.

Anil Parikh's Triple Screen (entry and exit signals for any stocks)



Custom plug-in for thinkorswim™ platform (emphasis added)
https://www.meetup.com/DelawareIBDMeetup

This is an example of a triple screen ”buy” signal (monthly charts).
The triple screen is also based upon a momentum strategy (emphasis added)

And an example of a triple screen “sell” signal (emphasis added).

Anil Parikh's Triple Sort (popularity ranking for any list of stocks)

The Triple Sort is on the left-hand side of the screen. I have been experimenting with "arrows," "bullets," and "stars". These are different prioritization strategies in choosing stock symbols from the weekly "playlist" on the left.

https://www.meetup.com/DelawareIBDMeetup

Dimensions of Popularity

ROGER G. IBBOTSON AND THOMAS M. IDZOREK

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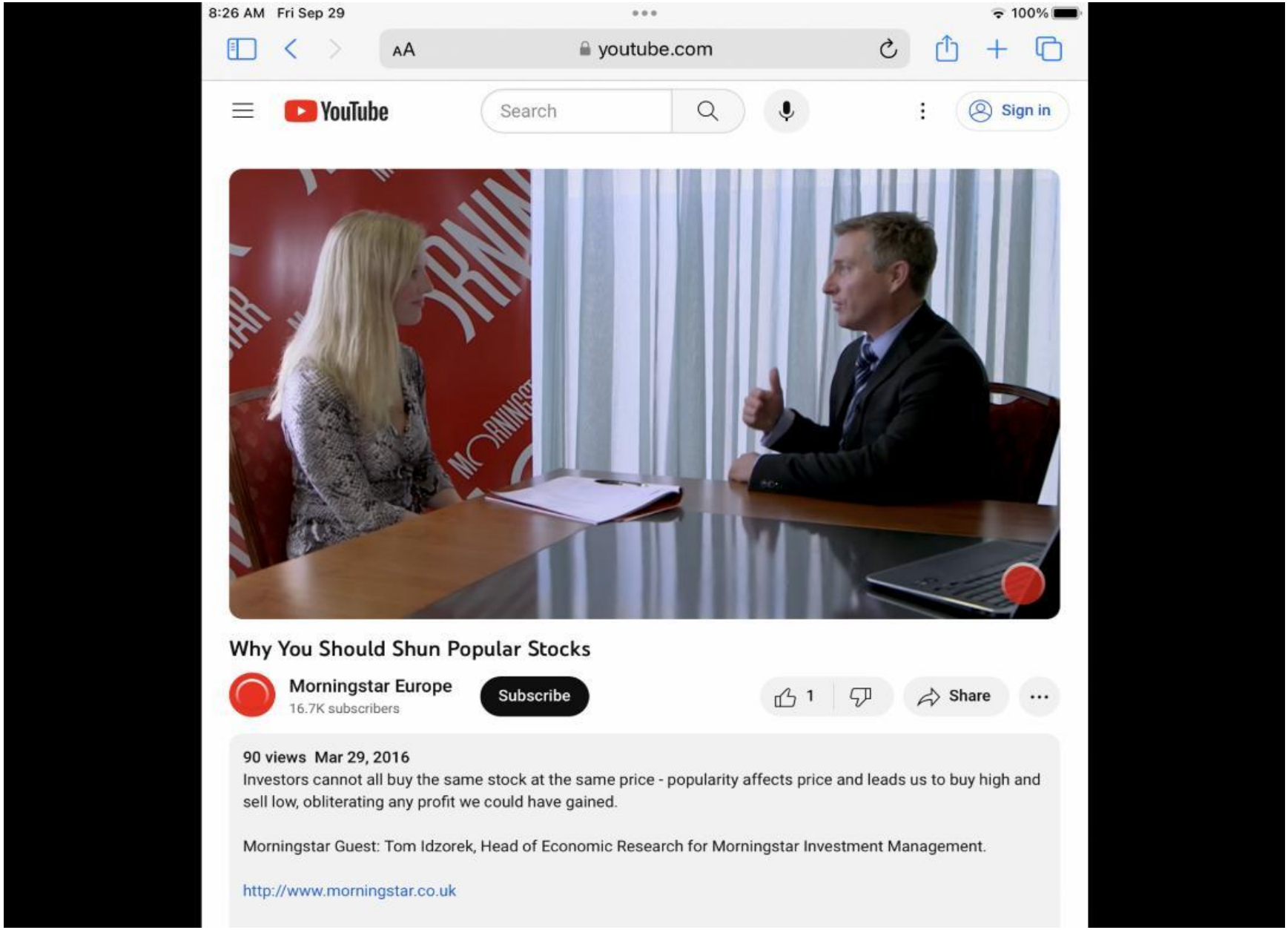
We believe that most of the best-known market premiums and anomalies can be explained by an intuitive and naturally occurring (social or behavioral) phenomenon observed in countless settings: popularity. Popularity is often defined as a social phenomenon associated with being admired, sought after, well known, and/or accepted. Within a wide range of possible categories—people, food, fashion, music, places to live, types of pets, vacation destinations, television shows, and the like—there is an implicit popularity spectrum or rank. Within each of these categories, there are different criteria for estimating popularity. For our purposes, the quality of these ranking criteria is not important; what is important is that within any given category there is a natural ordering in which some constituents are more popular and others are less popular. Some aspects of popularity are systematic, or more or less permanent (for example, modern society seems to prefer thin to fat or tall to short). Other aspects of popularity may be transitory or exist only as fads (for example, mullets, or Mohawk hairstyles). Whether due to systematic trends or idiosyncratic evolution, there is a natural movement as some popular items become relatively less popular and some portion of the unpopular items become relatively more popular, e.g., necktie width. Society places a greater relative value (monetary or otherwise) on the more popular items.

How can we apply popularity to the relative performance of different asset classes and different securities? Asset pricing theories have long recognized that expected returns should not be the same for the various instruments in the marketplace. The primary explanation for these differences has been differences in risk. Of course, risk is unpopular—investors do not like risk and want to be compensated for it.

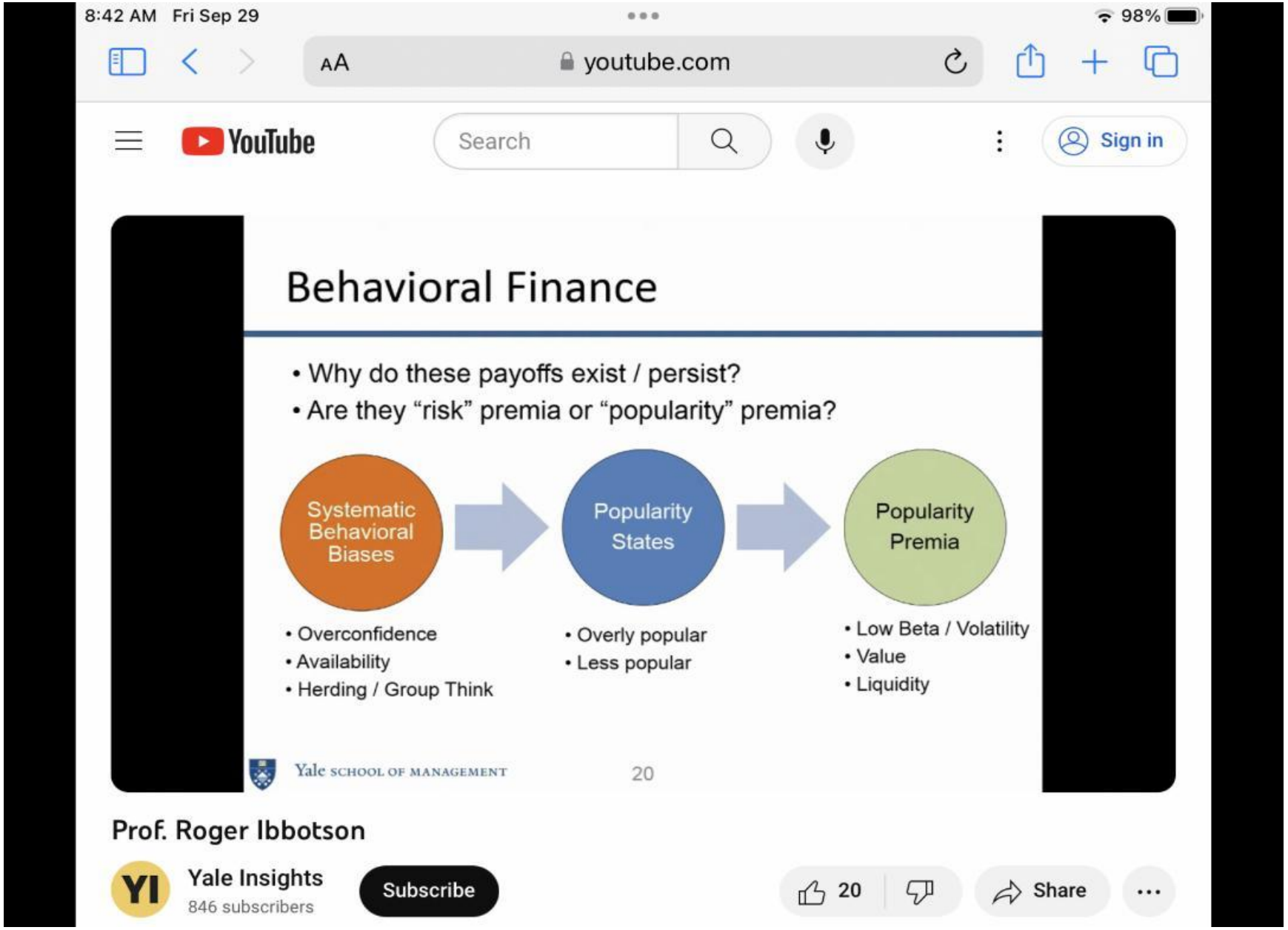
Across the asset classes, Ibbotson and Sinquefield [1976a] measured various types of risk and risk premiums. These included the equity risk premium and later the small stock premium for stocks, and the horizon risk premium and the default premium for bonds. When added to the base of expected inflation and real interest rates, the stock and bond markets and their components can be forecasted, as did Ibbotson and Sinquefield [1976b], by extrapolating premiums on top of the term structure of inflation and real interest rates extracted from the Treasury bond market.

The higher returns of stocks over bonds are explained by the fact that stocks are much riskier than bonds. Furthermore, small stocks are riskier than large stocks, and longer-term bonds with default risk are much riskier than shorter-term bonds with less default risk. Across asset classes, the risk and return para-

Image source: Ibbotson, Roger G. & Thomas M. Idzorek. (2014). "Dimensions of popularity," *J. of Portfolio Management* 40(5), pp. 68-78.



https://www.youtube.com/watch?v=tvwOjm8fDLU



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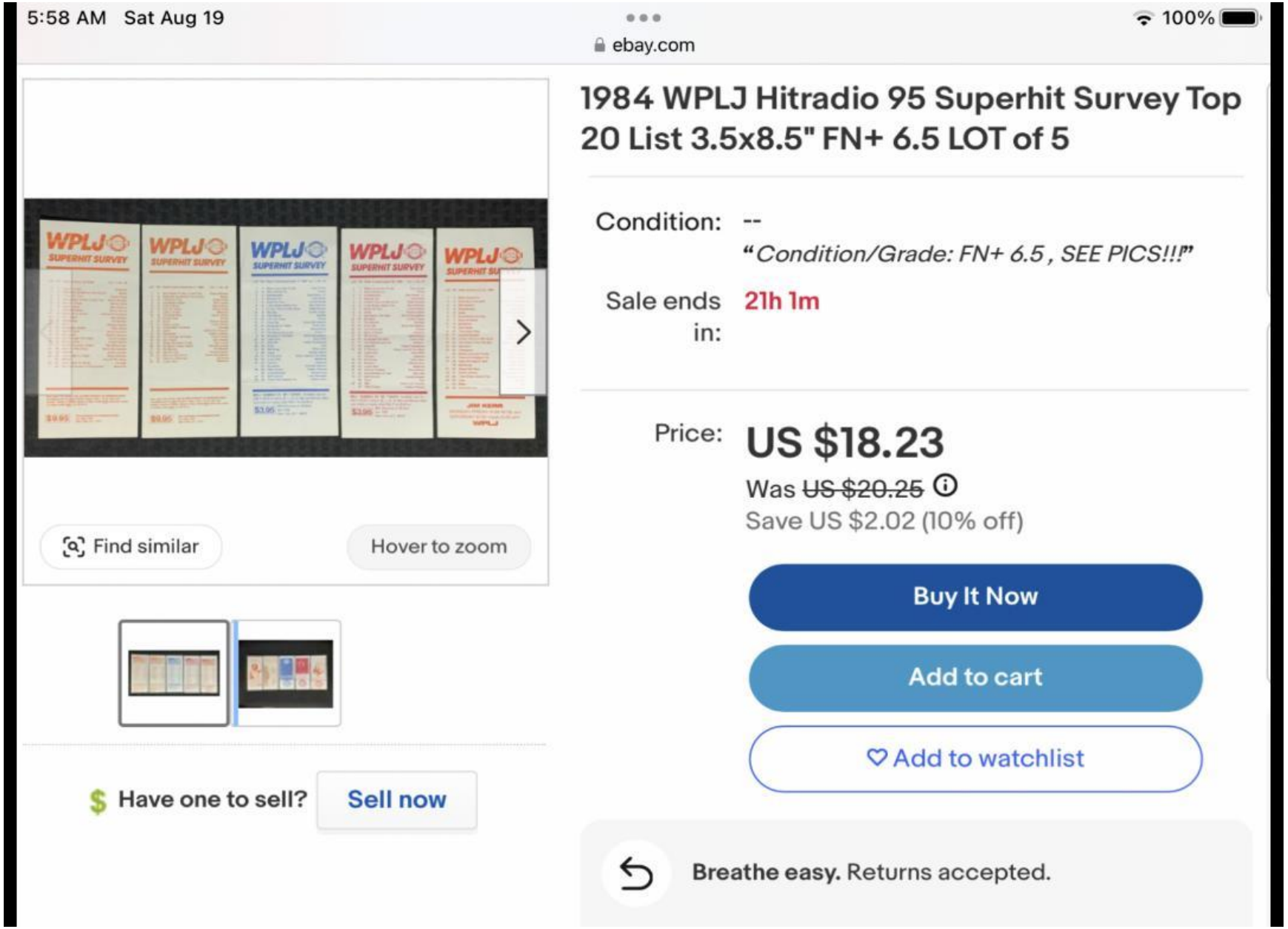
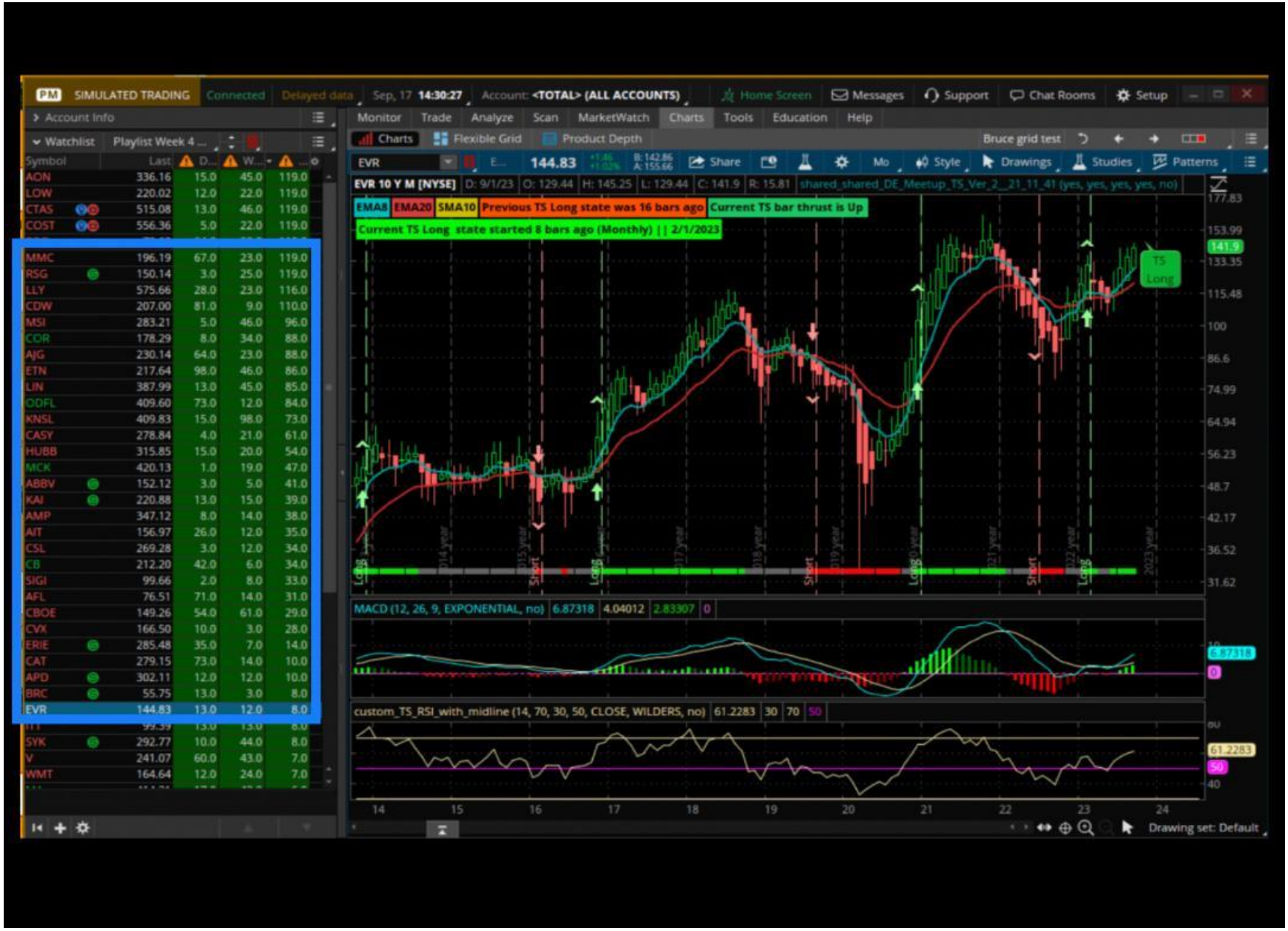


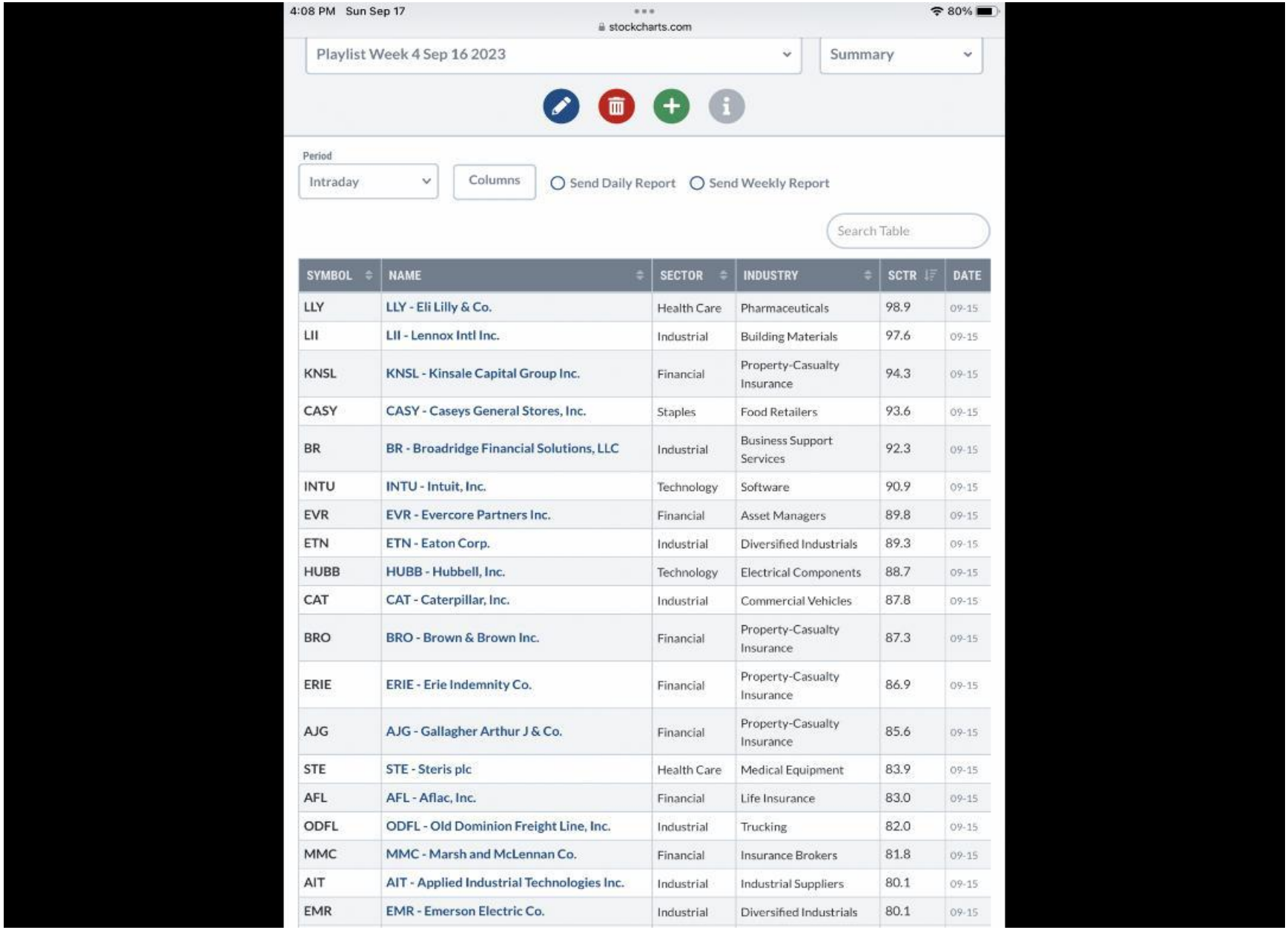
I began by making an analogy between Top 40 style music playlists and a proposed popularity ranking of stocks based upon an objective measure of technical ranking – StockCharts Technical Rank (SCTR score)
Image source: eBay

Using *Billboard* chart annotation terminology from the 1970s, the “arrows” correspond to the stocks with the most recent “buy” signals.

The “bullets” are the strongest performers over the longest period of time (similar to gold and platinum records on the *Billboard* charts).



The “stars” are the stocks in the middle that exhibit the greatest rise in popularity from week to week (these might be attractive to swing traders). To assign a star to a stock symbol, I need to see a week to week improvement in SCTR scores over a three week period.



SYMBOL	NAME	SECTOR	INDUSTRY	SCTR	DATE
LLY	LLY - Eli Lilly & Co.	Health Care	Pharmaceuticals	98.9	09-15
LII	LII - Lennox Intl Inc.	Industrial	Building Materials	97.6	09-15
KNSL	KNSL - Kinsale Capital Group Inc.	Financial	Property-Casualty Insurance	94.3	09-15
CASY	CASY - Caseys General Stores, Inc.	Staples	Food Retailers	93.6	09-15
BR	BR - Broadridge Financial Solutions, LLC	Industrial	Business Support Services	92.3	09-15
INTU	INTU - Intuit, Inc.	Technology	Software	90.9	09-15
EVR	EVR - Evercore Partners Inc.	Financial	Asset Managers	89.8	09-15
ETN	ETN - Eaton Corp.	Industrial	Diversified Industrials	89.3	09-15
HUBB	HUBB - Hubbell, Inc.	Technology	Electrical Components	88.7	09-15
CAT	CAT - Caterpillar, Inc.	Industrial	Commercial Vehicles	87.8	09-15
BRO	BRO - Brown & Brown Inc.	Financial	Property-Casualty Insurance	87.3	09-15
ERIE	ERIE - Erie Indemnity Co.	Financial	Property-Casualty Insurance	86.9	09-15
AJG	AJG - Gallagher Arthur J & Co.	Financial	Property-Casualty Insurance	85.6	09-15
STE	STE - Steris plc	Health Care	Medical Equipment	83.9	09-15
AFL	AFL - Aflac, Inc.	Financial	Life Insurance	83.0	09-15
ODFL	ODFL - Old Dominion Freight Line, Inc.	Industrial	Trucking	82.0	09-15
MMC	MMC - Marsh and McLennan Co.	Financial	Insurance Brokers	81.8	09-15
AIT	AIT - Applied Industrial Technologies Inc.	Industrial	Industrial Suppliers	80.1	09-15
EMR	EMR - Emerson Electric Co.	Industrial	Diversified Industrials	80.1	09-15

In order to track the potential “stars,” I need to generate some synthetic data - namely a “playlist” similar to the *Billboard* music charts each week using SCTR scores for the final rankings.

Summary and conclusion

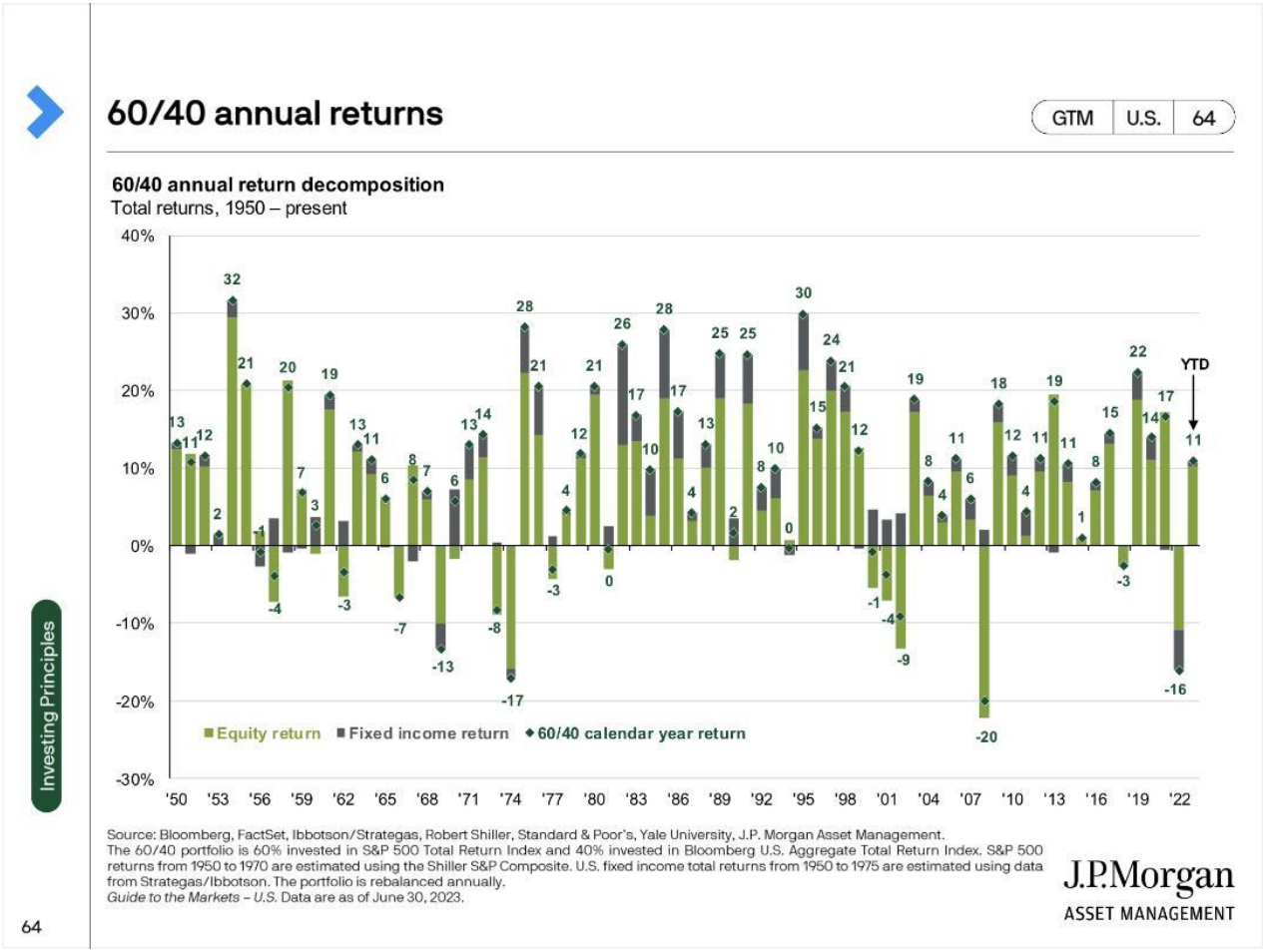


Image source: J.P. Morgan Asset Management. (2023, Jun 30). "Guide to the markets," U.S. edition, 3Q 2023, p. 64.

Equities

Annual returns and intra-year declines

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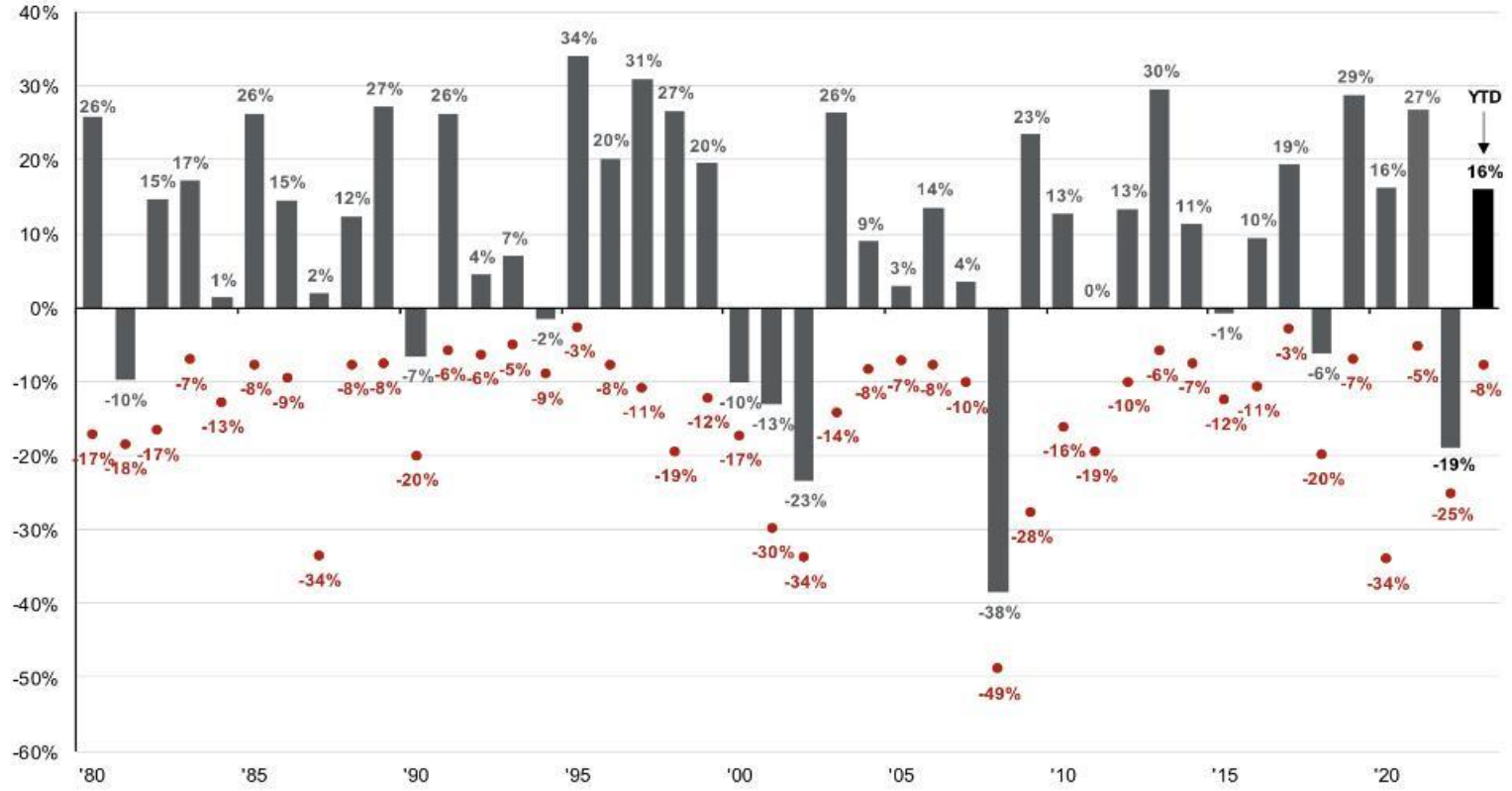
S&P intra-year declines vs. calendar year returns

Despite average intra-year drops of 14.3%, annual returns were positive in 32 of 43 years



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.
Returns are based on price index only and do not include dividends. Intra-year drops refers to the largest market drops from a peak to a trough during the year. For illustrative purposes only. Returns shown are calendar year returns from 1980 to 2022, over which time period the average annual return was 8.7%.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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Image source: J.P. Morgan Asset Management. (2023, Jun 30). "Guide to the markets," U.S. edition, 3Q 2023, p. 15.

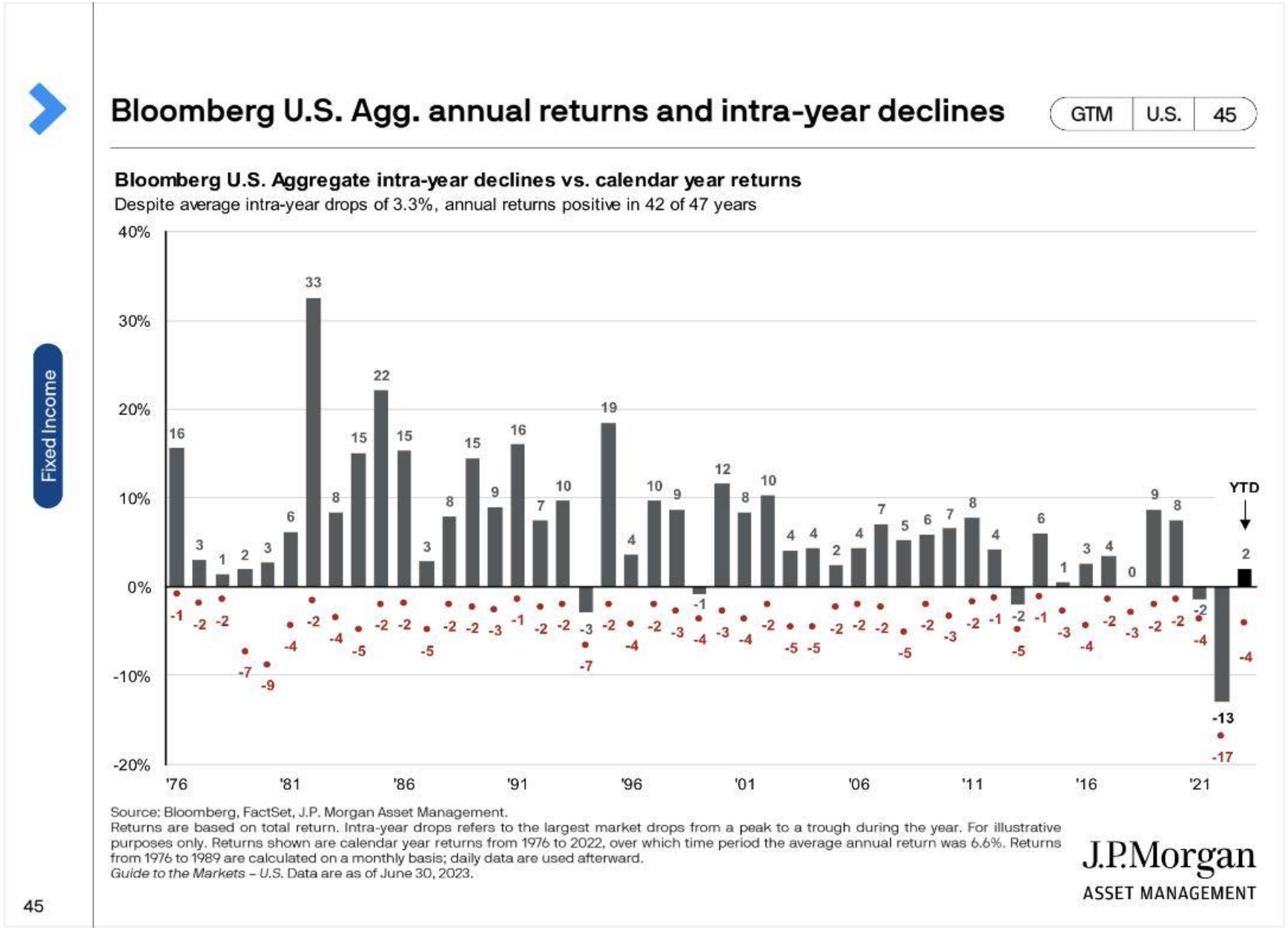
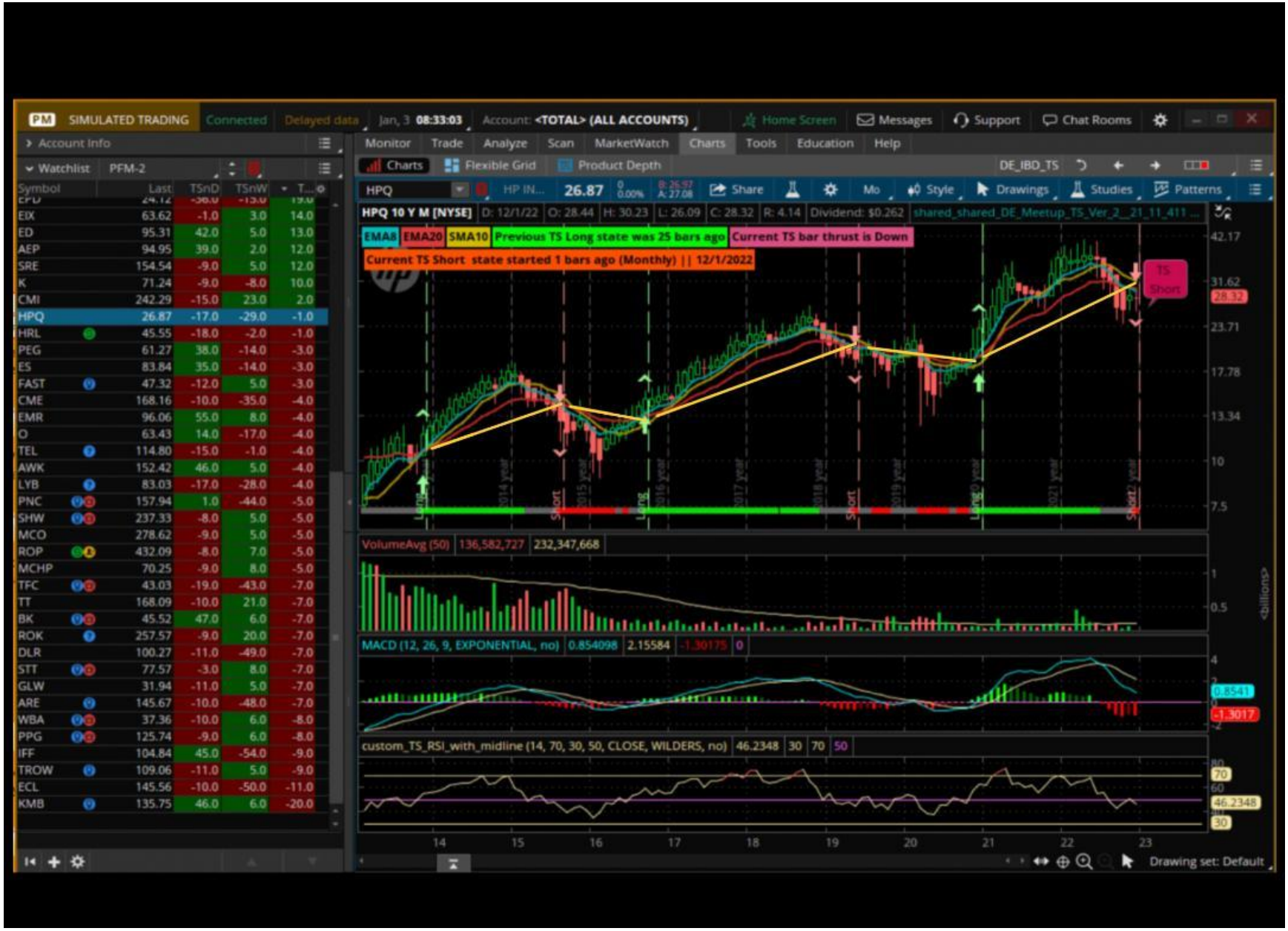


Image source: J.P. Morgan Asset Management. (2023, Jun 30). "Guide to the markets," U.S. edition, 3Q 2023, p. 45.



The idea behind Anil Parikh's Triple Screen is that if you "buy" when the software gives you a "buy" signal and "sell" when the software gives you a "sell" signal, then you might expect performance to look like that obtained if you were to stitch the rising yellow line segments together (emphasis added).

Time, diversification and the volatility of returns

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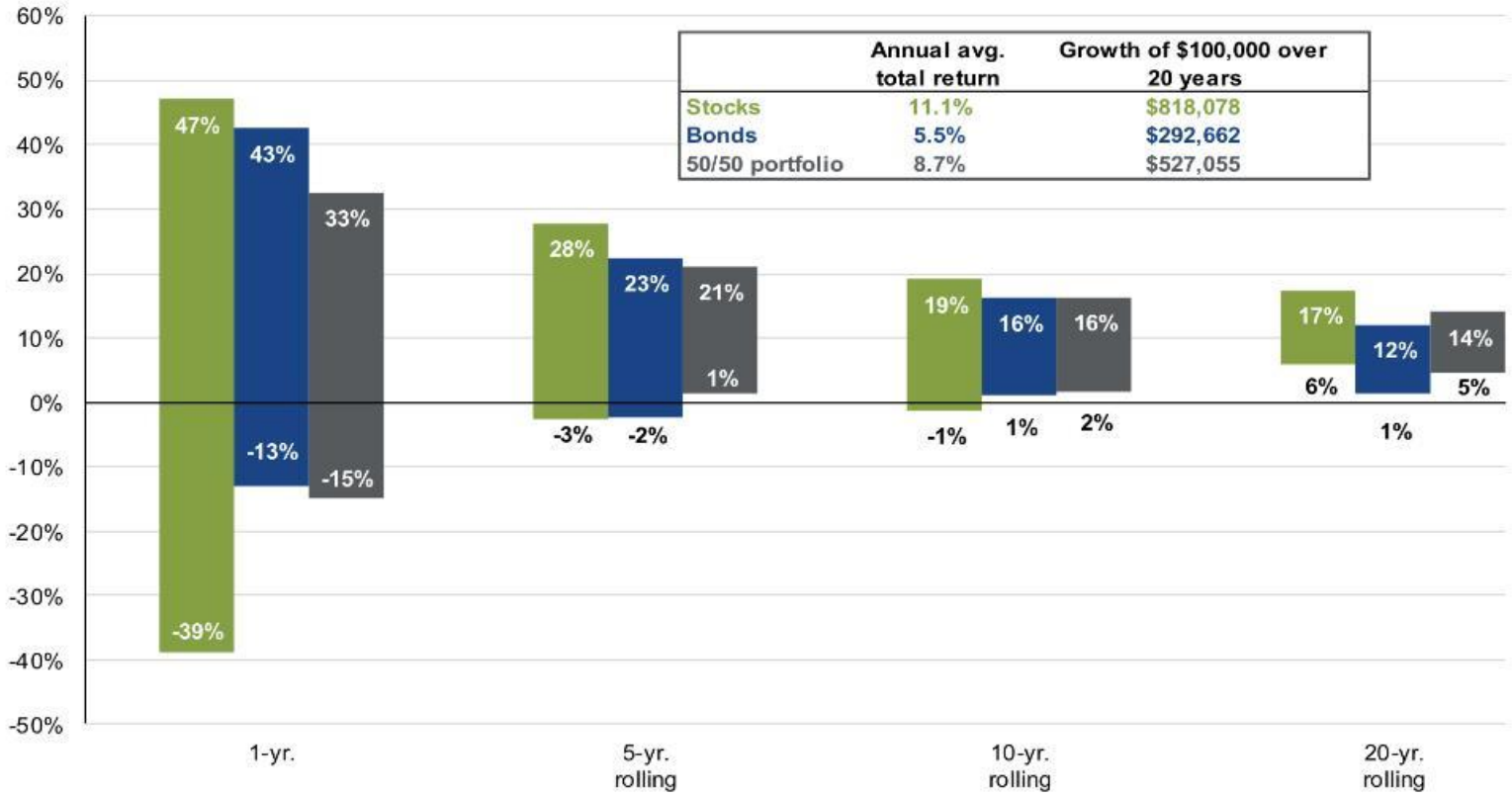
Range of stock, bond and blended total returns
Annual total returns, 1950-2022



	Annual avg. total return	Growth of $100,000 over 20 years
Stocks	11.1%	$818,078
Bonds	5.5%	$292,662
50/50 portfolio	8.7%	$527,055

Source: Bloomberg, FactSet, Federal Reserve, Robert Shiller, Strategas/Ibbotson, J.P. Morgan Asset Management.
Returns shown are based on calendar year returns from 1950 to 2021. Stocks represent the S&P 500 Shiller Composite and Bonds represent Strategas/Ibbotson for periods from 1950 to 2010 and Bloomberg Aggregate thereafter. Growth of $100,000 is based on annual average total returns from 1950 to 2022.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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Investing Principles

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On the other hand, fiduciaries generally tell you that time spent in the market is usually more important than timing the market in terms of long-term returns.
Image source: J.P. Morgan Asset Management. (2023, Jun 30). "Guide to the markets," U.S. edition, 3Q 2023, p. 65.

Questions?