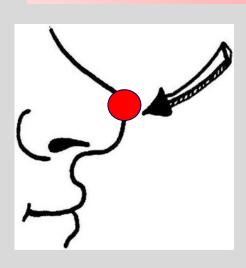
Investing for Successful Retirement

<u>UD Osher – OLLI</u> Spring 2025

- □ Rajeev A. Vaidya
- □ Ron Materniak

Disclaimer in plain language

Disclaimer - in plain language:



Opinions are like noses, everyone has one!

You are going to see mine in this course!!

We are simply sharing our perspective.

This is not investment advice or recommendation.

Ron, and I are not a financial advisors.

This course is for educational purposes only.

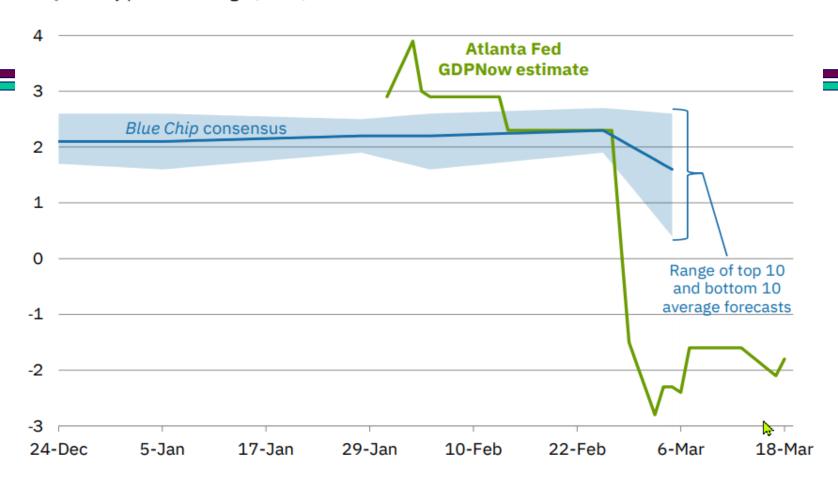
Form your own opinion, make your own investment decisions.

Eighth Class - Mar. 26th

- Market Update
- □ Deep Dive on ETFs Part 2
 - Performance metrics
 - Risk
 - ☐ ETFs for various asset classes & strategies

Evolution of Atlanta Fed GDPNow real GDP estimate for 2025: Q1

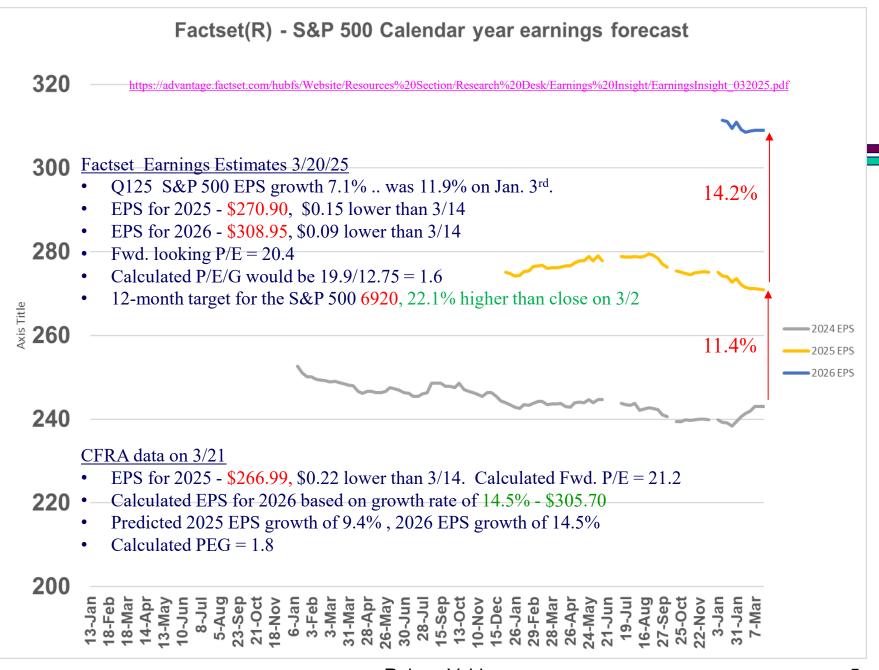
Quarterly percent change (SAAR)



Date of forecast

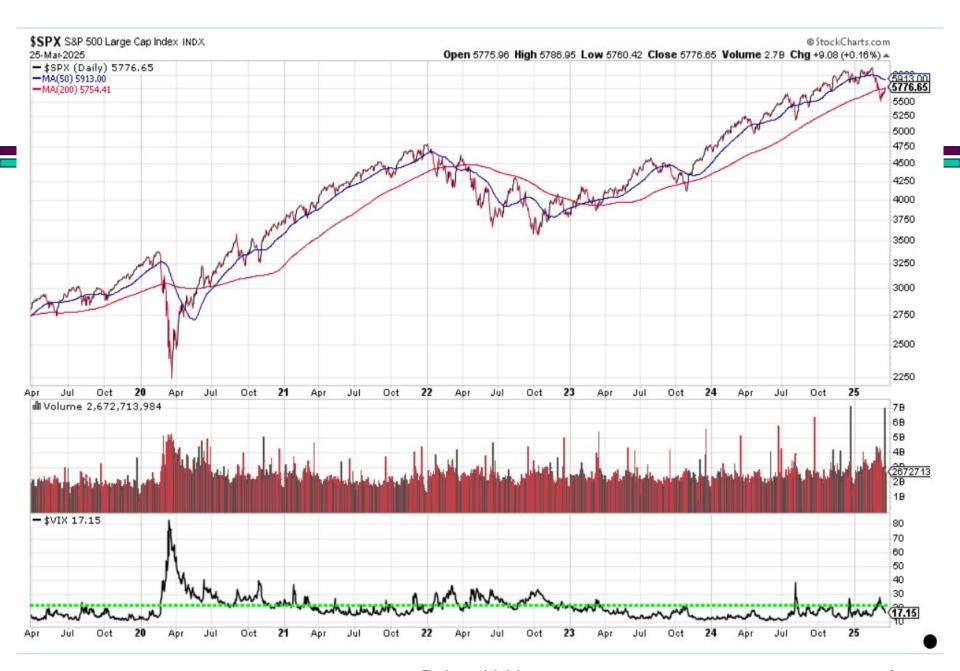
Sources: Blue Chip Economic Indicators and Blue Chip Financial Forecasts

Note: The top (bottom) 10 average forecast is an average of the highest (lowest) 10 forecasts in the *Blue Chip* survey.

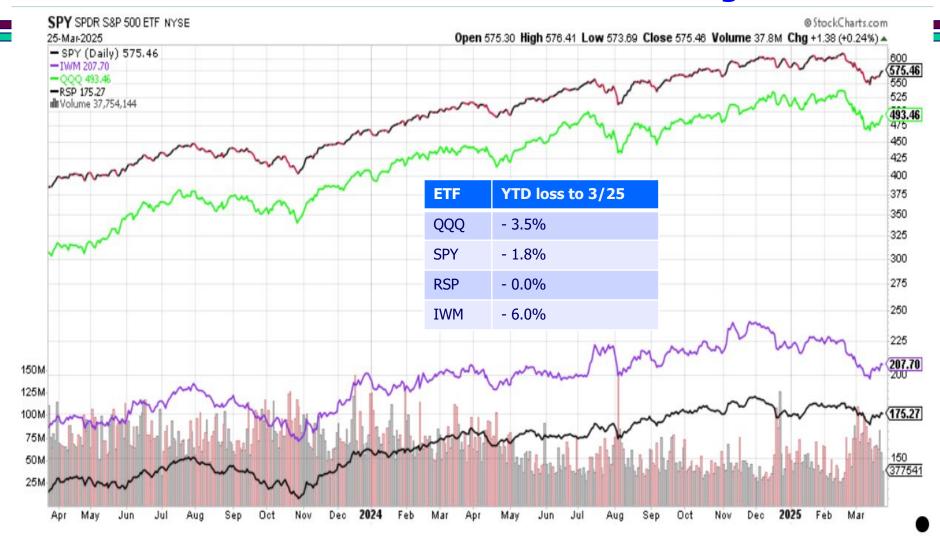








Market Breadth – another way







This is NOT investment advice

Weekly market direction

Prof. Guy Werner

Guy.werner@verizon.net

COLUMNS CD&E ARE FROM IBD AND ARE PROVIDED BY DAVE (IN THE NORTH) SMITH

DOLUMNS	C,D AND E ARE FI	ROM ISO AND PROVIDED BY DAVE (IN THE NORTH) SMITH	DISTRIBUT	TON DAY			- 1	NDU AVERAG	t			587	SOO TRUPS.	E SCREEN	111		NASDAG TRIPLE SCREEN					
1.0 00	DATE	MARKET PULSE (IBD)	5AP 500	NASDAG	8-20 EMA	MAGD	RSI	GLOSING	Δ	NCHANGE	8-20 EMA	MACD	RSI	CLOSING	Δ	SCHANGE	8-20 EMA	MACO	RSI	GLOSING	Δ	NCHANG
SAT	03/08/25	FOR THE WEEK	(4)					1	-1,039	-2.37%					-184	-3.09%					-651	-3.45%
SUN	03/09/25	YTD							257	0.60%	1			(-111	-1.89%					-1,114	-5.779
MON	03/10/25	MARKET IN CORRECTION (II% -20%)			F	F	F	41,911	-890	-2.08%	F	F	F	5,614	-156	-2.70%	- #	F	F	17,468	-728	-4.00%
TUE	03/11/25	MARKET IN CORRECTION (0% -20%)					F	41,433	-478	-1.14%	F	- F	- 1	5,572	-42	-0.75%	- 1			17,436	-32	-0.189
WED	03/12/25	MARKET IN CORRECTION (0% -20%)			F	F	F	41,350	-83	-0.20%	F	F.	F	5,599	27	0.48%	F		F	17,648	212	1.22%
THUR	03/13/25	MARKET IN CORRECTION (IPS20%)			1	F	F	40,813	-537	-1.30%	F	- 1	- 1	5,521	-78	-1.39%	- 1		-	17,303	-345	-1.95%
FRI	03/14/25	MARKET IN CORRECTION (0% -20%)			F	E	- 6	41,488	675	1.65%	F	F	- 6	5,638	117	2.12%	F		F	17,754	451	2.61%
SAT	03/15/25	FOR THE WEEK	19						-1,313	-3.07%				1	-132	-2.29%					-442	-2.43%
SUN	03/16/25	YTD						Laure de	-1,056	-2.48%	8			Sec.	-243	4.13%				berneye i	-1,556	-8.069
MON	03/17/25	MARKET IN CORRECTION (0% -20%)			-	0.50	280	41,841	353	0.85%	F	- #	- 5	5,675	37	0.66%	1		20 pm	17,808	54	0.30%
TUE	03/18/25	MARKET IN CORRECTION (II% -20%)			F	F	E	41,581	-260	-0.62%	F	F	F	5,614	-61	-1.07%	F	F	F	17,504	-304	-1.719
WED	03/19/25	MARKET IN CORRECTION (0% -20%)			F			41,964	383	0.92%	F	- 1	- 6	5,675	61	1.09%	- F	F	F	17,750	246	1.41%
THUR	03/20/25	MARKET IN CORRECTION (0% -20%)			F	U.E.	F	41,953	-11	-0.03%	F	F	F	5,662	-13	-0.23%	- #	1	F	17,691	-59	-0.33%
FRI	03/21/25	MARKET IN CORRECTION (0% -20%)			F	P	F	41,985	32	0.08%	F	P	F	5,667	5	0.09%	F	P	(F	17,784	93	0.53%
SAT	03/22/25	FOR THE WEEK							497	1.20%					29	0.51%				1	30	0.17%
SUN	03/23/25	YTD		7				-	-559	-1.31%				(-214	-3.64%					-1.526	-7.909
MON	03/24/25	MARKET IN CORRECTION (20% -40%)			F	P	F	42,583	598	1.42%	F	P	F	5,767	100	1.76%	F	P	F	18,188	404	2.27%
TUE	03/25/25	MARKET IN CORRECTION (20% -40%)			1	P		42,587	4	0.01%	- F	P	- F	5,776	9	0.16%	- F	P		18,271	83	0.46%

https://drive.google.com/drive/folders/0B6Qc_gjpshXMclkzQ245d2R1eTQ?resourcekey=0-5pWglNqaJPJ12L2qYurMWg

TLT – 20+ yr U.S. Treasury ETF



U.S. Dollar



 $\underline{https://ticdata.treasury.gov/resource-center/data-chart-center/tic/Documents/shla2023r.pdf}$

Eighth Class - Mar. 26th

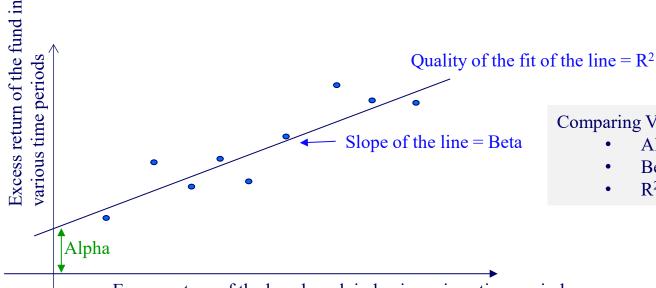
- Market Update
- Deep Dive on ETFs Part 2
 - Performance metrics
 - Risk
 - ☐ ETFs for various asset classes & strategies

Metrics for ETF performance

Metric	Definition / what it measures	Range	Good
Alpha	Excess return delivered relative to underlying index.	Zero is center	higher
Beta	Relative volatility of the fund compared to that of its benchmark index.	One is center	lower
R Squared	Percentage of a funds price movement that can be explained by changes in value of the underlying index	0 - 100	depends
Standard Deviation	Measure of the historical dispersion of a funds returns around its mean.		lower
Sharpe Ratio	Measure of excess return of a fund over the risk free return divided by its standard deviation. Estimates if a funds return comes from smart investing decisions or excess risk.		Higher
Expense Ratio	How much the manager charges to run the ETF		Lower
Liquidity	How much volume is traded every day (Bid - Ask spread)		High

Performance of a fund

- Performance is measured relative to
 - an Index Benchmark.
 - Return in a low-risk investment like a 10-year US Govt. treasury bond.



Comparing VOO or SPY to the S&P 500

- Alpha = zero
- Beta = 1
- $R^2 = 100\%$

Excess return of the benchmark index in various time periods Excess return = return on the benchmark – return on the 10 year US treasury

What's in the ETF

- Portfolio
 - Companies or individual investments
 - Percent of holdings in that investment
 - Number of holdings depth or concentration
 - Turnover

What do you want in an ETF?

- □ Reputable Sponsor
- Liquidity
- Delivers exposure to the asset class / index you want exposure to
 - High R-square to underlying asset class benchmark index
 - Low Beta
 - High Alpha
 - Low Standard Deviation
 - High Sharpe Ratio
- Low Expense Ratio and transaction fees.

Types of Risk

- ☐ Systematic Risk macroeconomic and other "system" events that influence the value of financial assets in general.
- Unsystematic Risk
 - Risk in the stock market.
 - How stocks will perform in the current financial environment.
 - Measured by volatility in the asset class
 - ☐ Correlation of the asset class to the economy and other asset classes.
 - □ Risks to specific sectors / industries within the stock market.
 - ☐ How the industry will perform in the current economy
 - Measured by volatility in a specific sector
 - □ Risk in a specific company within the sector/industry
 - ☐ How the company performs in the sector/industry
 - What happens to that company
 - Measured by Beta for that company within the market.

Why are you taking risk?

Passive - Index ETFs

- □Hierarchy
 - Total market
 - Segments of markets
 - Sectors within markets
 - Companies within the sector

Morningstar® - ETF rating system

- ☐ Fund analyst or Proprietary quantitative algorithm
 ☐ Star system 1 to 5 stars launched in 1986
 - 3 years of data minimum
 - Performance relative to other funds with similar asset classes, strategies.
 - How much risk is taken relative to others and benchmarks. Less is better.
 - 3 is average
 - □ 1 or 2 have underperformed
 - ☐ 4 or 5 have done the best in the comparison group.
- Medalist ratings Negative, Neutral, Bronze, Silver and Gold
 - Launched in May 2023 combined Analyst and Quantitative Rating
 - Predicted future performance of strategy based on Net Alpha
 - Evaluates 3 factors on a 5 point scale high, above avg., avg., below avg., low
 - People
 - □ Process Performance
 - Parent
- Fees relative to excess return delivered
- ☐ Higher bar for active strategies must beat benchmark with performance justifying risk and fees
- Algorithmic ratings launched in 2017. Sustainability ratings in 2019.

Morningstar – 5 Star, Gold ETFs

• 31 ETFs meet the screen criteria on 3/20/2025, 36 in October 2024, 58% turnover

X —	H RP V JA NG WM	Name WisdomTree Japan Hedged Equity ETF Franklin FTSE Japan Hedged ETF iShares MSCI USA Quality GARP ETF SPDR® S&P Emerging Markets Dividend ETF JPMorgan US Quality Factor ETF Vanguard Russell 1000 Growth ETF WisdomTree Dynamic Ccy Hdgd Intl Eq ETF	Morningstar Category Japan Stock Japan Stock Large Growth Diversified Emerging Mkts Large Blend Large Growth	Fund Size 3528400933 88601528 309947170 602169228 5497193259 33707222138	(3Y) 25.93632 20.57877 14.27202 13.04206 11.84652	
FLIF GAF EDI * JQL * VOI * DDV	H RP V JA NG WM	Franklin FTSE Japan Hedged ETF iShares MSCI USA Quality GARP ETF SPDR® S&P Emerging Markets Dividend ETF JPMorgan US Quality Factor ETF Vanguard Russell 1000 Growth ETF WisdomTree Dynamic Ccy Hdgd Intl Eq ETF	Japan Stock Large Growth Diversified Emerging Mkts Large Blend Large Growth	88601528 309947170 602169228 5497193259	20.57877 14.27202 13.04206	
GAI EDI JQU VOI DDV	RP V JA NG WM	iShares MSCI USA Quality GARP ETF SPDR® S&P Emerging Markets Dividend ETF JPMorgan US Quality Factor ETF Vanguard Russell 1000 Growth ETF WisdomTree Dynamic Ccy Hdgd Intl Eq ETF	Large Growth Diversified Emerging Mkts Large Blend Large Growth	309947170 602169228 5497193259	14.27202 13.04206	
	V JA NG WM	SPDR® S&P Emerging Markets Dividend ETF JPMorgan US Quality Factor ETF Vanguard Russell 1000 Growth ETF WisdomTree Dynamic Ccy Hdgd Intl Eq ETF	Diversified Emerging Mkts Large Blend Large Growth	602169228 5497193259	13.04206	
	JA NG WM G	JPMorgan US Quality Factor ETF Vanguard Russell 1000 Growth ETF WisdomTree Dynamic Ccy Hdgd Intl Eq ETF	Large Blend Large Growth	5497193259		
VOI	NG WM .G	Vanguard Russell 1000 Growth ETF WisdomTree Dynamic Ccy Hdgd Intl Eq ETF	Large Growth		11.84652	
DD\	WM .G	WisdomTree Dynamic Ccy Hdgd Intl Eq ETF		33707222138		
X .	.G	, , , , , ,			11.69317	
_			Foreign Large Value	390660256	11.66599	
▼ FEL		Fidelity Enhanced Large Cap Growth ETF	Large Growth	3005710862	11.34491	
TSP	PA	T. Rowe Price US Equity Research ETF	Large Blend	1383578934	10.98844	
RSP	N	Invesco S&P 500® Equal Wt Indls ETF	Industrials	654673354	10.88095	
SDC	CI	USCF SummerHaven Dyn CmdtyStgy NoK-1 ETF	Commodities Broad Basket	132823680	10.79575	
FLR	k G	Fidelity U.S. Multifactor ETF	Large Blend	201044545	10.76178	
₽ EQ\	WL	Invesco S&P 100 Equal Weight ETF	Large Value	1107769288	10.06205	
⇒ EQN	1	iShares Core S&P 500 ETF	Large Blend	5.34636E+11	10.02707	
SPL	.G	SPDR® Portfolio S&P 500® ETF	Large Blend	56267826794	10.01877	
\$ VO	0	Vanguard S&P 500 ETF	Large Blend	1.39909E+12	10.00198	
USC	CI	United States Commodity Index	Commodities Broad Basket	226272314	9.48445	
VFN	MF	Vanguard US Multifactor ETF	Mid-Cap Value	329016600	8.6878	
▼ VLU	J	SPDR® S&P 1500 Value Tilt ETF	Large Value	421072983	8.50984	
DIV	′B	iShares Core Dividend ETF	Large Value	668590572	8.50243	
DGF	RO	iShares Core Dividend Growth ETF	Large Value	30155799155	7.75927	
HYZ	ZD	WisdomTree Interest Rt Hdg Hi Yld Bd ETF	Nontraditional Bond	181833760	6.90121	
IED	I	iShares U.S. Consumer Focused ETF	Consumer Cyclical	29862447	6.24983	
VDO	С	Vanguard Consumer Staples ETF	Consumer Defensive	9045238701	6.17613	
SMI	LF	iShares U.S. Small-Cap Eq Fac ETF	Small Blend	1713654337	6.06692	
SJN	IK	SPDR® BImbg ST HY Bd ETF	High Yield Bond	4944937429	6.03933	
₽ FSN	ИD	Fidelity Small-Mid Multifactor ETF	Small Blend	995587004	5.9514	
* ADI	IV	SmartETFs Asia Pcfc Dvdnd Bldr ETF	Pacific/Asia ex-Japan Stk	7222998	5.39931	
≠ SKC	OR	FlexShares Credit-Scored US Corp Bd ETF	Corporate Bond	495272343	2.73209	
MB:	SD	FlexShares Disciplined Duration MBS ETF	Intermediate Government	87295379	1.01559	
TDT	ΓF	FlexShares iBoxx 5Yr Target Dur TIPS ETF	Inflation-Protected Bond	793014407	0.06133	

Affordable access to Morningstar

☐ Join the FairFax County, VA Library

https://research.fairfaxcounty.gov/c.php?g=726085&p=5445013

- □ Non-resident fee \$50 annually
 - \$75 for 2 years
 - \$100 for 3 years
- ☐ Link to apply for a non resident card

https://www.fairfaxcounty.gov/library/non-resident-library-card-application

Affordable access to Morningstar

- Log into the Fairfax County library web site https://fcplcat.fairfaxcounty.gov/default.aspx?ctx=1.1033.0.0.1
- ☐ Enter your username or bar code and password (I always enter my barcode)
- Select "Library Info heading" then "Catalog Home Page"
- Scroll down the left-hand column and select
 - All Databases under the Research Center sub heading
 - ☐ Then select the Letter M from the database list
 - M
 - Finally scroll down and select Morningstar
- You will need to enter the library card a second time on the Morningstar opening page.
- Once in Morningstar you can screen for stocks, mutual funds, ETFs by selecting the 'Screen' button on the opening page left hand side.
- ☐ You can then screen by the Morningstar medalist rating.

This is not investment advice

US Equity Markets – Style

- □ Total US stock market VTI, ITOT, SCHB
 - ☐ Style Growth vs. Value

	Growth	Blend	Value
Large	VOOG	VV, VOO	VOOV
Mid	VOT	VO	VOE
Small	VBK	VB, DFAS, SMLF	VBR

- DOW DGT
- Nasdaq ONEQ
- ☐ S&P 500 VOO, IVV, SPLG, EQWL(equal weighted)
- ☐ Style Dividend
 - ☐ High Dividend VYM
 - ☐ Growing Dividend VIG, VIGI, TDVG
 - ☐ Gold & 5 Star rated DGRO, DIVB
 - □ International EDIV
 - ☐ Small Cap DGRS

S&P 500 – Sector Weights



Sector Weights, Price Changes, Earnings Growth, P/Es, Yields and PEGs 3/21/25

Weights & % Price Changes		S&P 500		S&P	MidCap 4	400	S&P SmallCap 600				
S&P Sectors	% of 500	MTD	TD	% of 400	MTD	YTD	% of 600	MTD	YTD		
Communication Services	9.3	(5.5)	(3.5)	1.5	(1.4)	2.2	3.4	(0.9)	(7.2)		
Consumer Discretionary	10.0	(8.9)	(13.9)	13.2	(7.7)	(11.2)	13.5	(9.6)	(14.4)		
Consumer Staples	5.8	(5.9)	1.2	5.1	(3.9)	(2.8)	2.9	(6.2)	(10.3)		
Energy	3.5	1.9	7.3	4.8	1.4	(0.8)	4.6	(3.2)	(13.9)		
Financials	14.4	(5.3)	2.0	18.4	(5.4)	(3.0)	19.2	(5.7)	(4.8)		
Health Care	11.1	(1.7)	6.2	9.0	(4.9)	(6.5)	11.9	(3.6)	(3.8)		
Industrials	8.5	(3.1)	0.1	20.8	(5.4)	(7.7)	17.8	(7.0)	(9.9)		
Information Technology	30.4	(5.4)	(9.5)	10.8	(4.7)	(10.4)	12.1	(3.8)	(12.1)		
Materials	2.0	(3.6)	1.6	6.3	(4.5)	(2.4)	4.2	(5.9)	(8.1)		
Real Estate	2.2	(4.3)	1.4	7.2	(3.4)	(0.1)	7.9	(5.2)	(5.1)		
Utilities	2.5	(0.8)	3.2	2.9	(0.5)	8.3	2.4	0.6	3.2		
S&P 500	100.0	(4.8)	(3.6)	100.0	(4.8)	(5.6)	100.0	(5.6)	(8.6)		
S&P/Citigroup Growth	50.2	(6.1)	(6.5)	50.2	(5.3)	(7.4)	51.1	(5.6)	(7.8)		
S&P/Citigroup Value	49.8	(3.5)	(0.6)	49.8	(4.3)	(3.8)	48.9	(5.5)	(9.4)		

US Equity Markets – Sector

Sector Performance by Business Cycle Phase

The table below shows how sectors have tended to perform in each stage of the business cycle. For more information on sector performance patterns, read The Business Cycle Approach to Sector Investing (PDF).

This is not investment advice

	XLF
34% is AMZN	XLRE
and TSLA ——	— XLY
40% is AAPL, —	XLK
NVDA, and	XLI
MSFT	XLB
	XLP
	XLV
	XLE
	- XLC
43% is Meta,	XLU
Google, and NFLX	

<u>Sector</u>	<u>Early</u>	<u>Mid</u>	<u>Late</u>	Recession
Financials	+			
Real Estate	++			: ?
Consumer Discretionary	++	_	7 <u>——</u>	
Info. Tech	+	+		
Industrials	++			
Materials	+		++	
Consumer Staples			++	++
Health Care	<u> </u>		++	++
Energy			++	
Communication Services		+		
Utilities		-	+	++

Unshaded (white) portions above suggest no clear pattern of over- or underperformance vs. broader U.S. equity market. Double +/- signs indicate that the sector is showing a consistent signal across all three metrics: full-phase average performance, median monthly difference, and cycle hit rate. A single +/- indicates a mixed or less consistent signal. Source: Fidelity Investments (AART).

VHF
VNQ
VCR
VGT
VIS
VAW
VDC
VHT
VDE
VOX

This is not investment advice

Equity Markets - Industry

- Specific Industry of interest
 - Based on market direction etc.
 - ☐ Fund manager / team make choices
- Examples
 - Infrastructure IFRA
 - □ Solar Energy TAN
 - Internet Security HACK, BUG -> similar top holdings
 - Lithium & Batteries LIT, BATT ->6% weight on TSLA
 - ☐ Healthcare VHT
 - ☐ Biotech IBB, XBI
 - Medical Devices IHI
 - ☐ Airlines JETS
 - Real Estate VNQ, JPRE, REET(global)
 - Robotics ROBO
 - ☐ AI centric XAIX, CHAT, AIQ

Active ETFs

- Strategy / Style
- □ Active Fund Manager/team

This is not investment advice

Equity Markets - Active

- Manager / Team chooses portfolio to achieve objective
- Equity Premium Income / growth
 - JEPI (covered calls Equity Linked Notes), monthly distributions
- Multiple strategies
 - Low Beta
 - LVHD, EEMV, VFMV, ONEV, QLV
 - Active Beta
 - □ GSLC, GSIE
 - Momentum
 - ☐ MMTM, MTUM, IMTM, ONEO (Russell 1000), IDMO (international), BUZZ (Social Media)
 - Covered Calls
 - DIVO

Equity Markets – Exotic Strategy

- Multiple leveraged funds
 - Complex ETF
 - Low AUM, High Fees
 - Very short term focus One Day!
 - Be very careful
- □ S&P 500 Double Leverage SPUU or SOO
 - QQQ triple TQQQ and short SQQQ
- □ Direxion single stock ETFs TSLA daily bear TSLS

This is not investment advice

US Bond Market

- □ Total Bond Market FBND, BND, IUSB, AGG
- □ Total Corporate Bonds VTC
- High Yield Bonds HYZD, HYGH, SJNK, SHYG, HYDB, FALN, HYGV
- □ Total Tax − Exempt − VTEB
- □ Inflation Protected (TIPS) TDTF, SCHP

	Short	Intermediate	Long Term
Treasuries	VGSH	VGIT	VGLT
Corporate	VCSH	VCIT	VCLT
Total Bond Mkt.	BSV	BIV	BLV

This is not investment advice

International Markets

- Equities
 - Total International Markets VXUS, IXUS, EMXF, FDEM, VEU
 - Small Cap VSS
 - □ Hedged DDWM
 - Emerging Markets VWO, SPEM, QEMM, FDEM, TLTE, EDIV
 - ☐ Developed Markets VEA, TLTD, JHMD, IDEV
 - ☐ Region specific Latin America (ILF), Europe (SPEU, VGK), APAC ex JP (BBAX)
 - □ Country Specific Taiwan (EWT), Japan (DXJ, BBJP, JPXN, EWJV), India (INDY, EPI)
- Bonds
 - ☐ Total International Bonds BNDX (Hedged), BNDW

This is not investment advice

Precious Metals ETFs

Investment Focus	Example ETFs
Individual Precious Metals	
Gold	IAU, GLD, SGOL
Gold Miners	GDX, RING, GOEX
Silver	SLV, SIVR,
Silver Miners	SIL, SLVP
Platinum	PPLT, PLTM
Palldium	PALL
Precious Metal baskets	
Palladium + Platinum	SPPP
Gold + Silver + Platinum + Palladium	GLTR

Al assisted ETFs

Data is not updated or complete

					<u>Alpha</u>	AUM in	Bid /Ask	
SYMBOL	<u>Name</u>	Launch date	Exp Ratio	<u>Yield</u>	over SPY	<u>millions</u>	<u>spread</u>	<u>Style</u>
WUSA	Simplify Wolfe US Equity 150/50 ETF	9/24/2024	0.75%			3.1	0.36%	Total return swaps
CPAI	Counterpoint Quantative Equity ETF	11/28/2023	0.75%		Yes	38.1	0.21%	US Stocks and ADRs
AMOM	QRAFT AI Enhanced US Lg Cap Mom ETF	May-19	0.75%	0.16%	Yes	39.5	0.09%	Al aided momentum
LQAI	LG QRAFT AI Powered US Lg Cap	11/7/2023	0.75%		No	4.5	0.15%	
AIVL	WisdomTree Ai Enhanced Value ETF	6/16/2006	0.38%	2.04%	No	400.9	0.06%	Al enhanced value
QRFT	QRAFT AI Enhanced US Lg Cap ETF	May-19	0.75%		No	14.5	0.09%	
CVIP	GS Hedge Industry VIP ETF	1/11/2016	0.45%	0.62%	No	305.1	0.25%	Top Stocks owned by hedge funds
AIEQ	Amplify AI Powered Equity ETF	Oct-17	0.75%	0.68%	No	104.1	0.14%	

• BUZZ – is an AI assisted ETF that relies on AI technology to identify stocks based on social media sentiment. It has not produced a positive Alpha over SPY



Investing Principles



Asset class returns

GTM U.S. 59

2010-	-2024																
Ann.	Vol.	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	YTD
Large Cap	Small Cap	REITs	REITs	RBTs	Small Cap	REITs	REITs	Sm all Cap	EM Equity	Cash	Large Cap	Sm all Cap	RETs	Com dty.	Large Cap	Large Cap	DM Equity
13.9%	20.6%	27.9%	8.3%	19.7%	38.8%	28.0%	2.8%	21.3%	37.8%	1.8%	31.5%	20.0%	41.3%	16.1%	26.3%	25.0%	7.3%
Sm all	EM .	Sm all	Fixe d	High	Large	Large	Large	High	DM	Fixe d	R⊟Ts	EM	Large	Cash	DM	Small	R⊟Ts
Cap 10.3%	Equity 17.9%	Cap 26.9%	Income 7.8%	Yield 19.6%	Cap 32.4%	Cap 13.7%	Cap 1.4%	Yie Id 14.3%	Equity 25.6%	Income 0.0%	28.7%	Equity 18.7%	Cap 28.7%	1.5%	Equity 18.9%	Cap 11.5%	5.2%
REITs	R⊟Ts	EM	High	EМ	DM	Fixed	Fixe d	Large	Large	R⊟Ts	Small	Large	Com dty.	High	Sm all	Asset	Comdty.
9.4%	16.8%	Equity 19.2%	Yield 3.1%	Equity 18.6%	E quity 23.3%	Incom e 6.0%	Income 0.5%	Cap 12.0%	Сар 21.8%	-4.0%	Cap 25.5%	Cap 18.4%	27.1%	Yie Id -12.7%	Сар 16.9%	All●c. 10.0%	4.8%
Asset	DM	19.2%	Large	DM	Asset	Asset	0.5%	12.0%	Sm all	High	25.5% DM	Asset	Sm all	Fixed	Asset	High	Fixed
Alloc.	Equity	Com dty.	Cap	Equity	Allec.	Allec.	Cash	Com dty.	Cap	Yield	Equity	AJRoc.	Cap	Income	AUC.	Yield	Income
7.2%	16.5%	16.8%	2.1%	17.9%	14.9%	5.2%	0.0%	11.8%	14.6%	-4.1%	22.7%	10.6%	14.8%	-13.0%	14.1%	9.2%	2.7%
High Yield	Comdty.	Large	Cash	Small	High Yield	Sm all	DM	EM	Asset Al B c.	Large	Asset	DM	Asset Allec.	Asset	High Yield	EM	Asset Alloc.
5.9%	16.1%	Cap 15.1%	0.1%	Cap 16.3%	7.3%	Cap 4.9%	Equity -0.4%	Equity 11.6%	14.6%	Cap -4.4%	19.5%	Equity 8.3%	13.5%	-13.9%	14.0%	Equity 8.1%	2.6%
DM	Large	High	Asset	Large /	R⊟Ts	Cash	Asset	REITs	High	Asset	BM	Fixed	DM	DM	REITs	Comdty.	⊟M
Equity 5.7%	Cap 15.1%	Yie ld 14.8%	AJP.c. -0.7%	Cap 16.0%	2.9%	0.0%	Alloc. -2.0%	8.6%	Yield 10.4%	AÌMoc. -5.8%	Equity 18.9%	Incom e 7.5%	Equity 11.8%	Equity -14.0%	11.4%	5.4%	Equity 2.3%
5.7 % EM	Asset	Asset	Small	Asset		High	High	Asset		Small	High	High	High	Large	EM		High
Equity	Alloc.	Allec.	Сар	Alto c.	Cash	Yield	Yield	Allec.	REITs	Сар	Yield	Yield	Yield	Сар	Equity	Cash	Yield
3.4%	10.4%	13.3%	-4.2%	12.2%	0.0%	0.0%	-2.7%	8.3%	8.7%	-11.0%	12.6%	7.0%	1.0%	-18.1%	10.3%	5.3%	2.2%
Fixe d	High Yield	DM Equity	DM Equity	Fixed	Fixed Income	EM Equity	Sm all Cap	Fixe d	Fixe d Income	Comdty.	Fixed Income	Cash	Cash	EM Equity	Fixe d	REITs	Large Cap
Income 2.4%	9.4%	8.2%	-11.7%	Income 4.2%	-2.0%	-1.8%	-4.4%	Income 2.6%	3.5%	-11.2%	8.7%	0.5%	0.0%	-19.7%	Income 5.5%	4.9%	1.4%
Cash	Fixe d	Fixe d	Comdty.	Cash	EM	DM	EM	DM	Com dty.	DM	Comdty.	Com dty.	Fixed	Sm all	Cash	DM	Cash
1.2%	Income 4.7%	Income 6.5%	-13.3%	0.1%	Equity -2.3%	Equity -4.5%	Equity -14.6%	Equity 1.5%	1.7%	Equity -13.4%	7.7%	-3.1%	Income -1.5%	Cap -20.4%	5.1%	Equity 4.3%	0.7%
1.2%			-13.3% EM							-13.4% EM			-1.5% EM			Fixe d	Small
Com dty.	Cash	Cash	Equity	Comdty.	Comdty.	Com dty.	Com dty.	Cash	Cash	Equity	Cash	REITs	Equity	REITs	Com dty.	Income	Cap
-1.0%	0.9%	0.1%	-18.2%	-1.1%	-9.5%	-17.0%	-24.7%	0.3%	0.8%	-14.2%	2.2%	-5.1%	-2.2%	-24.9%	-7.9%	1.3%	-2.9%

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 U.S. 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 U.S. 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 12/31/2009 to 12/31/2024. 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 February 28, 2025.

J.P.Morgan ASSET MANAGEMENT

ETFs that do the asset allocation

- Balanced Funds (Funds of funds)
 - □ iShares aggressive AOA 5 Star, Silver
 - □ iShares moderate AOM 4 Star, Gold

□ Target Dated funds

This is not investment advice

Ninth Class - Apr. 2nd

- Market Update
- Dividend Investing

Thanks!!

- □ Happy Investing !!
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