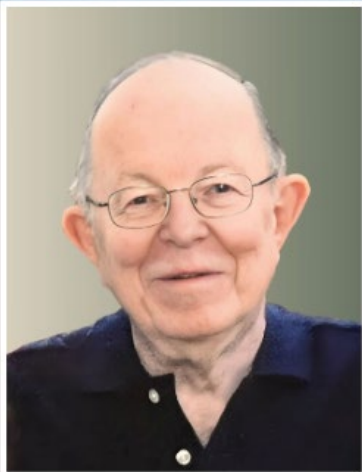


Investing for Successful Retirement

UD Osher – OLLI
Fall 2025

- **Rajeev A. Vaidya**
- **Ron Materniak**

In Honor of Fred Cash (1931 – 2025)



Fred Cash taught at UD-OLLI for > 40 semesters

- Spanish
- Portuguese
- Investment topics
 - Advanced Analysis Workshop with John Matz since Fall of 2010 (as far as records go), then alone from Spring 2014, and with me from Fall 2017. Stopped in Fall 2018.
 - Investment for Successful Retirement
 - Started alone Fall 2015
 - 1 semester with Hal Haiken in Spring 2016
 - Alone twice Fall 2016 and Spring 2016
 - I joined him in Fall 2017
 - Dick Arvedlund joined for two semesters
 - Fred stopped in Spring 2020
 - Jane Roe Fox and Ron joined
 - Ron and I do it now.
- Fred encouraged me and gave me an opportunity to have the joy of teaching again



Your instructors

Instructors this semester

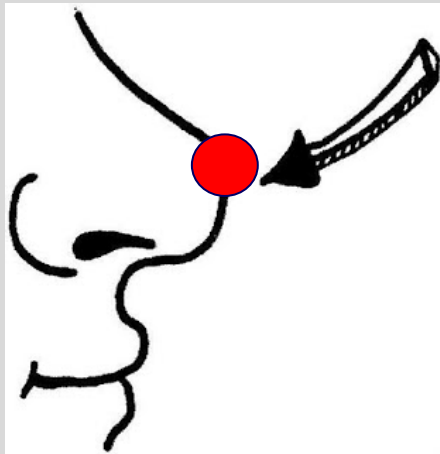
- Rajeev Vaidya
- Ron Materniak

Advisor

- Guy Werner

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.

Class processes - RECORDING

- UD has a restricted policy on recording and sharing
 - Only if all participants agree
 - Only to be shared with REGISTERED class participants on an exception basis as needed.
 - To request a link to a class recording, send an email to ron.materniak@verizon.net

- WE WILL START RECORDING THIS FIRST CLASS NOW
 - Unless anyone does not agree.
 - Please speak up if you do NOT want to be recorded.

First Class – Sept. 3rd

- Class Introduction
- Market Update
- This Week's Topic
 - What's different in investing in retirement?

Class Composition

- 90 people registered
- 60% were in the Spring Class
- 25% have attended other prior classes
- 15% look to be new to the course

Spring 2024 – Class Feedback

| <u>OLLI - Investing for Successful Retirement - Spring 2025</u> | | | | | | |
|--|----------------|-------|---------------------------|----------|-------------------|----------------|
| Course Evaluation Survey | | | | | | |
| Stock Analysis Course | Strongly Agree | Agree | Neither agree or Disagree | Disagree | Strongly Disagree | Not applicable |
| | 5 | 4 | 3 | 2 | 1 | |
| Course is well organized | 98% | 3% | | | | |
| Website materials are effective | 85% | 15% | | | | |
| Instructor/s are knowledgeable | 100% | | | | | |
| Course objectives were clear | 85% | 15% | | | | |
| Course objectives were achieved | 85% | 12% | 2% | | | |
| Course met my expectations | 85% | 12% | 2% | | | |
| | Yes | No | | | | |
| Did the learnings from the class have a positive impact on your investing? | 100% | | | | | |

Course Content

□ Typical Class

- Market updates (15-20 min)
- Weekly Topic (45 min) generally focused on:
 - Protecting capital and producing income and returns
 - Investing ideas that are currently relevant
- Time for Questions (10 min)

□ New content of current relevance to the investor

- Opportunities in Bonds.
 - International Opportunities
 - AI (Artificial Intelligence) – Investing opportunity & tool.
 - The world is short of electricity !! – Investing Opportunities.
 - Your input / suggestions are welcome – Subjects we don't cover = annuities, taxes
- More class participant interaction

Goal – Learnings from the class have a positive impact on your investing as a retiree.

Class processes / plans

- 13 week class – 9/3 through 12/3
 - Draft Schedule for first five classes is posted on the class website.
 - I will be in South America from 11/3 through 11/17
 - Will miss classes on 11/5 and 11/12
 - Dr. Robert Fry will speak about his views on the US economy
 - Ron will teach on a relevant topic of his choice
 - Will change as the market evolves and based on your input.
- **Class website**
 - <http://udel.edu/~diyinvst>
 - Class documents are posted each week before class. Stay on the website till the end of the semester. Do not share with people outside the class.
- Rajeev Vaidya – diyinvst@udel.edu
- Ron Materniak – ron.materniak@gmail.com

Class processes / plans

- ❑ olli-online mailed a class Zoom link to all registered participants
- ❑ The Link is for a repeating meeting
 - ❑ Same link works for 13 weeks
- ❑ Password was mailed to you in the welcome note from olli-online
 - ❑ Password does not change .. Same for the whole semester
- ❑ Please put your name (vs “computer”) in Zoom so we know who you are when asking questions.
 - ❑ Use the Zoom app on your PC with the meeting number in the link this gives you more options and better control.

Class Emails

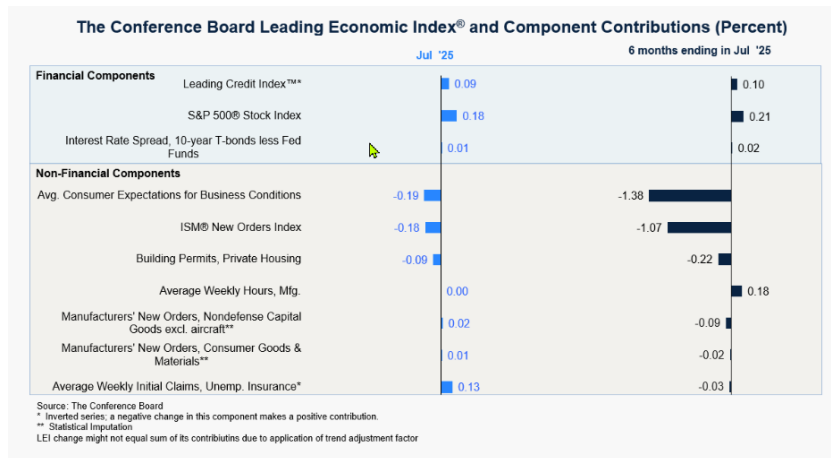
- ❑ Generally, Rajeev will send ONE email per week to class participants.
- ❑ The email will be sent a day or two before class, letting you know that charts have been posted to the website.
- ❑ If you do NOT want to receive these emails, please send an email to diyinvst@udel.edu and we will remove you from the distribution list.

First Class – Sept 3rd

- Class Introduction
- Market update
- Weekly Topic
 - What's different in investing in retirement?

Conference Board – 9/21/2025

LEI dropped by 0.1% in July



Overall CB's outlook is for 1.6% GDP growth in 2025 slowing to 1.3% in 2026

<https://www.conference-board.org/topics/us-leading-indicators>

The LEI's negative growth rate and low diffusion index over the past six months triggered the recession signal again in July

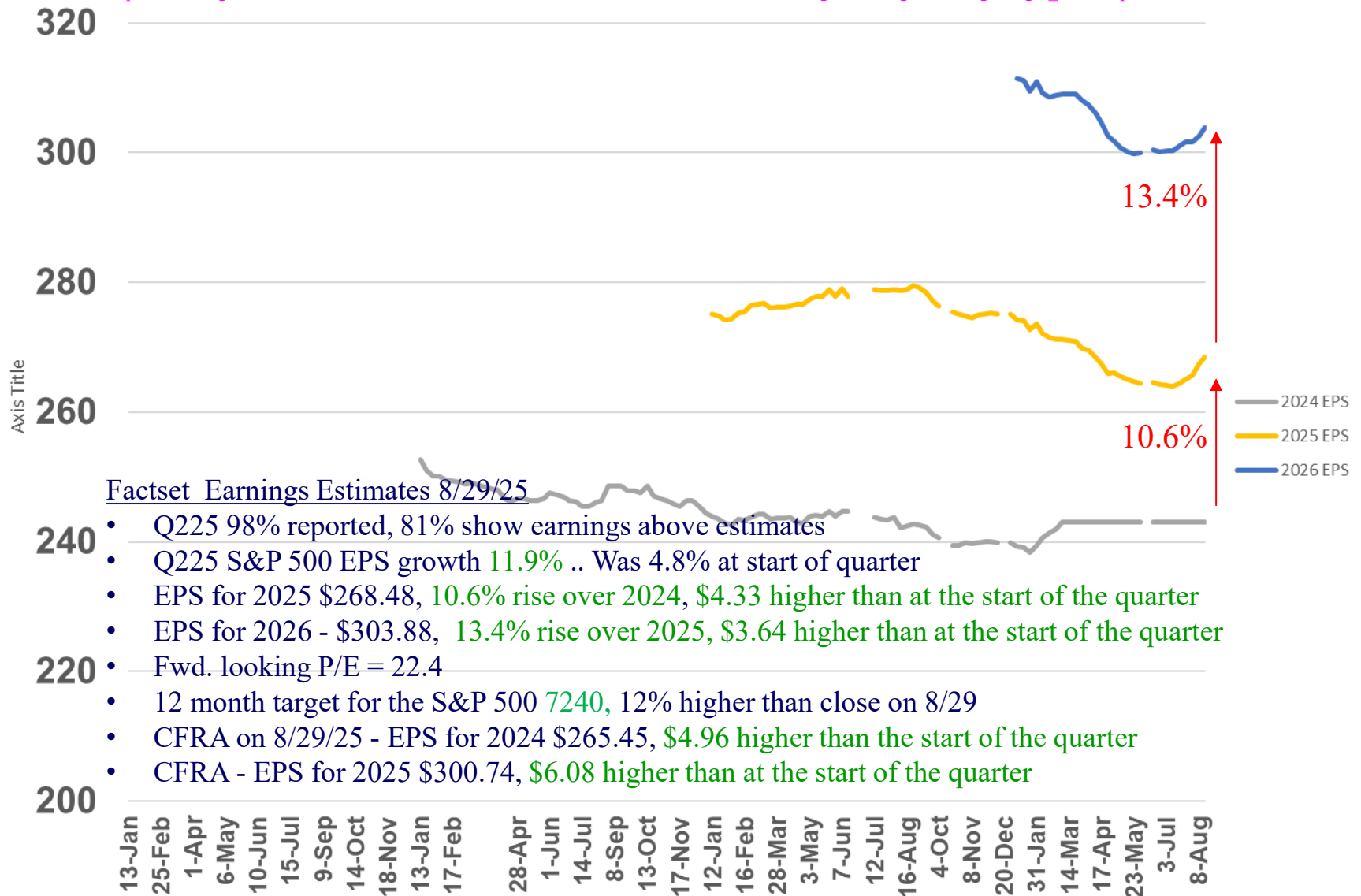


NOTE: The chart illustrates the so-called 3Ds—duration, depth, and diffusion—for interpreting a downward movement in the LEI. **Duration** refers to how long the decline has lasted. **Depth** denotes the size of decline. Duration and depth are measured by the rate of change of the index over the most recent six months at an annualized rate. **Diffusion** is a measure of how widespread the decline is among the LEI's component indicators—on a scale of 0 to 100, a diffusion index reading below 50 indicates most components are weakening.

The 3Ds rule signals an impending recession when: 1) the six-month diffusion index lies at or below 50, shown by the black warning signal lines in the chart; and 2) the LEI's six-month growth rate (annualized) falls below the threshold of -4.1%. The red recession signal lines indicate months when both criteria are met simultaneously—and thus that a recession is likely imminent or underway.

Factset(R) - S&P 500 Calendar year earnings forecast

https://advantage.factset.com/hubfs/Website/Resources%20Section/Research%20Desk/Earnings%20Insight/EarningsInsight_082925.pdf



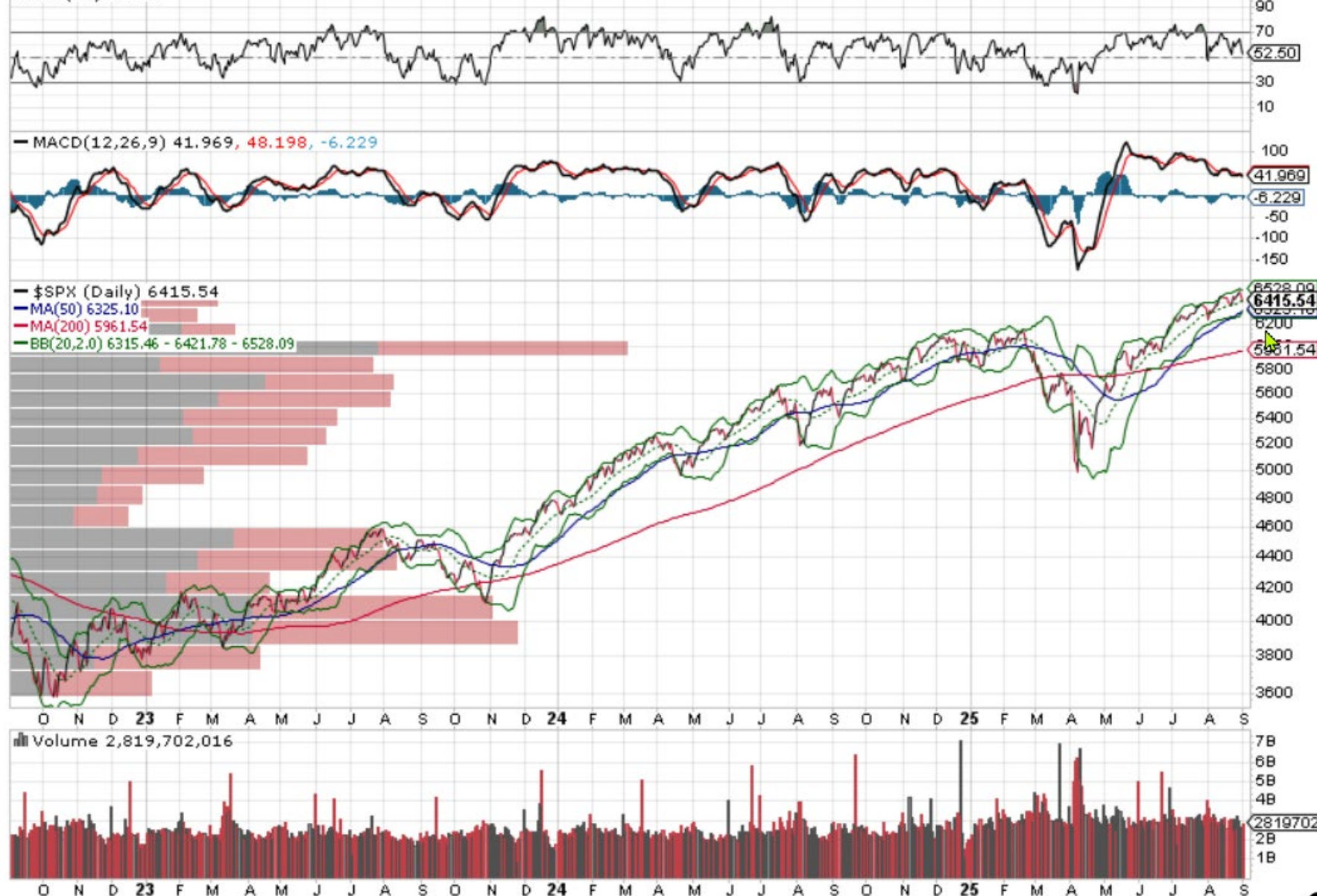
\$SPX S&P 500 Large Cap Index INDXX

2-Sep-2025

© StockCharts.com

Open 6401.51 High 6416.54 Low 6360.58 Close 6415.54 Volume 2.8B Chg -44.72 (-0.69%) ▼

▲ RSI(14) 52.50



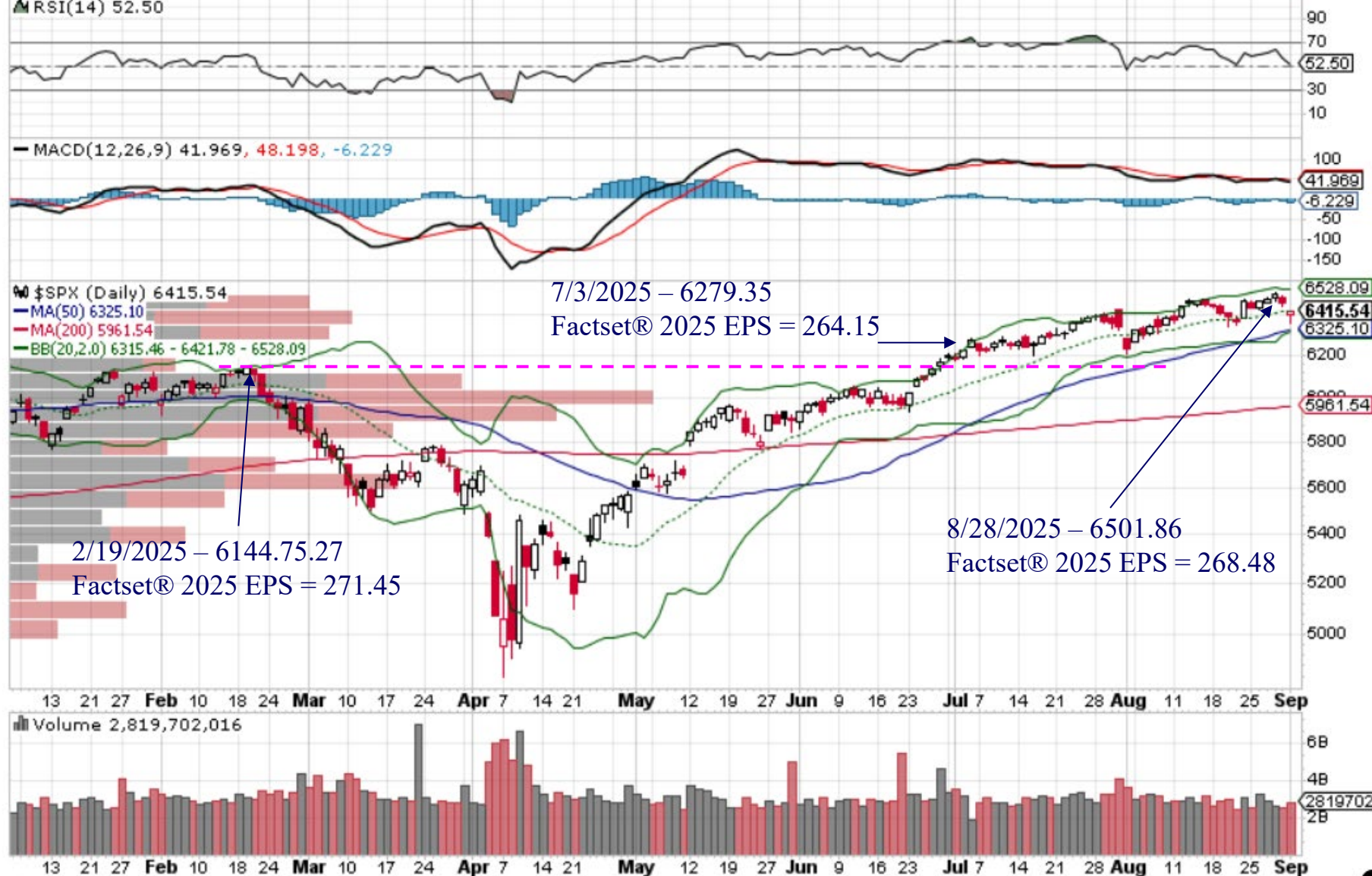
\$SPX S&P 500 Large Cap Index INDX

2-Sep-2025

▲ RSI(14) 52.50

Open 6401.51 High 6416.54 Low 6360.58 Close 6415.54 Volume 2.8B Chg -44.72 (-0.69%) ▼

© StockCharts.com



Market Breadth – another way

SPY SPDR S&P 500 ETF NYSE

2-Sep-2025

Open 637.50 High 640.49 Low 634.92 Close 640.27 Volume 81.7M Chg -4.78 (-0.74%)

@StockCharts.com

SPY (Daily) 640.27

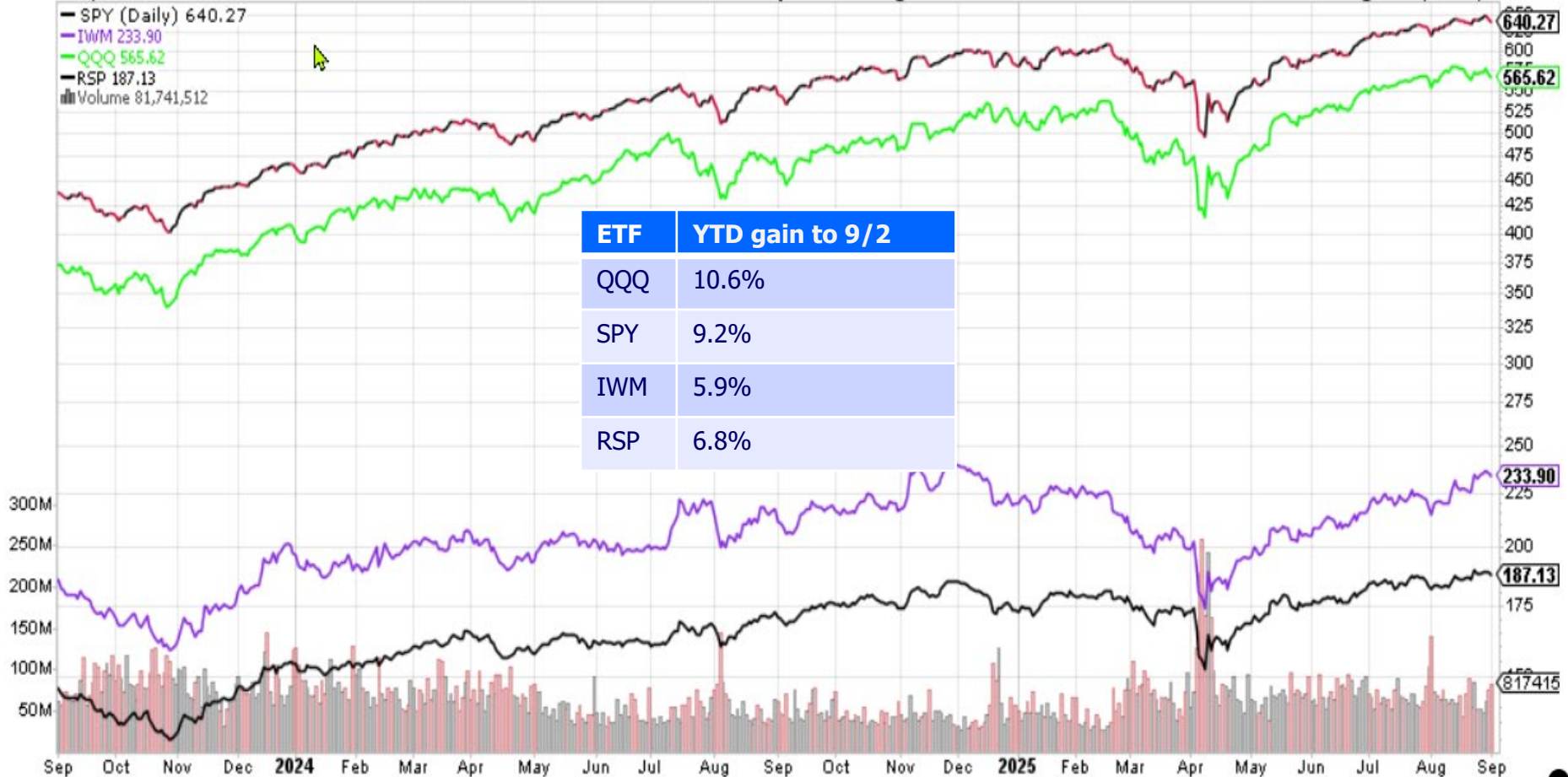
IWM 233.90

QQQ 565.62

RSP 187.13

Volume 81,741,512

| ETF | YTD gain to 9/2 |
|-----|-----------------|
| QQQ | 10.6% |
| SPY | 9.2% |
| IWM | 5.9% |
| RSP | 6.8% |



\$NYAD NYSE - Advance-Decline Issues INDX

2-Sep-2025

© StockCharts.com
Open 69090.00 High 69090.00 Low 69090.00 Close 69090.00 Chg -992.00 (-1.42%)

— \$NYAD Cumulative 69090.00
— MA(50) 66618.08



— \$SPX 6415.54







Weekly Market direction

guywerner@verizon.net

4:36

to me ▾

| COLUMNS C,D AND E ARE FROM IBD AND PROVIDED BY DAVE (IN THE NORTH) SMITH | | | DISTRIBUTION DAYS | | \$INDU AVERAGE | | | | | | S&P 500 TRIPLE SCREEN | | | | | | NASDAQ TRIPLE SCREEN | | | | | |
|--|----------|--------------------------|-------------------|--------|----------------|------|-----|---------|-------|---------|-----------------------|------|-----|---------|-----|---------|----------------------|------|-----|---------|-------|---------|
| | DATE | MARKET PULSE (IBD) | S&P 500 | NASDAQ | 8-20 EMA | MACD | RSI | CLOSING | Δ | %CHANGE | 8-20 EMA | MACD | RSI | CLOSING | Δ | %CHANGE | 8-20 EMA | MACD | RSI | CLOSING | Δ | %CHANGE |
| SAT | 08/23/25 | FOR THE WEEK | | | | | | | 685 | 1.52% | | | | | 17 | 0.26% | | | | | -126 | -0.58% |
| SUN | 08/24/25 | YTD | | | | | | | 3,087 | 7.26% | | | | | 585 | 9.95% | | | | | 2,186 | 11.32% |
| MON | 08/25/25 | CONFIRMED UP (80% -100%) | 6 | 5 | P | P | P | 45,282 | -349 | -0.76% | P | F | P | 6,439 | -27 | -0.42% | P | F | P | 21,449 | -47 | -0.22% |
| TUE | 08/26/25 | CONFIRMED UP (80% -100%) | 6 | 5 | P | P | P | 45,418 | 136 | 0.30% | P | F | P | 6,465 | 26 | 0.40% | P | F | P | 21,544 | 95 | 0.44% |
| WED | 08/27/25 | CONFIRMED UP (80% -100%) | 6 | 5 | P | P | P | 45,565 | 147 | 0.32% | P | F | P | 6,481 | 16 | 0.25% | P | F | P | 21,590 | 46 | 0.21% |
| THUR | 08/28/25 | CONFIRMED UP (80% -100%) | 6 | 5 | P | P | P | 45,636 | 71 | 0.16% | P | 0 | P | 6,501 | 20 | 0.31% | P | F | P | 21,705 | 115 | 0.53% |
| FRI | 08/29/25 | CONFIRMED UP (80% -100%) | 6 | 5 | P | P | P | 45,544 | -92 | -0.20% | P | 0 | P | 6,460 | -41 | -0.63% | P | F | P | 21,455 | -250 | -1.15% |
| SAT | 08/30/25 | FOR THE WEEK | | | | | | | -87 | -0.19% | | | | | -6 | -0.09% | | | | | -41 | -0.19% |
| SUN | 08/31/25 | YTD | | | | | | | 3,000 | 7.05% | | | | | 579 | 9.85% | | | | | 2,145 | 11.11% |
| MON | 09/01/25 | LABOR DAY MARKET CLOSED | | | P | P | P | 45,544 | 0 | 0.00% | P | 0 | P | 6,460 | 0 | 0.00% | P | F | P | 21,455 | | |
| TUE | 09/02/25 | CONFIRMED UP (80% -100%) | 6 | 5 | P | P | P | 45,295 | -249 | -0.55% | P | F | P | 6,415 | -45 | -0.70% | P | F | 0 | 21,279 | -176 | -0.82% |

https://drive.google.com/drive/folders/0B6Qc_gipshXMclzQ245d2R1eTQ?resourcekey=0-5pWglNqaJPJ12L2qYurMWg

Market Summary – Stockcharts®

Stockcharts.com → Main Screen → Market Analysis

New feature – Market Summary

| KELLER MARKET MODELS | | | |
|--------------------------|----|----|----|
| MACRO MODEL STOCKS MODEL | | | |
| | ST | MT | LT |
| Stocks (SPY) | ↑ | ↑ | ↑ |
| Bonds (TLT) | ↓ | ↑ | ↓ |
| Commodities (DBC) | ↑ | ↑ | ↑ |
| US Dollar (\$USD) | ↓ | ↓ | ↓ |

| KELLER MARKET MODELS | | | |
|--------------------------|----|----|----|
| MACRO MODEL STOCKS MODEL | | | |
| | ST | MT | LT |
| S&P 500 (SPY) | ↑ | ↑ | ↑ |
| S&P 400 (MDY) | ↑ | ↑ | ↑ |
| Russell 2000 (IWM) | ↑ | ↑ | ↑ |
| NASDAQ 100 (QQQ) | ↓ | ↑ | ↑ |

US govt bonds – TLT & SGOV

SGOV – Short term 0 to 3 month US treasuries



U.S. Dollar

\$USD US Dollar - Cash Settle FOREX

29-Aug-2025

\$USD (Weekly) 97.85

MA(40) 102.49

Volume undef

Open 97.72 High 98.73 Low 97.69 Close 97.85 Chg +0.14 (+0.14%)

© StockCharts.com



First Class – Sept. 3rd

- Class Introduction
- Market update
- Weekly Topic
 - What's different in investing in retirement?

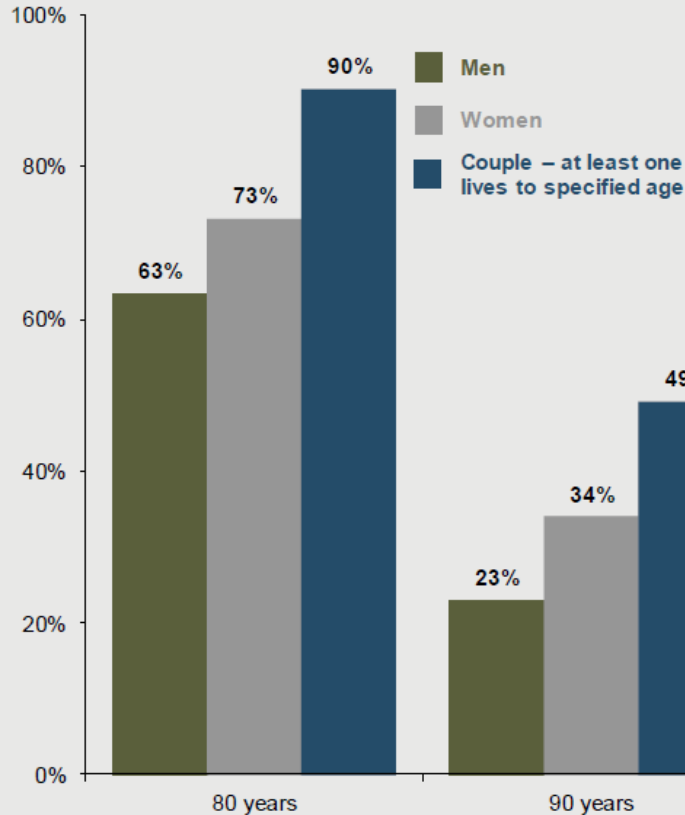
Investing in Retirement

- Prior to retirement – Accumulation phase
- After retirement
 - Protect and grow the investment portfolio
 - Use the portfolio to produce income for current expenses
 - Draw down the principal as needed and in a way that does not exhaust it prematurely.
- 3 unknowns
 - How long will we live?
 - How much will we need to spend?
 - What return will your portfolio earn at the risk you are willing to take?

Producing income from your investment portfolio is relevant
Sequence of return risk is relevant

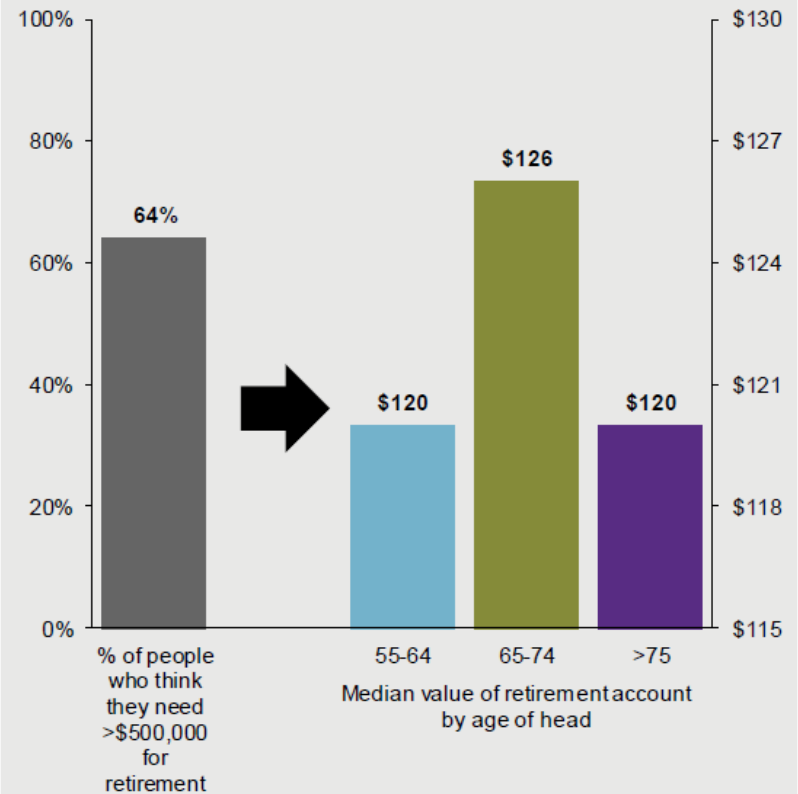
Probability of reaching ages 80 and 90

Persons aged 65, by gender, and combined couple



Retirement savings gap

Anticipated amount needed vs. actual savings, thousands



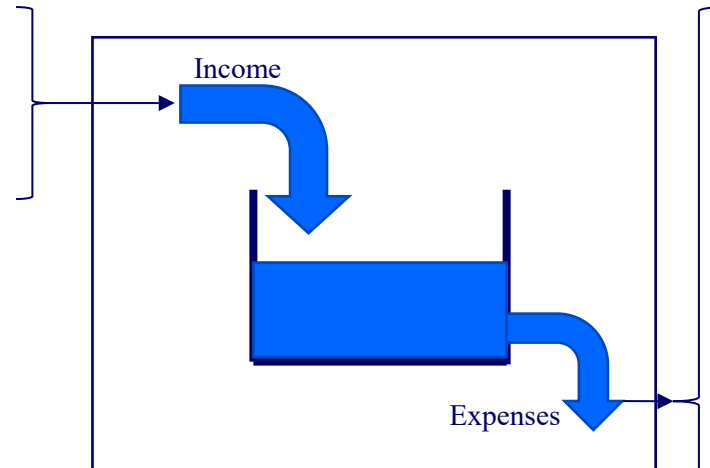
Source: J.P. Morgan Asset Management; (Left) SSA 2016 Life Tables; (Right) 2017 Retirement Confidence Survey, Employee Benefit Research Institute and Greenwald & Associates; 2016 Survey of Consumer Finances, Federal Reserve. EBRI survey was conducted from January 6, 2017 to January 13, 2017 through online interviews with 1,671 individuals (1,082 workers and 589 retirees) ages 25 and older in the United States.
Guide to the Markets – U.S. Data are as of August 31, 2019.

J.P.Morgan
 Asset Management

If you retire at 65 expect at least one spouse to need money from your nest egg for 25 to 30 years

Does your income cover expenses ?

- Pensions
- Social Sec.
- Salaries
- Income and capital gains from taxable accounts



Essential Fixed Expenses

- Rent / Mortgage
- Medical Insurance
- Debt payments – Auto etc.

Essential Variable Expenses

- Taxes
- Food
- Transportation
- Out of Pocket Medical Expenses
- Household needs
- Communications – Phone, cable, web

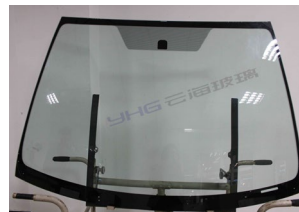
Discretionary Expenses

- Fun money
 - zero is not real / sustainable

Savings



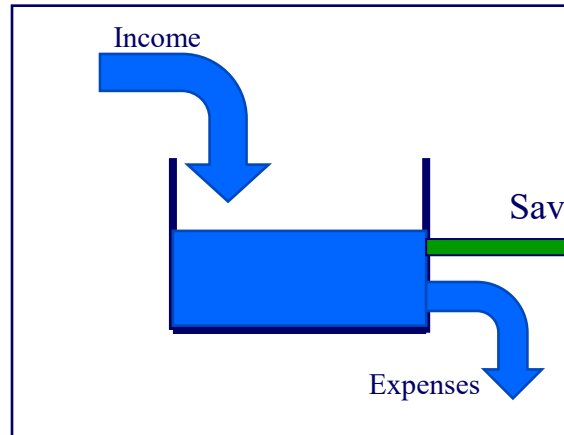
Yesterday & Today



Near Future

Adding to or drawing from assets ?

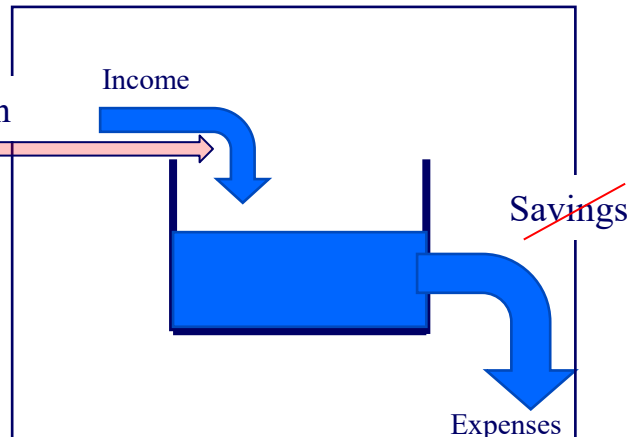
Income exceeds expenses



Expenses exceed income



Drawdown



Why is income relevant

- Typical Portfolio drawdown recommendations – 4% per year.
 - Depends on your specific situation and the expected market returns
- If your portfolio produces income, you need to draw down less of the principal to meet your needs
 - Helps in a down market – you are forced to sell less.
 - Helps in a up market – you have more money growing.

Treasury Yield Rates

| Date | 1 Mo | 1.5 Month | 2 Mo | 3 Mo | 4 Mo | 6 Mo | 1 Yr | 2 Yr | 3 Yr | 5 Yr | 7 Yr | 10 Yr | 20 Yr | 30 Yr |
|-----------|------|-----------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 8/29/2025 | 4.41 | 4.34 | 4.3 | 4.23 | 4.17 | 4.01 | 3.83 | 3.59 | 3.58 | 3.68 | 3.92 | 4.23 | 4.86 | 4.92 |
| 8/28/2025 | 4.42 | 4.35 | 4.31 | 4.26 | 4.17 | 4.04 | 3.85 | 3.62 | 3.6 | 3.69 | 3.92 | 4.22 | 4.83 | 4.88 |
| 8/27/2025 | 4.42 | 4.36 | 4.3 | 4.26 | 4.18 | 4.04 | 3.83 | 3.59 | 3.59 | 3.69 | 3.95 | 4.24 | 4.87 | 4.91 |
| 8/26/2025 | 4.42 | 4.37 | 4.34 | 4.28 | 4.2 | 4.06 | 3.85 | 3.61 | 3.63 | 3.75 | 3.98 | 4.26 | 4.86 | 4.9 |
| 8/25/2025 | 4.45 | 4.38 | 4.35 | 4.29 | 4.21 | 4.08 | 3.88 | 3.73 | 3.68 | 3.8 | 4.01 | 4.28 | 4.86 | 4.89 |
| 8/22/2025 | 4.47 | 4.38 | 4.36 | 4.27 | 4.21 | 4.08 | 3.87 | 3.68 | 3.64 | 3.76 | 3.98 | 4.26 | 4.84 | 4.88 |
| 8/21/2025 | 4.49 | 4.41 | 4.39 | 4.32 | 4.24 | 4.14 | 3.95 | 3.79 | 3.75 | 3.86 | 4.07 | 4.33 | 4.89 | 4.92 |
| 8/20/2025 | 4.45 | 4.4 | 4.35 | 4.3 | 4.22 | 4.11 | 3.9 | 3.74 | 3.69 | 3.81 | 4.02 | 4.29 | 4.86 | 4.89 |
| 8/19/2025 | 4.46 | 4.4 | 4.35 | 4.3 | 4.21 | 4.11 | 3.91 | 3.75 | 3.7 | 3.82 | 4.04 | 4.3 | 4.89 | 4.9 |
| 8/18/2025 | 4.47 | 4.4 | 4.35 | 4.33 | 4.22 | 4.13 | 3.93 | 3.77 | 3.73 | 3.86 | 4.07 | 4.34 | 4.92 | 4.94 |
| 8/15/2025 | 4.48 | 4.42 | 4.35 | 4.3 | 4.22 | 4.12 | 3.93 | 3.75 | 3.73 | 3.85 | 4.07 | 4.33 | 4.91 | 4.92 |
| 8/14/2025 | 4.48 | 4.43 | 4.36 | 4.3 | 4.22 | 4.12 | 3.91 | 3.74 | 3.7 | 3.82 | 4.03 | 4.29 | 4.86 | 4.88 |
| 8/13/2025 | 4.44 | 4.42 | 4.32 | 4.29 | 4.21 | 4.09 | 3.86 | 3.67 | 3.64 | 3.77 | 3.98 | 4.24 | 4.81 | 4.83 |
| 8/12/2025 | 4.44 | 4.44 | 4.35 | 4.33 | 4.25 | 4.12 | 3.9 | 3.72 | 3.69 | 3.83 | 4.03 | 4.29 | 4.87 | 4.88 |
| 8/11/2025 | 4.46 | 4.41 | 4.38 | 4.34 | 4.27 | 4.15 | 3.93 | 3.76 | 3.71 | 3.83 | 4.03 | 4.27 | 4.83 | 4.84 |
| 8/8/2025 | 4.48 | 4.43 | 4.39 | 4.32 | 4.27 | 4.15 | 3.93 | 3.76 | 3.7 | 3.84 | 4.03 | 4.27 | 4.84 | 4.85 |
| 8/7/2025 | 4.49 | 4.46 | 4.41 | 4.32 | 4.27 | 4.15 | 3.92 | 3.72 | 3.66 | 3.79 | 3.99 | 4.23 | 4.81 | 4.81 |
| 8/6/2025 | 4.48 | 4.47 | 4.4 | 4.32 | 4.27 | 4.15 | 3.9 | 3.69 | 3.63 | 3.77 | 3.97 | 4.22 | 4.8 | 4.81 |
| 8/5/2025 | 4.49 | 4.48 | 4.41 | 4.34 | 4.29 | 4.16 | 3.92 | 3.72 | 3.63 | 3.77 | 3.97 | 4.22 | 4.77 | 4.78 |
| 8/4/2025 | 4.48 | 4.46 | 4.43 | 4.35 | 4.28 | 4.15 | 3.82 | 3.69 | 3.66 | 3.75 | 3.95 | 4.22 | 4.78 | 4.8 |
| 8/1/2025 | 4.49 | 4.46 | 4.44 | 4.35 | 4.3 | 4.16 | 3.87 | 3.69 | 3.67 | 3.77 | 3.97 | 4.23 | 4.79 | 4.81 |



The Fed and interest rates

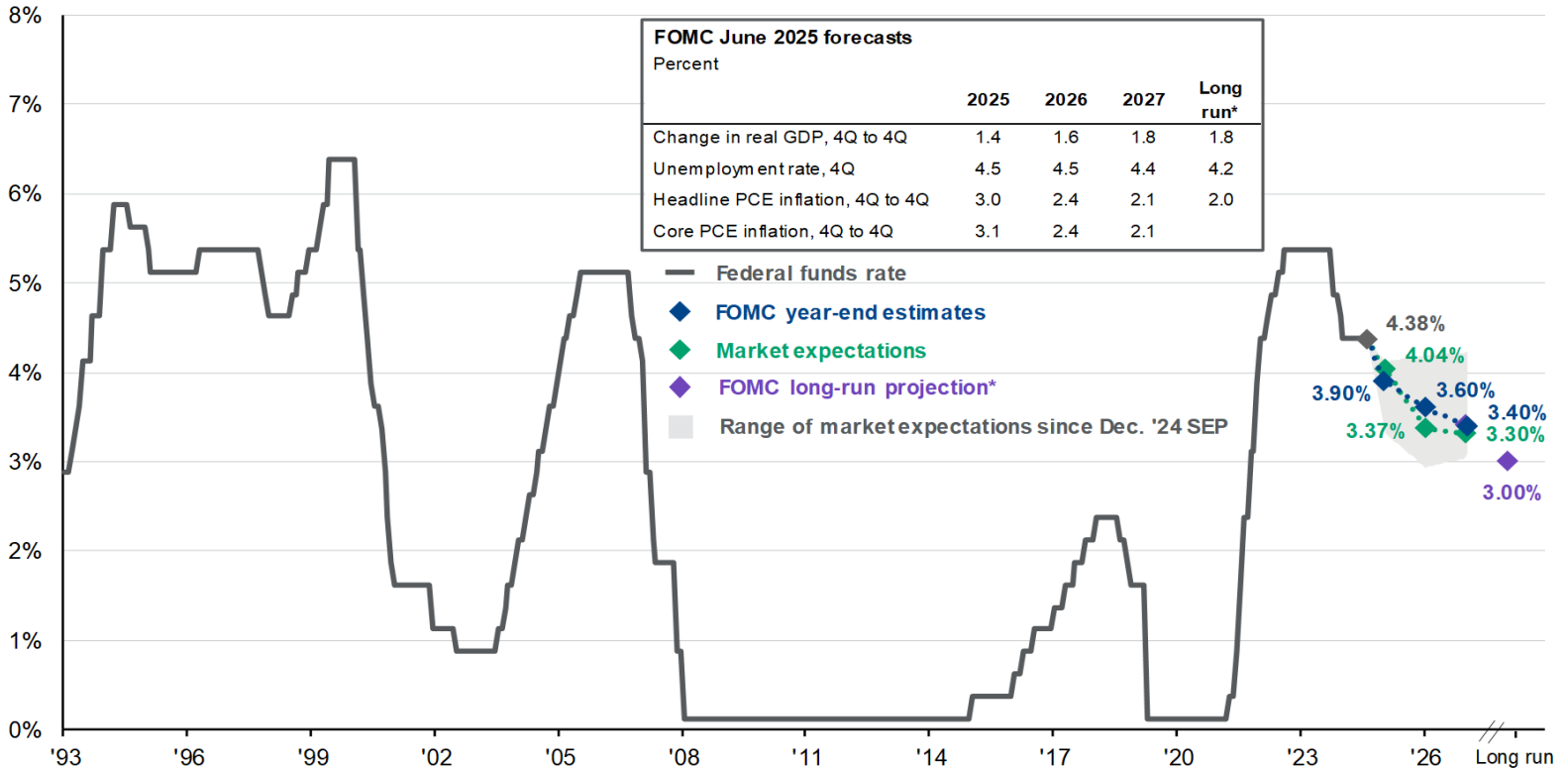
GTM

U.S.

33

Federal funds rate expectations

FOMC and market expectations for the federal funds rate



Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management.

Market expectations are based off of USD Overnight Index Swaps. *Long-run projections are the rates of growth, unemployment and inflation to which a policymaker expects the economy to converge over the next five to six years in absence of further shocks and under appropriate monetary policy. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecasts, projections or other forward-looking statements, actual events, results or performance may differ materially from those reflected or contemplated.

Guide to the Markets – U.S. Data are as of July 31, 2025.

J.P.Morgan
ASSET MANAGEMENT

Fixed Income

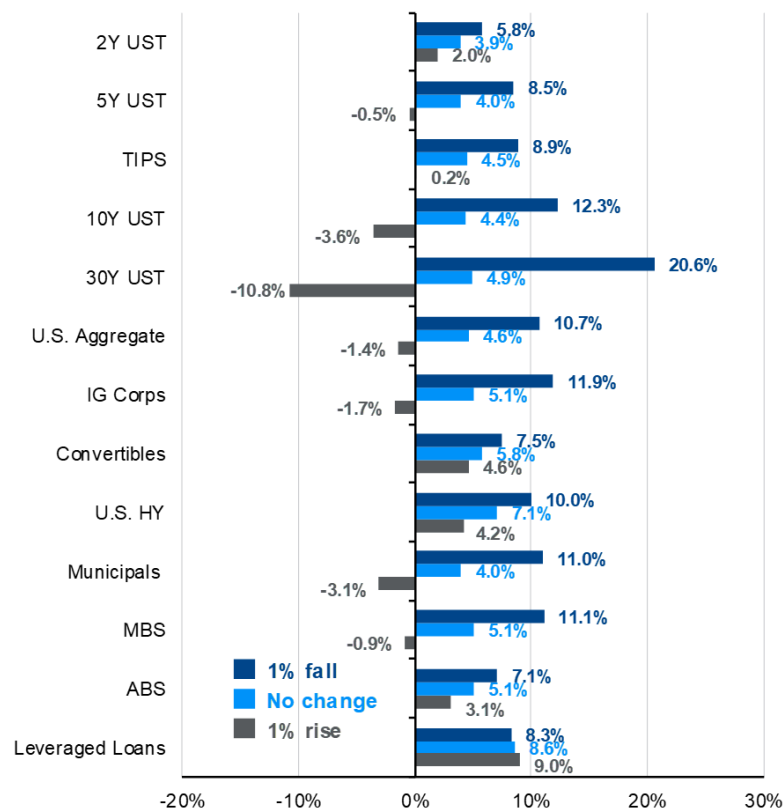


Fixed income market dynamics

| U.S. Treasuries | Yield | | Return | | Avg. Maturity | Correlation to 10-year | Correlation to S&P 500 |
|-----------------|-----------|------------|--------|---------|---------------|------------------------|------------------------|
| | 7/31/2025 | 12/31/2024 | 2025 | 2025 | | | |
| 2-Year | 3.94% | 4.25% | 2.61% | 2 years | 0.74 | 0.02 | |
| 5-Year | 3.96% | 4.38% | 4.34% | 5 | 0.94 | 0.00 | |
| TIPS | 1.74% | 2.13% | 4.79% | 7.2 | 0.74 | 0.35 | |
| 10-Year | 4.37% | 4.58% | 4.36% | 10 | 1.00 | -0.04 | |
| 30-Year | 4.89% | 4.78% | 0.83% | 30 | 0.93 | -0.08 | |
| Sector | | | | | | | |
| U.S. Aggregate | 4.64% | 4.91% | 3.75% | 8.3 | 0.90 | 0.27 | |
| IG Corps | 5.07% | 5.33% | 4.24% | 10.4 | 0.70 | 0.48 | |
| Convertibles | 5.84% | 6.13% | 9.67% | - | -0.01 | 0.86 | |
| U.S. HY | 7.08% | 7.49% | 5.04% | 4.7 | 0.11 | 0.79 | |
| Municipals | 3.98% | 3.74% | -0.55% | 13.3 | 0.74 | 0.27 | |
| MBS | 5.07% | 5.27% | 3.81% | 7.9 | 0.82 | 0.28 | |
| ABS | 5.09% | 5.38% | 3.32% | 2.2 | 0.41 | 0.26 | |
| Leveraged Loans | 8.67% | 8.68% | 3.68% | 4.6 | -0.21 | 0.61 | |

Fixed income returns in different interest rate scenarios

Total return, assumes a parallel shift in the yield curve



Source: Bloomberg, FactSet, Federal Reserve Bank of Cleveland, Standard & Poor's, U.S. Treasury, J.P. Morgan Asset Management. Sectors shown above are provided by Bloomberg unless otherwise noted and are represented by – U.S. Aggregate; MBS: U.S. Aggregate Securitized – MBS; ABS: J.P. Morgan ABS Index; IG Corporates: U.S. Corporates; Municipals: Muni Bond; High Yield: Corporate High Yield; Leveraged Loans: J.P. Morgan Leveraged Loan Index; TIPS: Treasury Inflation-Protected Securities; Convertibles: U.S. Convertibles Composite. Convertibles yield is as of most recent month-end and is based on U.S. portion of Bloomberg Global Convertibles Index. Yield and return information based on bellwethers for Treasury securities. Yields shown for TIPS are real yields. TIPS returns consider the impact that inflation could have on returns by assuming the Cleveland Fed's 1-year inflation expectation forecasts are realized. Sector yields reflect yield-to-worst. Leveraged loan yields reflect the yield to 3Y takeout. Correlations are based on 15-years of monthly returns for all sectors. ABS returns prior to June 2012 are sourced from Bloomberg. Past performance is not indicative of future results. Guide to the Markets – U.S. Data are as of July 31, 2025.

Story of two couples

Mr. & Mrs. Blue



Mr. & Mrs. Green



- Each couple retires at 65 with a life expectancy of one surviving to 90
- Each has an IRA with \$500,000 invested in the S&P 500
- Each couple withdraws \$20,000 (4%) per year to help with expenses
- **Mr. & Mrs. Green** retire in 1990
- **Mr. & Mrs. Blue** retire in 2000

The big picture

Stock market since 1900

GTM - U.S. | 19

What, Me Worry?

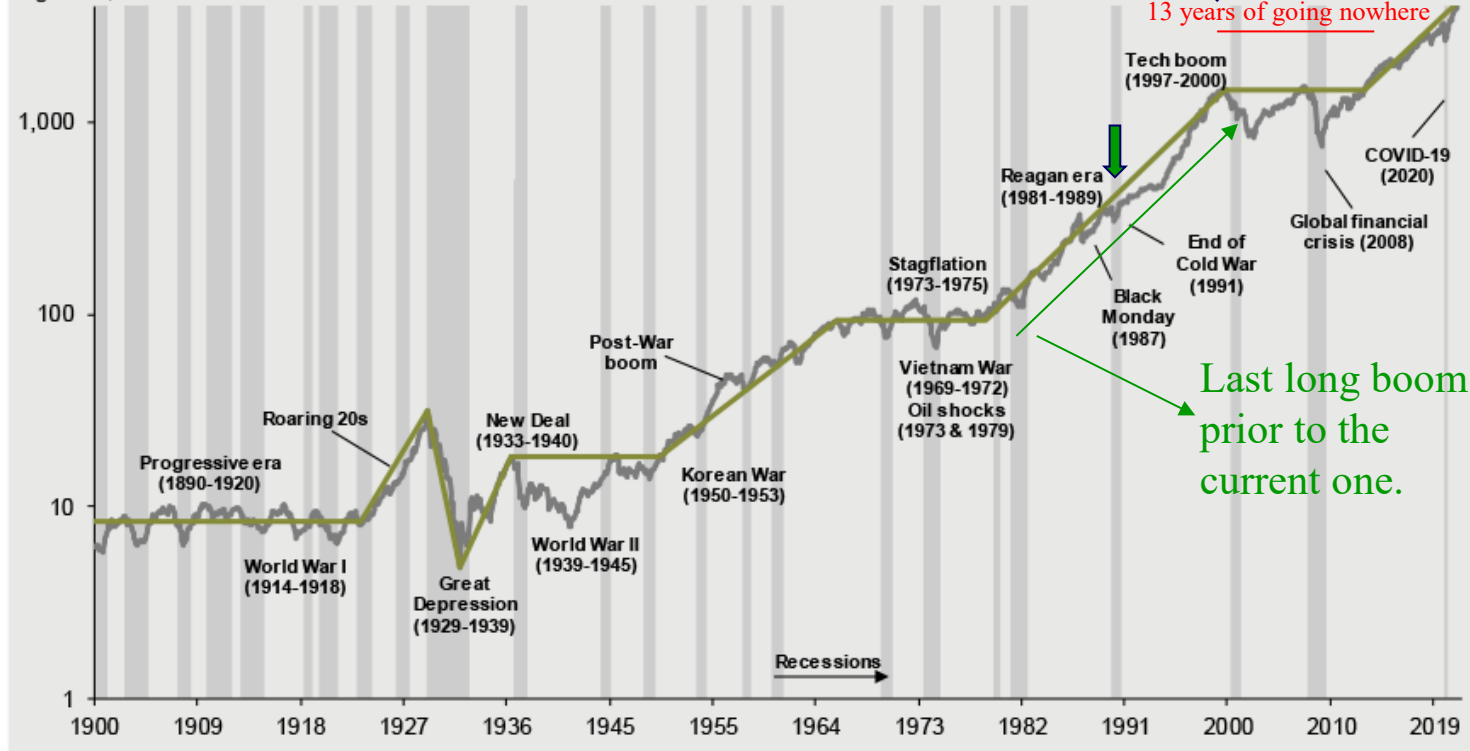


Mad Magazine

Equities

S&P Composite Index

Log scale, annual



Source: FactSet, NBER, Robert Shiller, J.P. Morgan Asset Management.

Data shown in log scale to best illustrate long-term index patterns. Past performance is not indicative of future returns. Chart is for illustrative purposes only.

Guide to the Markets – U.S. Data are as of August 31, 2021.

J.P.Morgan
Asset Management

Two Very Different Retirements

Mr. & Mrs. Green

| Year | Return | \$500,000 |
|------|--------|-------------|
| 1990 | -3.1% | \$464,700 |
| 1991 | 30.2% | \$585,179 |
| 1992 | 7.5% | \$609,009 |
| 1993 | 10.0% | \$649,727 |
| 1994 | 1.3% | \$638,368 |
| 1995 | 37.2% | \$855,841 |
| 1996 | 22.7% | \$1,029,946 |
| 1997 | 33.1% | \$1,350,858 |
| 1998 | 28.3% | \$1,713,691 |
| 1999 | 20.9% | \$2,051,681 |

Mr. & Mrs. Blue

| Year | Return | \$500,000 |
|------|--------|-----------|
| 2000 | -9.0% | \$434,850 |
| 2001 | -11.9% | \$363,320 |
| 2002 | -22.0% | \$263,499 |
| 2003 | 28.4% | \$318,227 |
| 2004 | 10.7% | \$332,405 |
| 2005 | 4.8% | \$328,460 |
| 2006 | 15.6% | \$359,732 |
| 2007 | 5.5% | \$359,446 |
| 2008 | -36.6% | \$208,068 |
| 2009 | 25.9% | \$242,041 |

Portfolio drops to half in the first 3 years

- Sequence of return
- Drawdown in down markets.

Both couples have 10-15 more years of retired life



Asset class returns

GTM

U.S.

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| 2010–2024 | | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | YTD |
|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|-----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|----------------------|
| Ann. | Vol. | | | | | | | | | | | | | | | | |
| Large Cap 13.9% | Small Cap 20.6% | 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% | Com dty. 16.1% | Large Cap 26.3% | Large Cap 25.0% | DM Equity 18.3% |
| Small Cap 10.3% | EM Equity 17.9% | 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 18.9% | Small Cap 11.5% | EM Equity 17.9% |
| REITs 9.4% | REITs 16.8% | 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% | Com dty. 27.1% | High Yield -12.7% | Small Cap 16.9% | Asset Alloc. 10.0% | Large Cap 8.6% |
| Asset Alloc. 7.2% | DM Equity 16.5% | Com dty. 16.8% | Large Cap 2.1% | DM Equity 17.9% | Asset Alloc. 14.9% | Asset Alloc. 5.2% | Cash 0.0% | Com dty. 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. 14.1% | High Yield 9.2% | Asset Alloc. 7.5% |
| High Yield 5.9% | Com dty. 16.1% | 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 14.0% | EM Equity 8.1% | High Yield 7.2% |
| DM Equity 5.7% | Large Cap 15.1% | 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% | REITs 11.4% | Com dty. 5.4% | Com dty. 5.0% |
| EM Equity 3.4% | Asset Alloc. 10.4% | 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% | EM Equity 10.3% | Cash 5.3% | Fixed Income 3.7% |
| Fixed Income 2.4% | High Yield 9.4% | 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% | Com dty. -11.2% | Fixed Income 8.7% | Cash 0.5% | Cash 0.0% | EM Equity -19.7% | Fixed Income 5.5% | REITs 4.9% | Cash 2.5% |
| Cash 1.2% | Fixed Income 4.7% | Fixed Income 6.5% | Com dty. -13.3% | Cash 0.1% | EM Equity -2.3% | DM Equity -4.5% | EM Equity -14.6% | DM Equity 1.5% | Com dty. 1.7% | DM Equity -13.4% | Com dty. 7.7% | Com dty. -3.1% | Fixed Income -1.5% | Small Cap -20.4% | Cash 5.1% | DM Equity 4.3% | REITs 0.7% |
| Com dty. -1.0% | Cash 0.9% | Cash 0.1% | EM Equity -18.2% | Com dty. -1.1% | Com dty. -9.5% | Com dty. -17.0% | Com dty. -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% | Com dty. -7.9% | Fixed Income 1.3% | Small Cap -0.1% |

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 is for illustrative purposes only and assumes annual rebalancing with 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. Annualized (Ann.) return and volatility (Vol.) represents the period from 12/31/2009 to 12/31/2024. Please see the disclosure page at the end for index definitions. All data represent total return for stated period. Past performance is not indicative of future returns.

Guide to the Markets – U.S. Data are as of July 31, 2025.

Second Class – Sep. 10th

- Market Update
- Macro Review
 - Deep Dive into the JP Morgan Monthly Market review
 - Technical analysis
- Questions

Thanks !!

- Happy Investing !!

- **My EMail**

 - diyinvst@udel.edu

- **Class website**

 - <http://udel.edu/~diyinvst>