# 2025 PERSONAL FINANCE CONFERENCE

# *Welcome*

SCHOLAR ADVISING

SCHOLAR ADVISING

# 2025 PERSONAL FINANCE CONFERENCE

# SCHOLAR AT A GLANCE

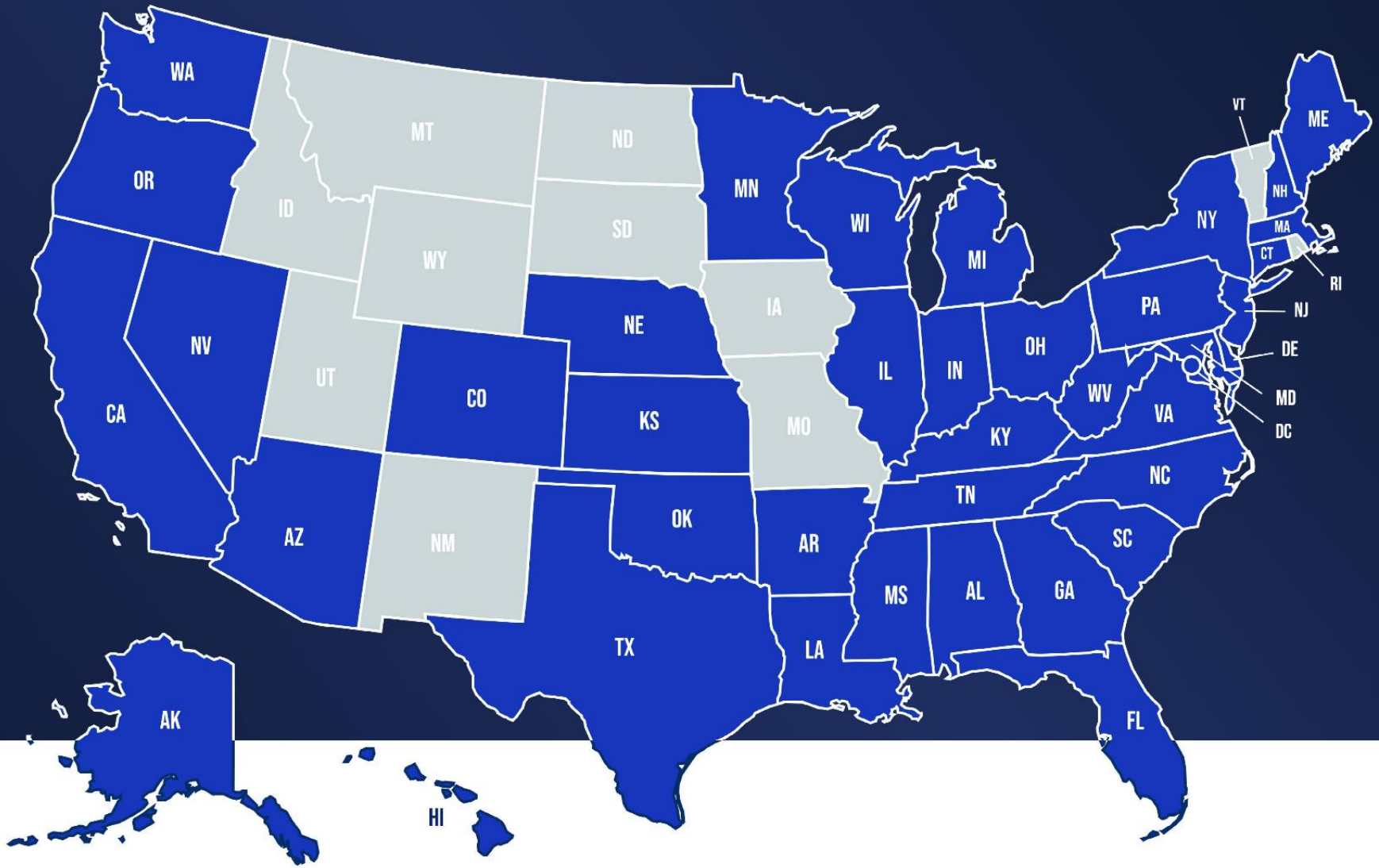
FOUNDED
2018

FEATURED IN:
BARRON'S
Kiplinger's PERSONAL FINANCE
Bloomberg
FinancialPlanning
MarketWatch
CBS NEWS
c|net
yahoo! finance
Investopedia
AND MORE...

TEN TEAM MEMBERS ACROSS 4 STATES

$1B
ASSETS UNDER ADVISEMENT IN 2024

SCHOLAR ADVISING




## FROM COAST TO COAST - AND BEYOND.

**SCHOLAR ADVISING SUPPORTS CLIENTS IN 39 U.S. STATES, D.C., CANADA, AND DUBAI.**

SCHOLAR ADVISING

A LOOK INSIDE

# SCHOLAR ADVISING HQ




SCHOLAR ADVISING

# FROM TULIPS TO TECH WHAT MARKET MANIAS TEACH US ABOUT INFLATION TODAY

STEPHAN SHIPE, PH.D., CFA, CFP®

SCHOLAR ADVISING

# AGENDA

- **Goal:** Understand bubbles, inflation, and investor behavior

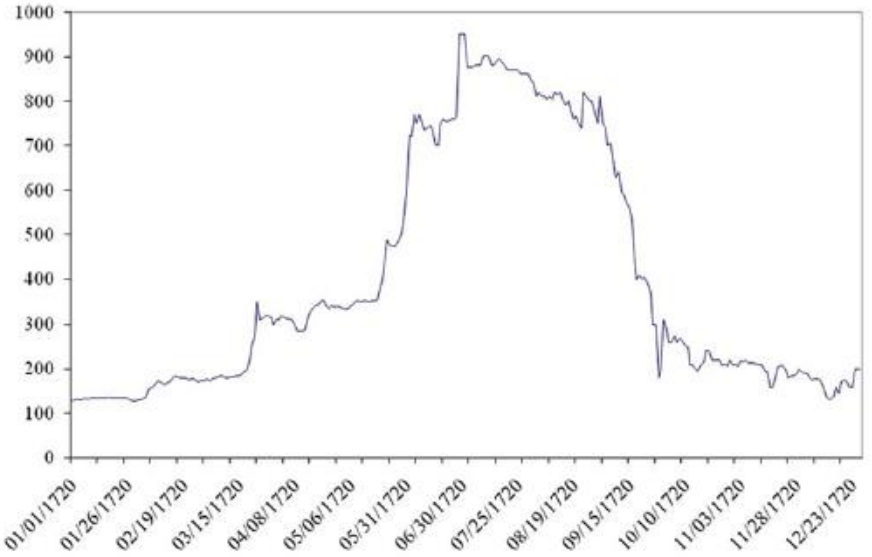
- History of Financial Bubbles
- Inflation’s Role in Market Manias
- Investor Psychology and Asset Reactions
- Investor Takeaways and Strategy

# TULIP MANIA

- First recorded speculative bubble (1630s)
- Reasons: Scarcity, novelty, and FOMO

# EARLY STOCKS: SOUTH SEA BUBBLE

- 1720 British stock fraud and hype
- Reasons: Government involvement x2, new financial tool, and public speculation



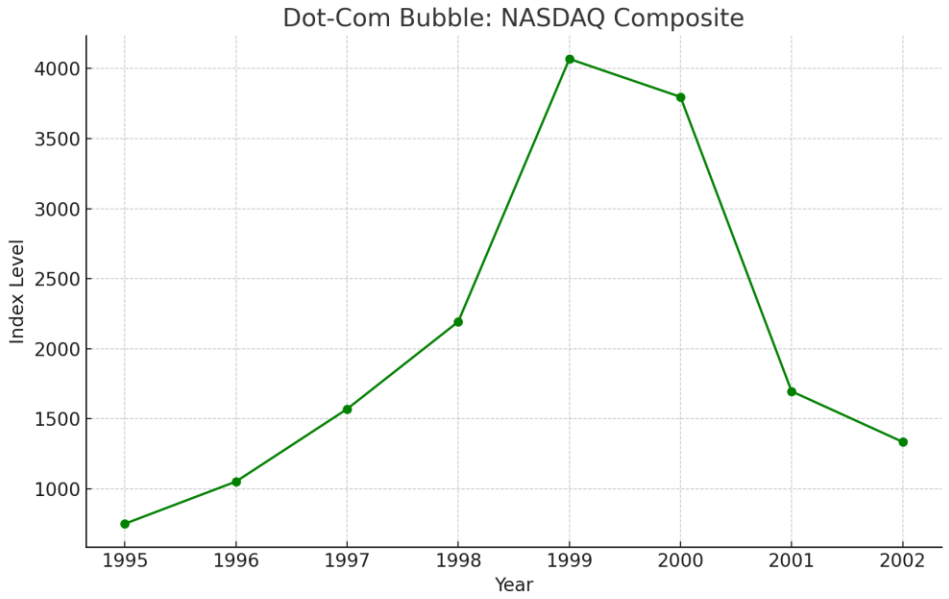
# EARLY STOCKS: SOUTH SEA BUBBLE

"I can calculate the motion of the heavenly bodies, not the madness of people."

- Sir Isaac Newton

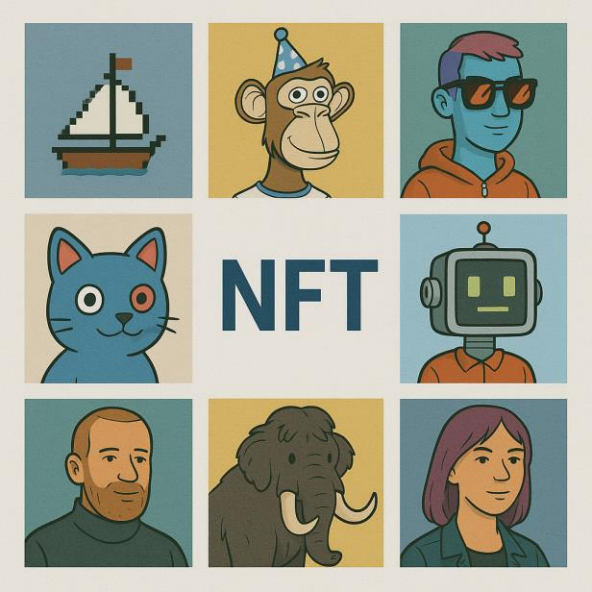
# DOT-COM BUBBLE

- 1990s tech boom and crash
- Reasons: Unrealistic expectations, IPO mania



# CRYPTO AND NFTS

- Modern digital speculation (2017–2022)
- Reasons: Role of social media and zero-interest rate environment



# RECOGNIZING BUBBLE INDICATORS

- Parabolic price charts
- Mass retail and media hype
- Lack of fundamentals
- Easy credit
- Easy returns
- Limitless growth potential

# THE MADNESS OF CROWDS

*Why do bubbles feel different each time?*


# FUEL FOR THE FIRE: HOW MONETARY CONDITIONS SPARK MARKET MANIAS

- Background on Fed
  - Central bank of the US, 1913
  - Dual Mandate (unemployment and maintaining stable prices)
  - Tools:
    - Set interest rates
    - Open market operations (buy/sell gov securities)
    - Bank reserve requirements

# FUEL FOR THE FIRE: HOW MONETARY CONDITIONS SPARK MARKET MANIAS

**1. Bubbles thrive in low-inflation, low-interest-rate environments.** Cheap borrowing and abundant liquidity feed speculative risk-taking.

**2. When inflation is low:**

Central banks often maintain accommodative policies (more cash, more speculation).

**3. When inflation rises suddenly:**

Central banks tighten → rates go up → bubbles burst

**4. After the crash**, investors confront **real return erosion** from rising inflation.

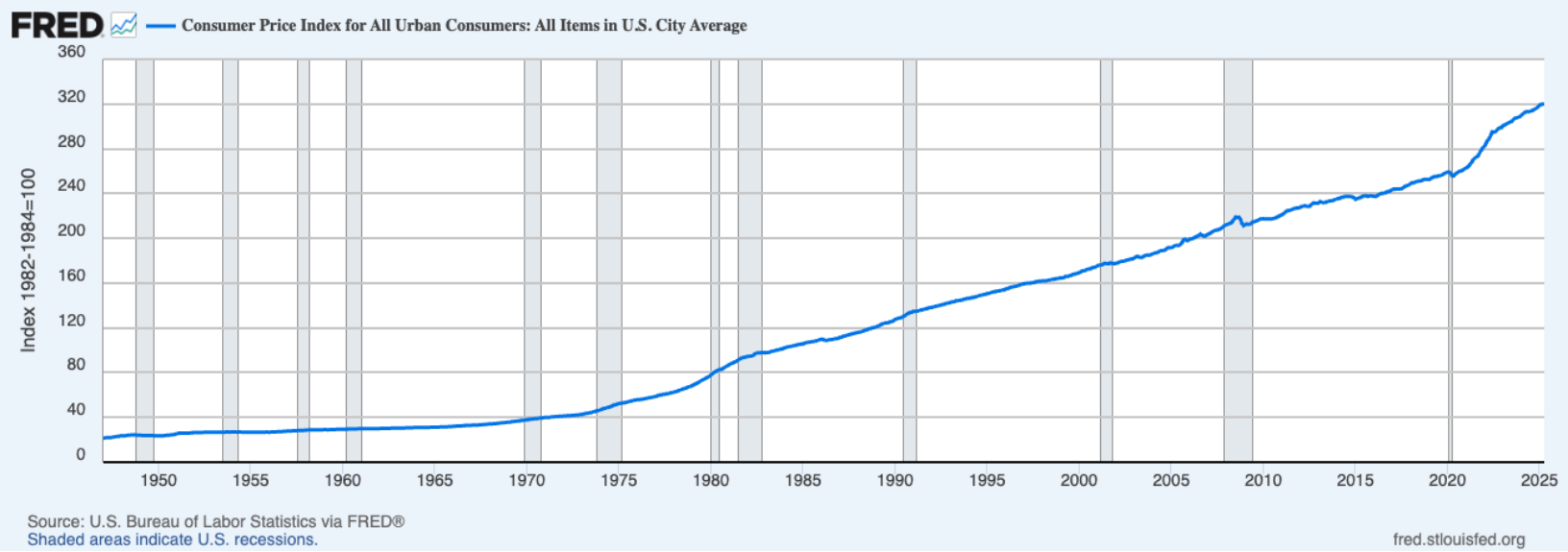
Shift from chasing speculative gains to preserving purchasing power. Fraud reported.

# CHEAP MONEY AND RISK

- Low inflation leads to cheap and abundant credit
- Central banks provide more cash to boost inflation
- Limited return alternatives (recent impact)

# WHAT IS INFLATION?

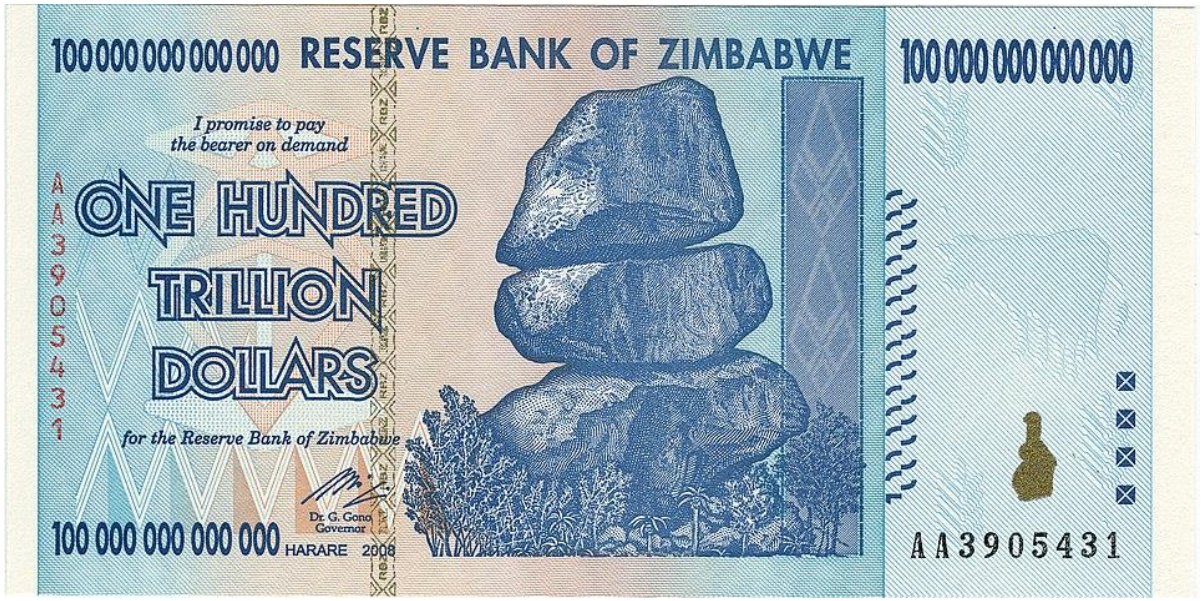
- Purchasing power
- Demand Pull vs Cost Push
- CPI Measurement
- “I’ll wait for prices to come back down”



# -FLATION

| | Inflation | Deflation | Stagflation |
|---|---|---|---|
| **Definition** | Rise in general price levels | Decline in general price levels | Combination of high inflation + high unemployment + stagnant growth |
| **Price Behavior** | Prices go **up** | Prices go **down** | Prices **rise** while the economy **shrinks or stagnates** |
| **Economic Growth** | Often positive (but not always) | Often negative or flat | Negative or stagnant |
| **Consumer Impact** | Purchasing power declines | Money gains value, but jobs/income may suffer | Cost of living rises, but wages/employment don't keep up |
| **Policy Response** | Raise interest rates, reduce money supply | Lower interest rates, stimulate demand | Conflicted: raising rates cools inflation but worsens job losses |

# HYPERINFLATION




# INFLATION HEDGE OPTIONS

- Factors to Consider:

1. Income creation
2. Productive use
3. Ability to pass on prices
4. Expectation or current inflation

# REAL ESTATE AS A HEDGE

- Value increases over the long term
- Rental income can increase with inflation
- Tangible asset with value
- Mortgages become cheaper in inflationary time periods

# EQUITIES AS A HEDGE

- Companies can pass on costs to consumers
- Consumer staples and energy do well because demand is more staple than discretionary
- Limits to this hedge in high interest rate environments

# FIXED INCOME AS A HEDGE

- Be wary of fixed rate products
- Variable rates are useful, but come with higher liquidity and credit risk
- TIPS are for expectations
- Interest rate risk
  - Low duration is better

# CRYPTO AND INFLATION

- Potential hedge if gold is an indicator of crypto psychology
- Historical data is limited especially in “normal” interest rate environments
- Lack of income, questionable use, and multiple options create potential issues as a hedge

# COMMODITIES

- Great for expected inflation. Already accounted for in CPI.

- Exposure to the industry or the commodity?
  - Oil vs. Exxon

# BUYING GOLD

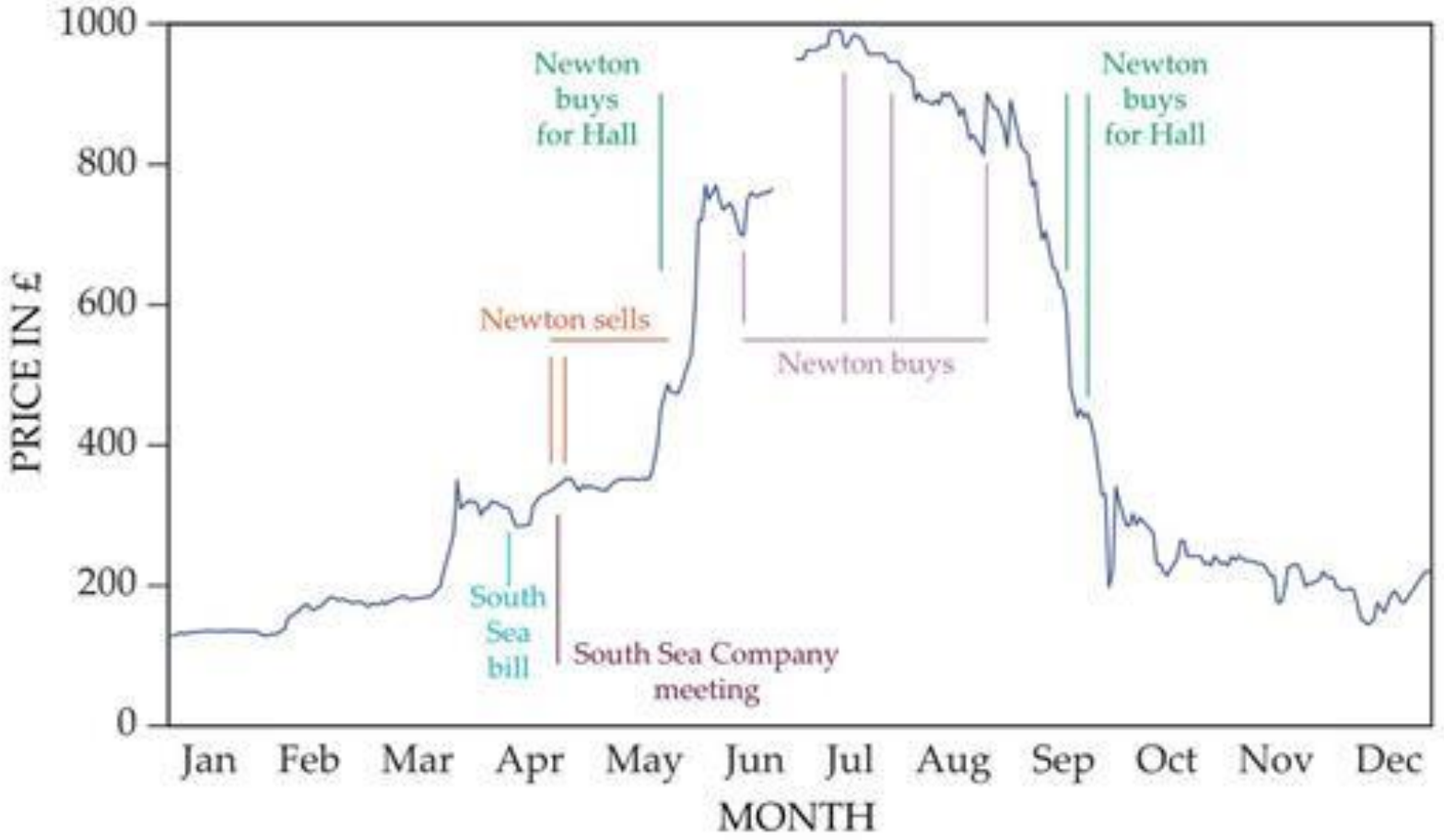
- Physical Boullion
  - Storage costs
  - Liquidity (1-5%)
  - Insurance (1-3%)


- Gold ETFs
- Gold doesn’t generate income
- Prices are volatile (similar to equities)

# BEHAVIORAL PITFALLS

- FOMO
- Chasing returns
- Panic selling
- Importance of discipline and perspective

# BEHAVIORAL PITFALLS



# KEY TAKEAWAYS

- Bubbles are driven by psychology and easy money
- Inflation shifts risk behavior and asset appeal
  - Low inflation leading to speculation
  - High inflation leading to preservation of real returns
- Inflation hedges work best in anticipation of inflation, not during
- “History doesn't repeat, but it rhymes”

# WHAT'S NEXT?

- Increased interest in "safe" assets
- Gold's ability to live up to expectations
- Is AI next?
- Investors can prepare, not predict

# QUESTIONS?

# PRIVATE EQUITY AS AN ASSET CLASS: INTEGRATION INTO PORTFOLIO STRATEGY

BRANDON MENDEZ, PHD, CPA

SCHOLAR ADVISING

# BACKGROUND

# WHAT IS PRIVATE EQUITY?


- Private equity (PE) involves taking direct ownership in companies with the goal to drive operational improvements to increase company value, exiting via IPO or strategic sale.
- Private ownership of companies allows for control, transformation, and timing.

# WHY PRIVATE EQUITY MATTERS

| Investor Focus | Results |
|---|---|
| 1. Performance | Long-term outperformance vs public markets. |
| 2. Edge | Access to value creation strategies not available to public investors. |
| 3. Growth | Growing share of global capital markets activity. |

# THE SPECTRUM OF PE STRATEGIES

- Buyouts
  - Acquiring a controlling stake in established companies to drive value creation
- Growth Equity
  - Investing in mature companies with untapped growth potential to accelerate expansion
- Venture Capital
  - Backing early-stage startups with disruptive technologies and innovative business models
- Distressed Investing
  - Restructuring or purchasing underperforming, financially troubled companies

# COMMON CHARACTERISTICS OF PE DEALS

Concentrated Portfolios

- PE firms often specialize in a select area and limit the number of companies they operate at any one time

High Leverage

- Maximizes deployment of capital and returns

Long Lock-up Periods

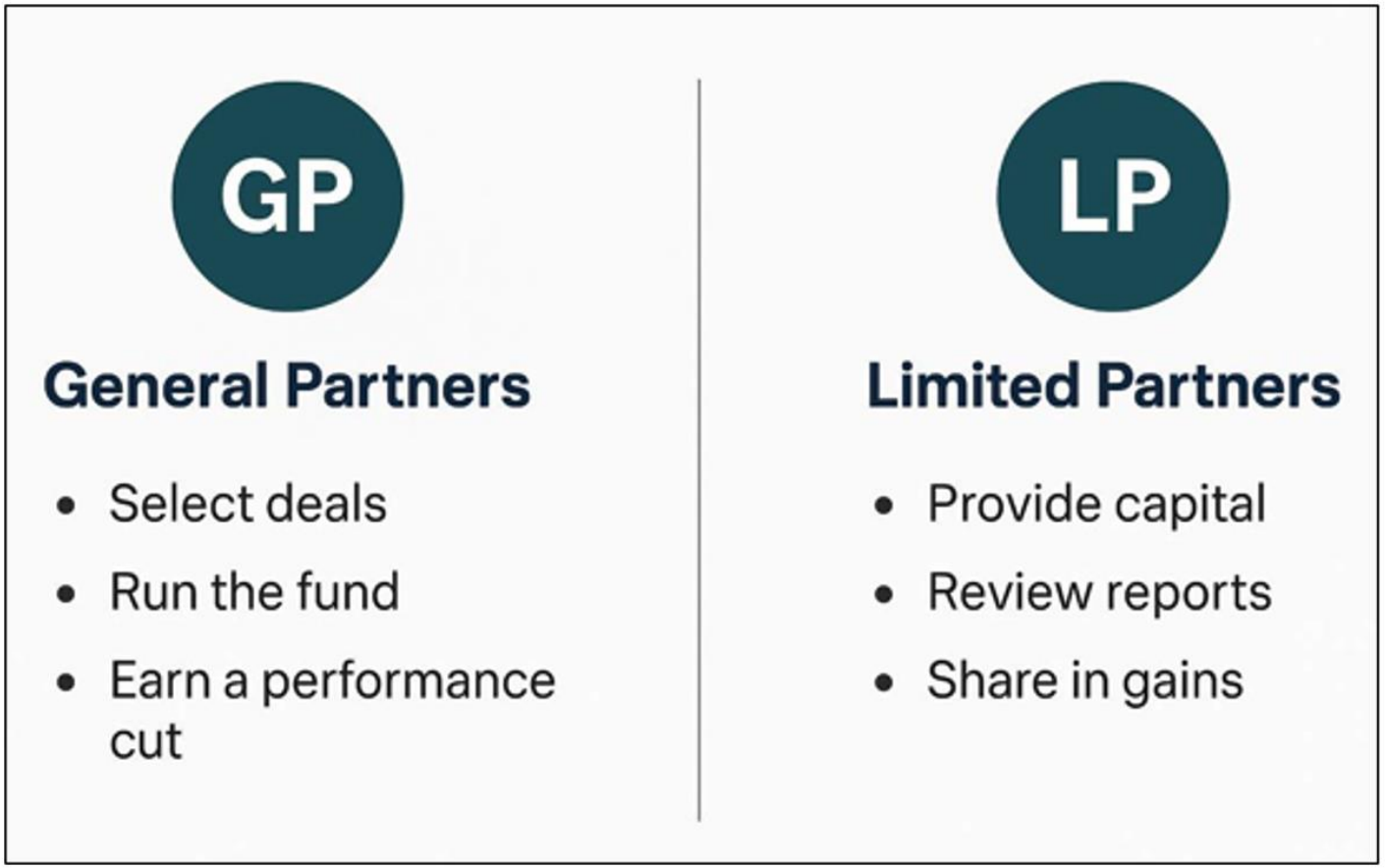
- Capital deployed is typically untouchable until a liquidity event occurs

Active Management

- Fund managers take an active role sourcing, financing, and closing deals

# STRUCTURE, HORIZON, AND PAYOUT

# STRUCTURE OF A PE FUND



# The Timeline: A 10-Year Journey

**Investment**
0 Years

**Active Management**
1–10 Years

**Exit**
10 Years

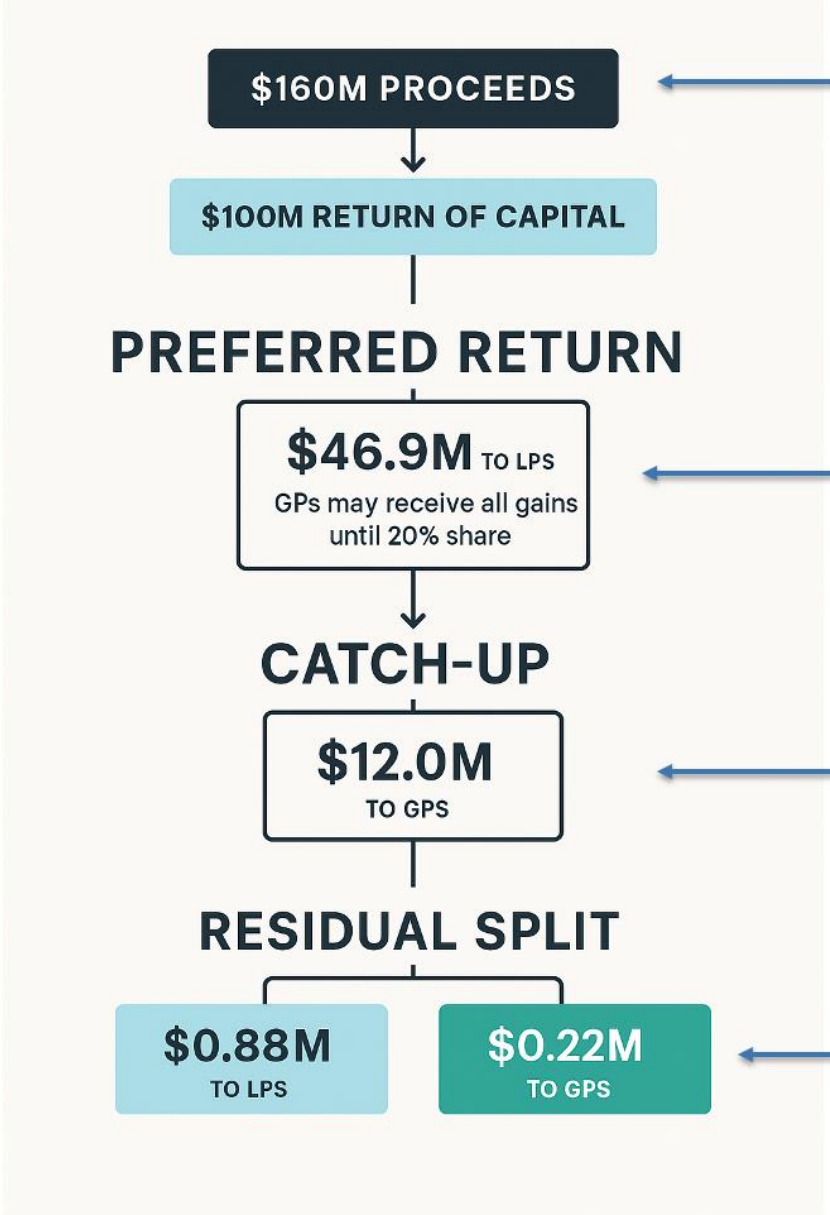
# PE FEE STRUCTURE (WHAT INVESTORS PAY)

1. Management Fee: ~2% of committed capital
2. Performance Fee (Carried Interest): 20% of profits above a typical 8% hurdle
3. Other Costs: Organizational fees, deal fees, fund expenses

- Example: $5M commitment may incur $100K/year management fees before performance fees

# WATERFALL PAYOUT STRUCTURE

- Preferred Return: 8% IRR to LPs first
- Catch-Up: GPs may receive all gains until 20% share
- Residual Split: 80/20 between LPs/GPs



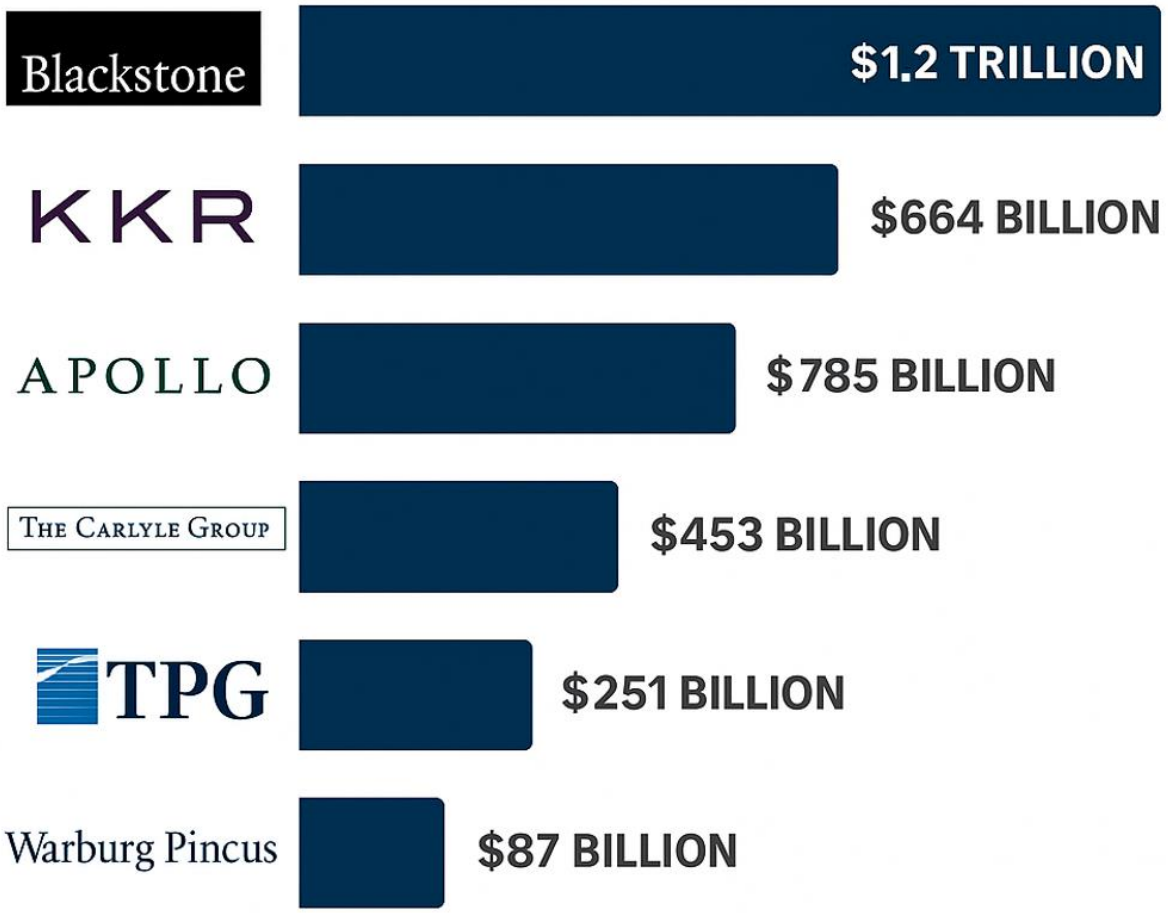

Top of the Waterfall

8% IRR to LPS

20% of profit to GPS

Residual profit split 80/20

# TOP PRIVATE EQUITY FIRMS BY AUM



# PERFORMANCE

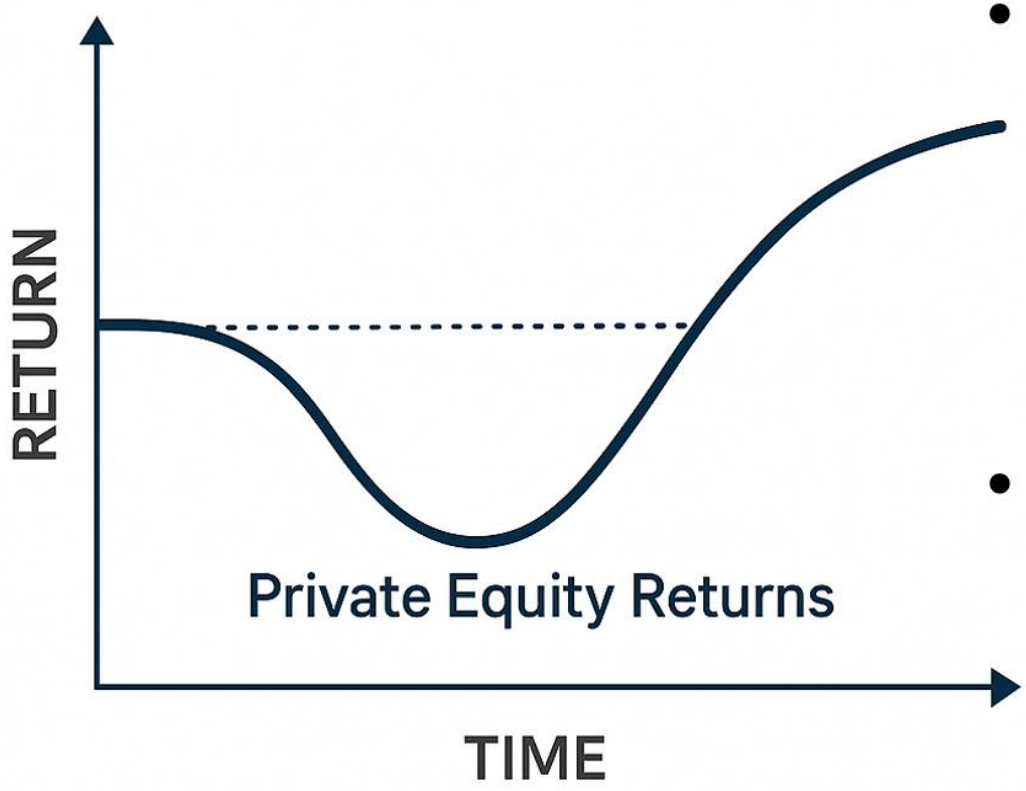
# PRIVATE EQUITY RETURNS

- According to Cambridge Associates and other benchmarks:
  - Average Annual Return of Private Equity: 13.1%
  - Average Annual Return of the S&P 500: 9.3%

- The return premium is attributed to:
  - Active ownership and operational improvements
  - Longer investment horizon and illiquidity premium
  - Greater use of leverage and incentive alignment

- Top-quartile managers significantly outperform median
  - Significant variability in PE firm performance

# THE J-CURVE EFFECT




- Negative returns in early years from fees and ramp-up
- Value creation and exits typically occur after year 4–5

# PRIVATE VS PUBLIC EQUITY

| Metric | Private Equity | Public Equity |
|---|---|---|
| Ownership & Access | Limited | Open |
| Liquidity | Illiquid | Highly Liquid |
| Valuation & Transparency | Limited | Real-time valuation and SEC Oversight |
| Control & Involvement | Majority Control w/ Active Management | Minority Ownership & Limited Influence |
| Return Profile & Risk | 13.1% & High Risk | 9.3% & Medium Risk |

# RISKS OF PRIVATE EQUITY

1. Illiquidity
   - Capital is locked up for 7–10 years

2. Leverage Risk
   - Debt magnifies both returns and losses

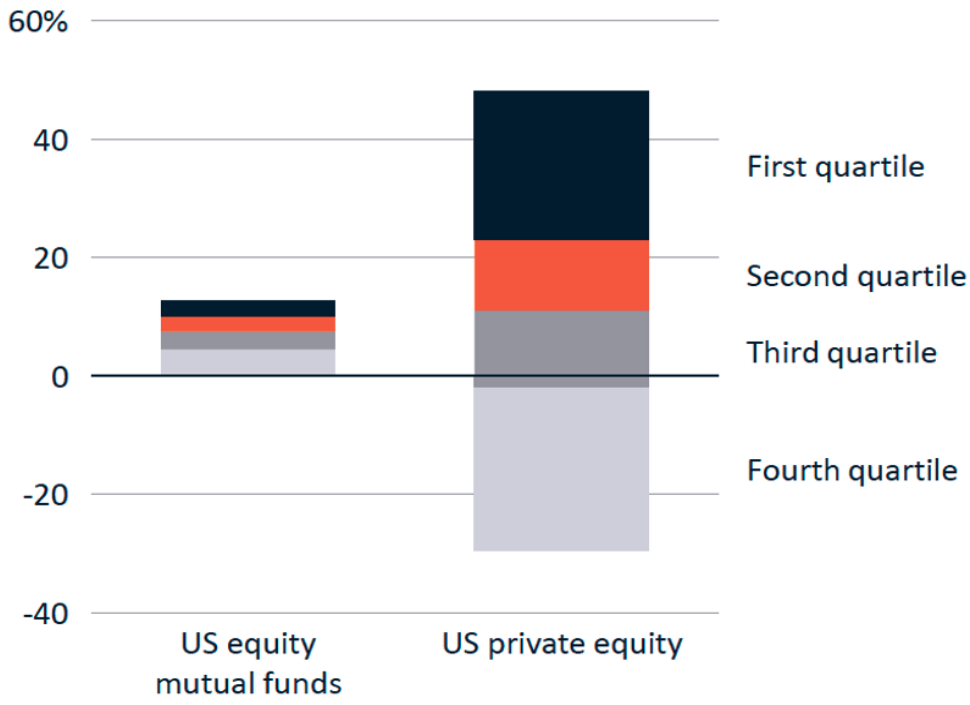
3. Manager Risk
   - Performance dispersion is substantial

4. Valuation Risk
   - Subjective valuation at quarterly intervals

# MANAGER RISK DISPERSION

**Return dispersion is much greater in private equity than in public markets**

5-year annual returns from US private equity funds and US mutual funds by performance percentile, 2013-2018




Cite: https://www.moonfare.com/blog/private-equity-basics-in-6-charts

# HOW TO INVEST

# ACCESS POINTS FOR INDIVIDUAL INVESTORS

- LP in PE Fund
  - Become an LP in a traditional fund
- Feeder funds (Moonfare, iCapital, etc.)
  Aggregate capital to invest in large PE funds
- Interval funds (e.g., BCRED)
  - PE Lite: PE exposure with more regulation and liquidity
- PE ETFs & Publicly Traded Firms
  - Take a position in Blackstone, KKR, Apollo

# PORTFOLIO ROLE OF PE

- Potential for return premium over public markets
- Diversifies public market risk
- Suited for 7–10+ year investment horizons

# SUMMARY AND FINAL THOUGHTS

- PE is an alternative investment that may provide enhanced returns over public markets
- Firm/Fund/Manager selection is critical
- Expanding access may increase liquidity

# QUESTIONS & CONTACT INFO

Thank you for your time and engagement

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# THINKING ABOUT INVESTING IN CRYPTOCURRENCY?

## WHAT YOU NEED TO KNOW WHEN CONSIDERING ADDING IT TO YOUR PORTFOLIO

KYRE LAHTINEN, PH.D.

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# Coinbase Stock Jumps 25% After S&P 500 Inclusion News

By DAVID MARINO-NACHISON Published May 13, 2025 03:15 PM EDT


**Coinbase Global is set to replace Discover Financial on the S&P 500 next week.**
Credit: Lionel Bonaventure / AFP via Getty Images

Investors jumped on shares of Coinbase Global (COIN) after the Monday night news that the crypto exchange will join the S&P 500 next week.

POLICY | ELECTION COVERAGE 2024

Share

# Crypto Poll: U.S. Voters More Serious About Demanding Candidates With Know-How

The latest Harris Poll look at U.S. voters shows more than half want crypto-informed candidates, and a separate analysis argues crypto voters could be a force in 2024.

BY JESSE HAMILTON | EDITED BY NIKHILESH DE

Updated Sep 30, 2024 at 10:42 a.m. Published Sep 30, 2024 at 9:00 a.m.

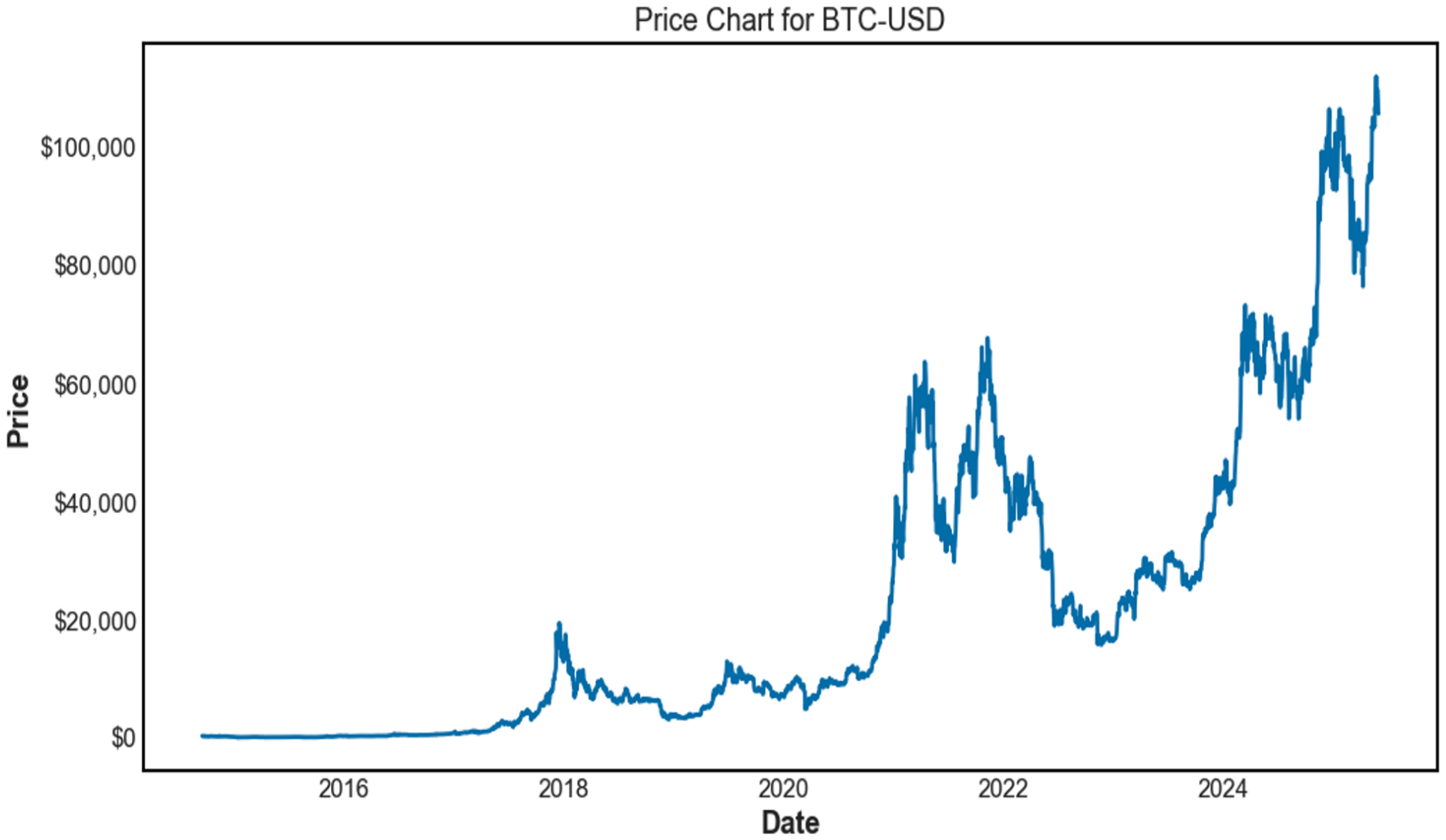
CONGRESS

# Senate advances a major crypto regulation bill on a bipartisan vote

The vote on the GENIUS Act, which would set up a regulatory framework for stablecoins, came two weeks after Senate Democrats blocked the measure.


Sen. Mark Warner of Virginia was one of the Democrats involved in bipartisan negotiations over the GENIUS Act.

Kent Nishimura / Bloomberg via Getty Images file


Price Chart for BTC-USD
$100,000
$80,000
$60,000
$40,000
$20,000
$0
Price
2016
2018
2020
2022
2024
Date

# “INVEST ONLY IN WHAT YOU UNDERSTAND”

# OUTLINE

- What is Cryptocurrency?
- What does it mean to own Cryptocurrency?
- How does Cryptocurrency compare to other assets?
- Can you value Cryptocurrency?
- How does Cryptocurrency fit in a well-diversified portfolio?

# WHAT IS CRYPTOCURRENCY?

Information for this section was primarily drawn from the original Bitcoin paper:
Nakamoto, Satoshi (31 October 2008). "Bitcoin: A Peer-to-Peer Electronic Cash System".
https://bitcoin.org/bitcoin.pdf.

# BITCOIN

## THE ORIGINAL PAPER

- Who? Satoshi Nakamoto
- When? October 31, 2008
- What? A peer-to-peer electronic cash system
- Where? Online
- Why? To overcome perceived limitations of electronic currency
- How? By applying cryptographic processes in a novel way

# WHY BITCOIN?

## KEY POINTS

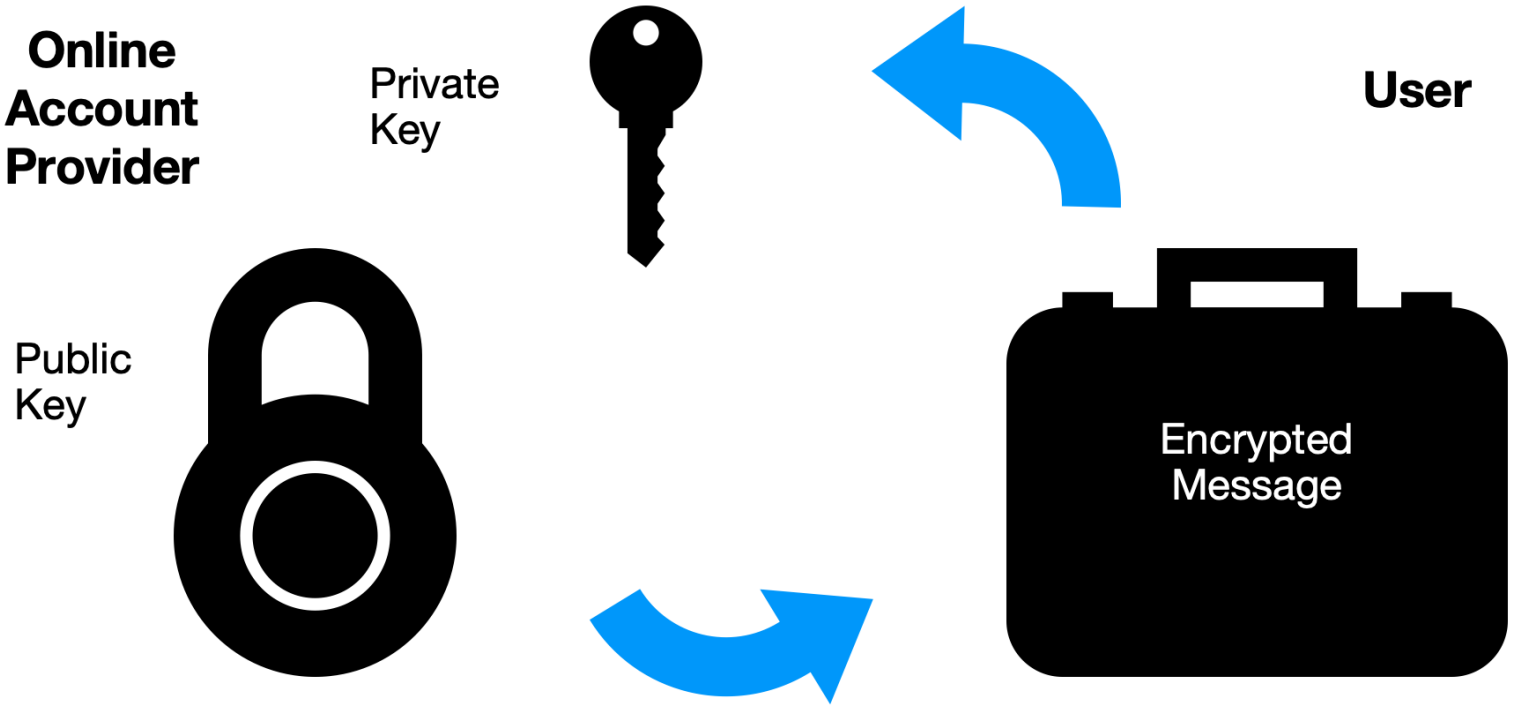
- In the current system completely non-reversible transactions are not really possible
- Mediation costs increase transaction costs, limiting the minimum practical transaction size and cutting off the possibility for small casual transactions
- No ability to make non-reversible payments for non-reversible services
- The current system is based on trust
- A certain percentage of fraud is accepted as unavoidable. These costs and payment uncertainties can be avoided in person by using physical currency, but no mechanism exists to make payments over a communications channel without a trusted party

# WHAT PROBLEMS EXIST WITH DIGITAL CURRENCIES?

## KEY POINTS

- Digital, online, or other computerized systems eliminate the scarcity problem for goods
- No scarcity means that digital currencies face double-spending and verification of account balances problems

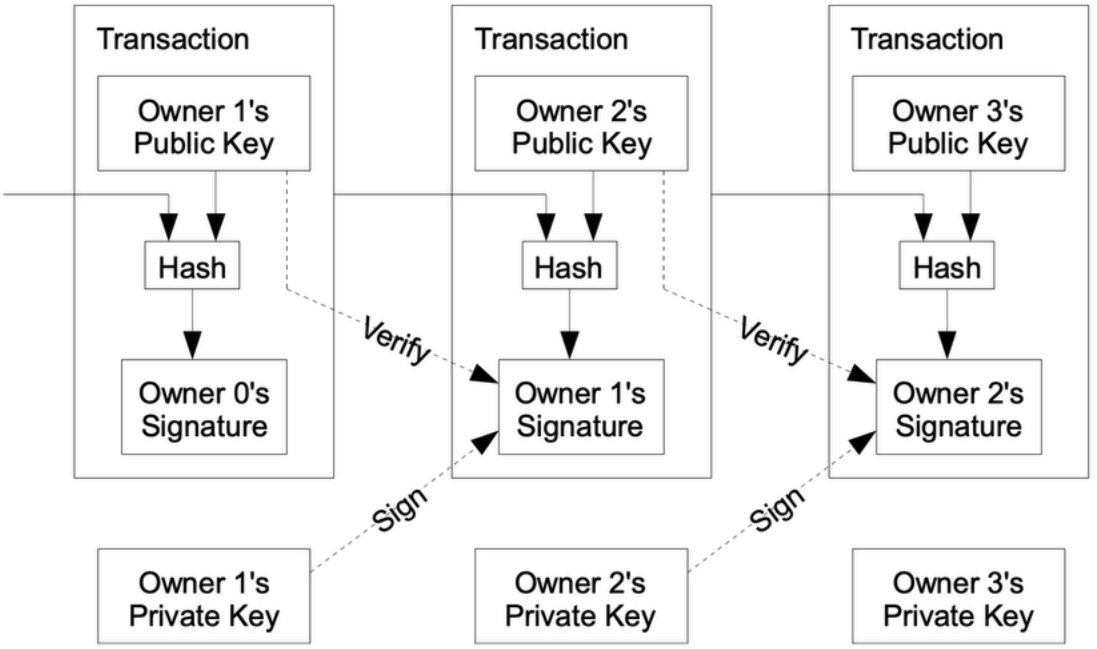
# TRADITIONAL USAGE OF CRYPTOGRAPHY



# HOW DO TRANSACTIONS WORK?

## DEFINING AND TRANSFERRING A COIN

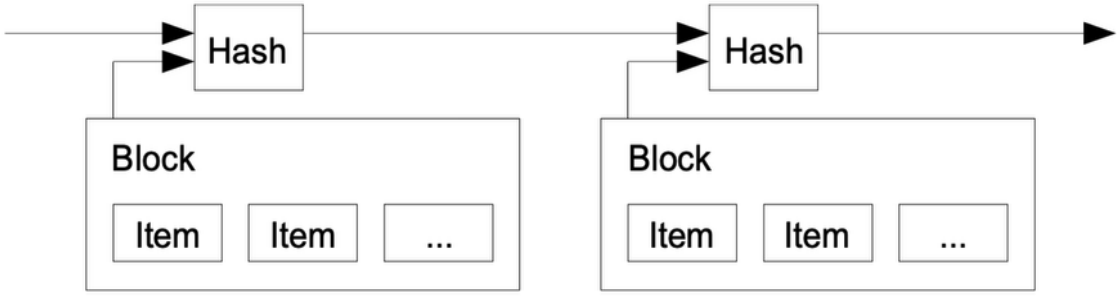
- A ‘coin’ is a series of electronic signatures
- A ‘coin’ is transferred when its owner signs the coin over to another party
- The payee can verify that the ‘coin’ was actually sent by its owner through the use of public key cryptography
- What about the double spend problem?



# PREVENTING DOUBLE SPENDING?

## MAKING DATA IMMUTABLE

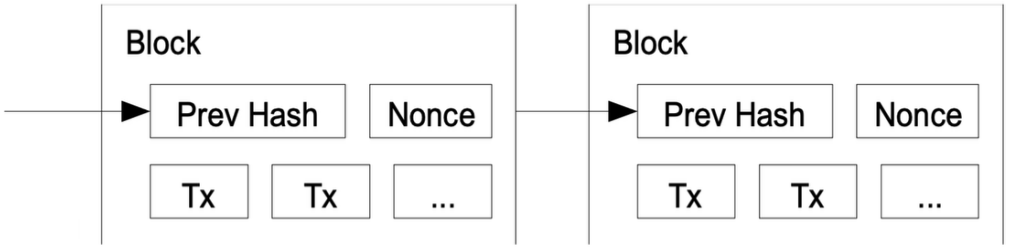
- Transactions are grouped together into blocks
- A timestamp server marks a block of transactions as having existed at the point when the block was created
- The block is locked into place by passing the information about the transactions, time stamp, and previous hash through a hashing algorithm



# WHAT IS PROOF-OF-WORK?

## MAKING CONSENSUS EXPENSIVE

- The list of transactions, blocks, and hashes is distributed to all network participants
- How can we tell which set of information is correct if nodes on the network disagree?
- A proof-of-work system implements a number used once (nonce) to lock data into place



# INCENTIVIZING PROOF-OF-WORK

## REWARDING PARTICIPATION

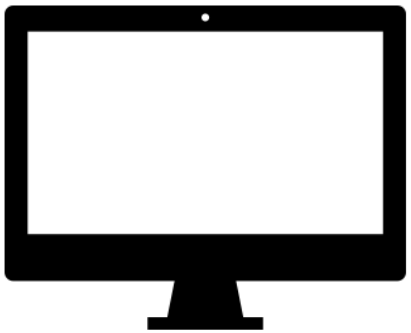
- The first transaction in a block is a special transaction that starts a new coin owned by the creator of the block
- The steady addition of a constant of amount of new coins is analogous to gold miners expending resources to add gold to circulation. In our case, it is CPU time and electricity that is expended.
- The incentive can also be funded with transaction fees.
- Once a predetermined number of coins have entered circulation, the incentive can transition entirely to transaction fees and be completely inflation free.
- The incentive may help encourage nodes to stay honest. If a greedy attacker is able to assemble more CPU power than all the honest nodes, he would have to choose between using it to defraud people by stealing back his payments, or using it to generate new coins. He ought to find it more profitable to play by the rules, such rules that favor him with more new coins than everyone else combined, than to undermine the system and the validity of his own wealth.

# WHAT DOES IT MEAN TO OWN CRYPTOCURRENCY?

OWNERSHIP OF CRYPTOCURRENCY MEANS YOU HAVE CONTROL OVER THE PRIVATE KEYS THAT ARE USED TO TRANSFER CRYPTOCURRENCY TO A NEW OWNER.

# STORING PRIVATE KEYS
## CONTROLLING ACCESS

- Hot Wallets
- Cold Wallets
- Custodial Wallets



# “NOT YOUR KEYS, NOT YOUR COINS”

THE LANDFILL OWNS THE TRASH

# Judge ends man's 11-year quest to dig up landfill and recover $765M in bitcoin

Hard drive that could provide access to 8,000 bitcoins is buried at the dump.

JON BRODKIN – JAN 10, 2025 1:36 PM | 202

Aerial view of a Newport Council landfill site on March 18, 2022 in Newport, Wales. Credit: Getty Images | Matthew Horwood

COMPANIES · COINBASE

# Inside the $400 million Coinbase breach: An Indian call center and teenage hackers

BY BEN WEISS AND JEFF JOHN ROBERTS
May 29, 2025 at 4:29 PM EDT

On May 15, Coinbase revealed that criminals had stolen personal data from tens of thousands of customers—the biggest security incident in the company's history, and one that is poised to cost it as much as $400 million. The breach is notable not only for its scale, but the way the hackers went about it: bribing overseas customer support agents to share confidential customer records.

# HOW DOES CRYPTOCURRENCY COMPARE TO OTHER ASSETS?

- Correlations
- Returns
- Risk
- Performance

# CORRELATIONS

Correlations of less 1.0 provide a diversification benefit.

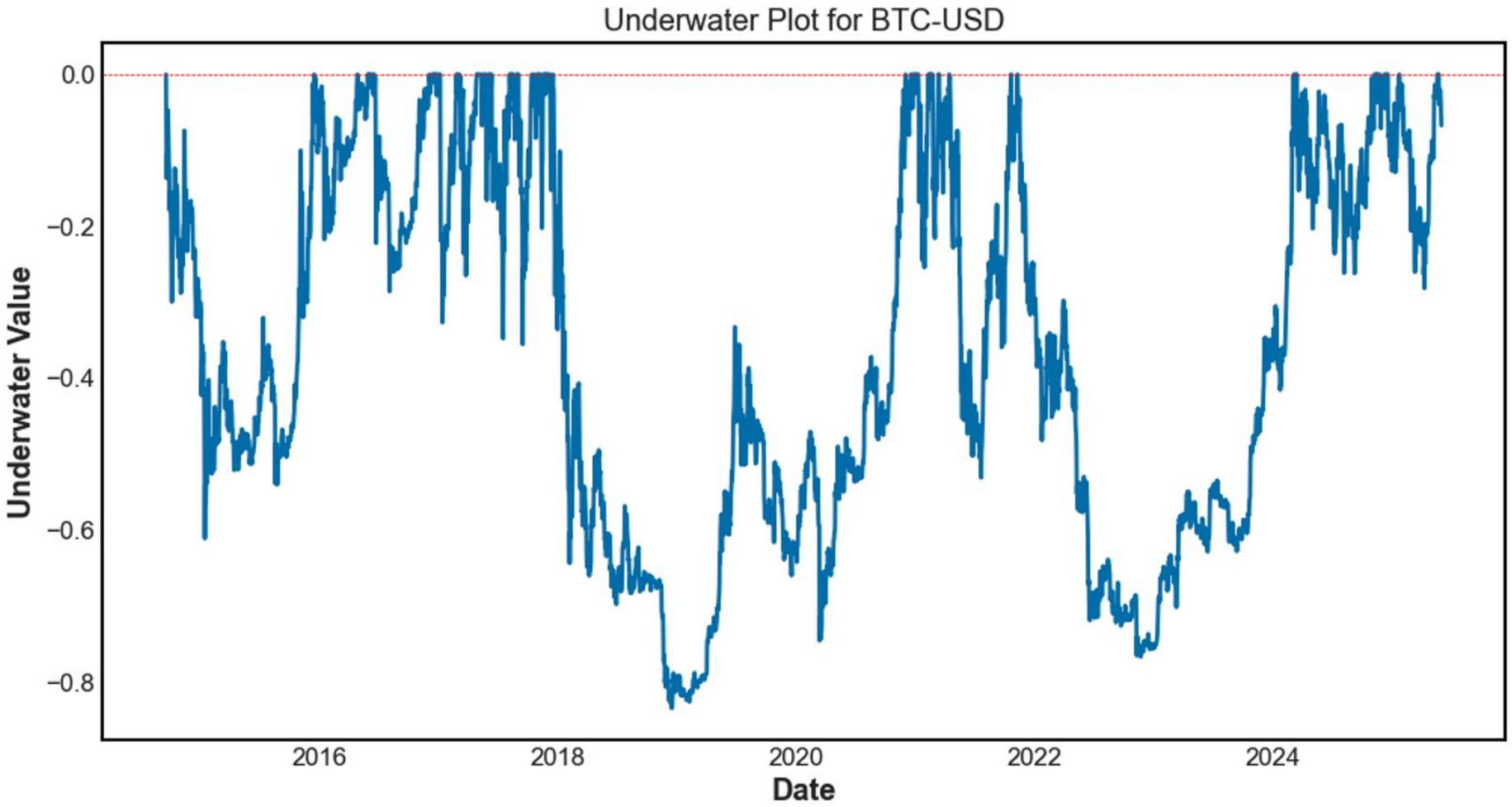
| TICKER | BTC-USD |
|---|---|
| BTC-USD | 1.0000 |
| Small Cap | 0.2300 |
| Mid Cap | 0.2230 |
| Large Cap Value | 0.1819 |
| Large Cap Growth | 0.2391 |
| Int'l Developed | 0.1831 |
| Int'l Emerging | 0.2127 |

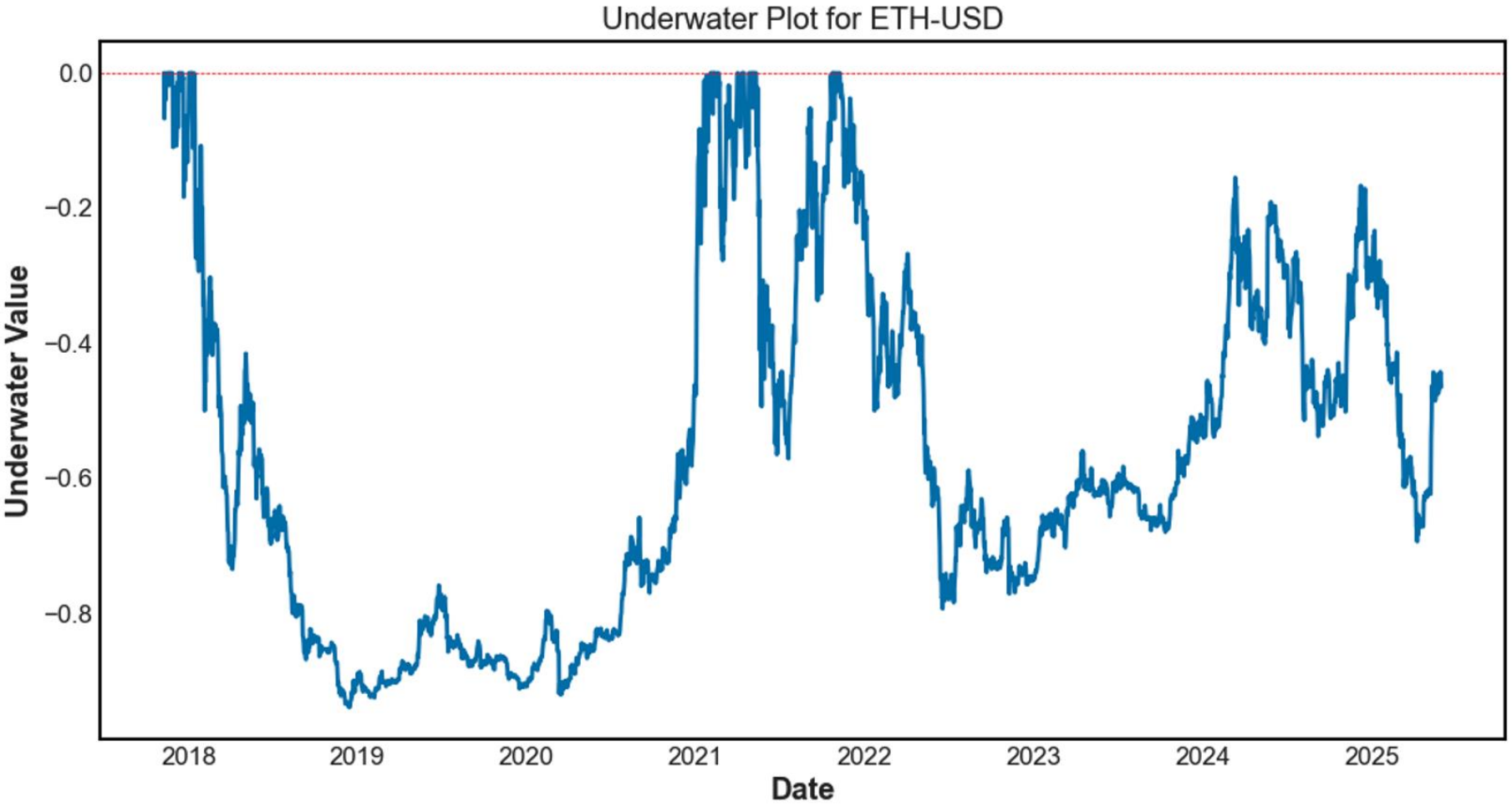
# RETURNS

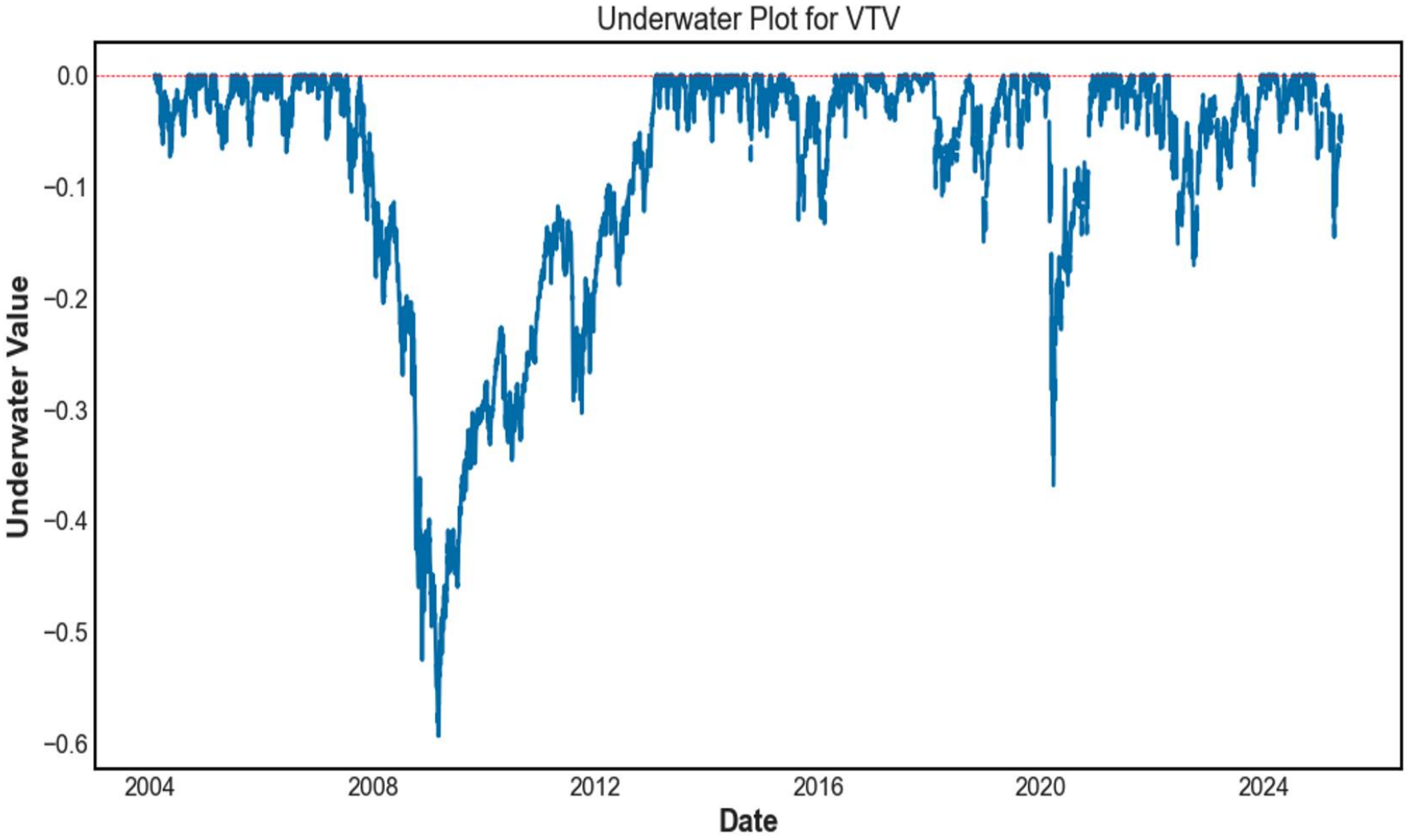
| TICKER | mean | median | std |
|---|---|---|---|
| BTC-USD | 51.39% | 32.61% | 56.94% |
| DASH-USD | 12.79% | 8.25% | 87.33% |
| ETH-USD | 45.60% | 18.96% | 72.47% |
| LTC-USD | 53.25% | 5.73% | 84.47% |
| USDT-USD | 0.10% | -0.23% | 5.89% |
| XEM-USD | 20.27% | 15.96% | 106.91% |
| XLM-USD | 59.02% | -4.73% | 94.47% |
| XMR-USD | 39.04% | 63.34% | 76.35% |
| XRP-USD | 64.88% | -4.81% | 97.41% |
| XVG-USD | 77.25% | -14.54% | 133.49% |

# RETURNS

| TICKER | mean | median | std |
|---|---|---|---|
| **Small Cap** | 11.25% | 27.74% | 22.74% |
| **Mid Cap** | 11.57% | 23.88% | 20.73% |
| **Large Cap Value** | 10.26% | 18.65% | 18.87% |
| **Large Cap Growth** | 13.05% | 23.13% | 20.17% |
| **Int'l Developed** | 9.27% | 22.73% | 26.56% |
| **Int'l Emerging** | 6.25% | 18.21% | 21.84% |


Underwater Plot for BTC-USD
Underwater Value
0.0
−0.2
−0.4
−0.6
−0.8
2016
2018
2020
2022
2024
Date


Underwater Plot for ETH-USD
Underwater Value
0.0
−0.2
−0.4
−0.6
−0.8
2018
2019
2020
2021
2022
2023
2024
2025
Date


Underwater Plot for VTV
Underwater Value
0.0
−0.1
−0.2
−0.3
−0.4
−0.5
−0.6
2004
2008
2012
2016
2020
2024
Date

# RISK

The Capital Asset Pricing Model (CAPM)

Alpha is a measure of the risk adjusted performance of a stock.

Beta is a measure of the market risk a stock is exposed to.

| TICKER | Alpha | Beta |
|---|---|---|
| BTC-USD | 0.191* | 0.800 |
| DASH-USD | -0.106 | 0.988 |
| ETH-USD | 0.040 | 1.260 |
| LTC-USD | 0.110 | 1.012 |
| USDT-USD | -0.006 | -0.028 |
| XEM-USD | 0.035 | 1.129 |
| XLM-USD | 0.139 | 1.167 |
| XMR-USD | -0.040 | 0.982 |
| XRP-USD | 0.253 | 1.087 |
| XVG-USD | 0.124 | 1.372 |

# RISK

The Capital Asset Pricing Model (CAPM)

Alpha is a measure of the risk adjusted performance of a stock.

Beta is a measure of the market risk a stock is exposed to

| TICKER | Alpha | Beta |
|---|---|---|
| **Small Cap** | -0.006 | 1.115 |
| **Mid Cap** | -0.002 | 1.047 |
| **Large Cap Value** | -0.002 | 0.934 |
| **Large Cap Growth** | 0.004 | 1.003 |
| **Int'l Developed** | -0.021* | 0.947 |
| **Int'l Emerging** | -0.015 | 1.116 |

# RISK/RETURN TRADEOFF

The Sharpe Ratio

A measure of risk adjusted performance.

$$SharpeRatio = \frac{R_p - R_f}{\sigma_p}$$

| TICKER | Sharpe |
|---|---|
| BTC-USD | 0.903 |
| DASH-USD | 0.146 |
| ETH-USD | 0.629 |
| LTC-USD | 0.630 |
| USDT-USD | 0.017 |
| XEM-USD | 0.190 |
| XLM-USD | 0.625 |
| XMR-USD | 0.511 |
| XRP-USD | 0.666 |
| XVG-USD | 0.579 |

# RISK/RETURN TRADEOFF

The Sharpe Ratio

A measure of risk adjusted performance.

$$SharpeRatio = \frac{R_p - R_f}{\sigma_p}$$

| TICKER | Sharpe |
|---|---|
| Small Cap | 0.495 |
| Mid Cap | 0.558 |
| Large Cap Value | 0.544 |
| Large Cap Growth | 0.647 |
| Int'l Developed | 0.286 |
| Int'l Emerging | 0.349 |

# CAN YOU VALUE CRYPTOCURRENCY?

**Information for this section was primarily drawn from:**
**Yukun Liu, Aleh Tsyvinski, Risks and Returns of Cryptocurrency, The Review of Financial Studies, Volume 34, Issue 6, June 2021, Pages 2689–2727, https://doi.org/10.1093/rfs/hhaa113**

# VALUING CRYPTOCURRENCY
## WHAT IS THE BEST APPROACH?

- Network effect of cryptocurrency adoption and the price dynamics induced by the positive externality of the network effect.
- Production of coins—the miners' problem—and shows that the evolution of cryptocurrency prices may be linked to the marginal cost of production.
- Tying the movements of cryptocurrency prices to those of traditional asset classes such as fiat money
- Empirical regularities of cryptocurrencies

# CRYPTOCURRENCY INVESTMENT FACTORS

## SYSTEMATICALLY MEASURING VALUATION FACTORS

- Cryptocurrency network factors
- Cryptocurrency production factors
- Cryptocurrency momentum
- Average and negative investor attention
- Cryptocurrency valuation ratios
- Cryptocurrency Exposure to Other Assets

# MEASURING THE NETWORK

## SYSTEMATICALLY MEASURING VALUATION FACTORS

- The number of wallet users
- The number of active addresses
- The number of transaction count
- The number of payment count
- The first principal component of the four primary measures

Results suggest that the network factors that measure the network effect of user adoptions are important drivers of cryptocurrency prices and future network growth.

# CRYPTOCURRENCY PRODUCTION COSTS
## SYSTEMATICALLY MEASURING VALUATION FACTORS

- The average price of electricity in the United States
- The net generation of electricity of all sectors in the United States
- The total electricity consumption of all sectors in the United States
- The average price of electricity in China
- The average price of electricity in Sichuan province
- The first principal component of these primary measures

Results suggest there is little relationship between cryptocurrency price and electricity costs.

# CRYPTOCURRENCY COMPUTING COSTS
## SYSTEMATICALLY MEASURING VALUATION FACTORS

- The prices of Bitmain Antminer, a major piece of Bitcoin mining equipment
- The excess stock returns on semiconductor companies

Results suggest a weak relationship between cryptocurrency price and computing costs.

# CRYPTOCURRENCY MOMENTUM
## SYSTEMATICALLY MEASURING VALUATION FACTORS

- Momentum versus trend
- Regressing returns on a lagged returns

The current coin market returns positively and significantly predict one-week- to five-week-ahead returns.

# CRYPTOCURRENCY INVESTOR ATTENTION
## SYSTEMATICALLY MEASURING VALUATION FACTORS

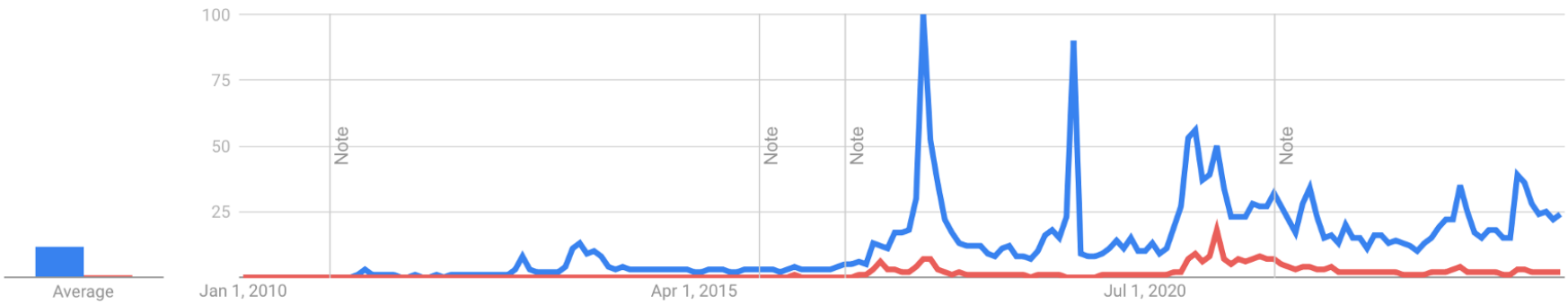
Average and negative investor attention

- Google search data series are downloaded from Google
- Twitter post counts for the word “Bitcoin”

Investor attention is predictive of one-week ahead coin returns.

Bitcoin Ethereum United States, 1/1/10 - 5/30/25

Interest over time



# CRYPTOCURRENCY VALUATION RATIOS

## SYSTEMATICALLY MEASURING VALUATION FACTORS

- The long-term past performance measure: the negative of the past 100-week cumulative coin market return
- The user-to-market ratio
- The address-to-market ratio
- The transaction-to-market ratio
- The payment-to-market ratio

Fundamental-to-value ratios are not predictive of future cryptocurrency returns.

# CRYPTOCURRENCY EXPOSURE TO TRADITIONAL ASSETS
## SYSTEMATICALLY MEASURING VALUATION FACTORS

- Currencies
- Commodities
- Stocks and stock factors
- Macroeconomic factors

- The exposures of cryptocurrencies to these traditional assets are low
- There is little evidence, in the view of the markets, behind the narrative that there are similarities between cryptocurrencies and these traditional assets.

# HOW DOES CRYPTOCURRENCY FIT IN A WELL-DIVERSIFIED PORTFOLIO?

# DIVERSIFICATION

Considering just the last 10 years only, how would your results improve if you held some cryptocurrency in the portfolio?

| TICKER | Sharpe |
|---|---|
| S&P 500 | 0.748 |
| BTC-USD | 0.909 |
| DASH-USD | 0.691 |
| ETH-USD | 0.782 |
| LTC-USD | 0.867 |
| USDT-USD | 0.694 |
| XEM-USD | 0.192 |
| XLM-USD | 0.624 |
| XMR-USD | 0.512 |
| XRP-USD | 0.665 |
| XVG-USD | 0.577 |

# CONCLUSIONS

# MAIN TAKE AWAYS

- Take time to understand how cryptocurrencies work
- Be careful how you own cryptocurrency
- Cryptocurrencies can offer higher returns, but carry similarly high risk
- Valuing cryptocurrency is challenging
- Adding cryptocurrency to a well diversified portfolio may improve performance

The philosophy remains the same…

**UNDERSTAND YOUR ABILITY TO AND DESIRE TO BEAR RISK AND YOUR OWN FINANCIAL GOALS AND INVEST ACCORDINGLY.**

# APPENDIX:
# OTHER BLOCKCHAIN RELATED TECHNOLOGIES

# OVERVIEW

## KEY CHARACTERISTICS

- Blockchain
- Cryptocurrency/Stablecoins
- Smart Contracts
- Oracles
- Transactions
- Fungible Tokens
- Non-Fungible Tokens

# BLOCKCHAIN
## FUNDAMENTAL BACKBONE

- A method of locking information in place
- Chaining information together so that it can be verified for accuracy
- Achieves consensus between parties
- Is a trustless system
- Proof of Work
- Proof of Stake

# CRYPTOCURRENCIES AND STABLECOINS

## TYPICAL APPLICATION

- Cryptocurrencies
  - By far the most popular application of blockchain technology
  - Function almost exclusively as a payment network
- Stablecoins
  - A particular variety of cryptocurrency designed to reduce volatility
  - To achieve this stables coins utilize three typical methods
    - Fiat-collateralized - maintains a reserve of fiat currency
    - Crypto-collateralized - maintains a reserve of some other cryptocurrency
    - Non-collateralized - maintain price stability by minting and burning coins

# SMART CONTRACTS
## CODIFYING AGREEMENTS

- Blockchains can carry arbitrary information
- This information can be structured to contain instructions
- This forms the basis of smart contracts
- When conditions specified in the instructions are met then certain actions can be automatically performed by the computing power behind the blockchain and smart contract
- Smart contracts can be applied in many areas including finance, gaming, data stewardship, and supply chain management
- Imagine a blockchain that is designed to track inventory as it flows through the supply chain, a smart contract could be built that would trigger payment once items are delivered to their final destination

# ORACLES

## CONNECTING THE REAL WORLD TO THE BLOCKCHAIN

- Blockchains know and can verify only what is happening within their protocols
- The blockchain does not know what the level of any given stock is, the outcome of a sporting event, or the status of inventory in transit
- This is known as the Oracle Problem
- The current solutions rely on centralized sources of information or taking consensus from a diverse group of data providers

# FUNGIBLE TOKENS

## LIMITED SUPPLY OF INTERCHANGEABLE TOKENS

- Fungible tokens are the core of any cryptocurrency
- Being fungible means that one item is interchangeable and indistinguishable from another
- Blockchains can accommodate different types of fungible tokens
  - Equity tokens correspond to ownership of an asset pool
  - Utility tokens are versatile tokens that can be set up to pay for transaction costs, incentivize developer and miner activity, establish reputation, and more
  - Governance tokens represent the ability to vote on the direction or actions taken by a particular blockchain or protocol

# GOVERNANCE TOKENS CONTINUED

## DECENTRALIZED AUTONOMOUS ORGANIZATIONS (DAOS)

- DAOs are the main implementation of governance tokens
- These organizations are structured so that governance token owners vote on proposals in the same way that shareholders might vote on corporate actions
- There is much legal and regulatory work that needs to be done in terms of understanding what, if any, traditional legal protections or liabilities attach themselves to these organizations
- Wyoming has signed a law that treats DAOs as LLCs, but few other states have codified similar rules

# THE REVERSE ORACLE PROBLEM

## GETTING INSTRUCTIONS FROM THE BLOCKCHAIN TO THE REAL WORLD

- What happens when governance token owners vote on an action on the blockchain that pertains to real assets?
- What mechanism can force those involved with the DAO to translate that vote into the real world?

# MAKER DAO

## MKR AND DAI

- Maker DAO was one of the pioneers in the DAO space
- Founded in 2015, Maker DAO produces smart contracts and other tools for financial transactions built on the Ethereum Blockchain
- Specifically, their governance token is MKR
- Holders of MKR vote on changes to the way Maker DAO's protocols work

# NON-FUNGIBLE TOKENS

## LIMITED SUPPLY OF UNIQUE TOKENS

- Non-fungible tokens (NFTs) are unique and cannot be interchanged with other tokens of the same protocol without leaving the token holders in different standing
- NFTs are accounted for by the unique identifying ID of each token, rather than being able to add up all tokens and arrive at some account balance
- A single NFT might correspond to ownership of a painting, whereas, another NFT on the same blockchain might correspond to ownership of a photograph
- Exchanging these two tokens would necessarily leave their owners in a different state after the exchange

# USE CASES FOR NON-FUNGIBLE TOKENS

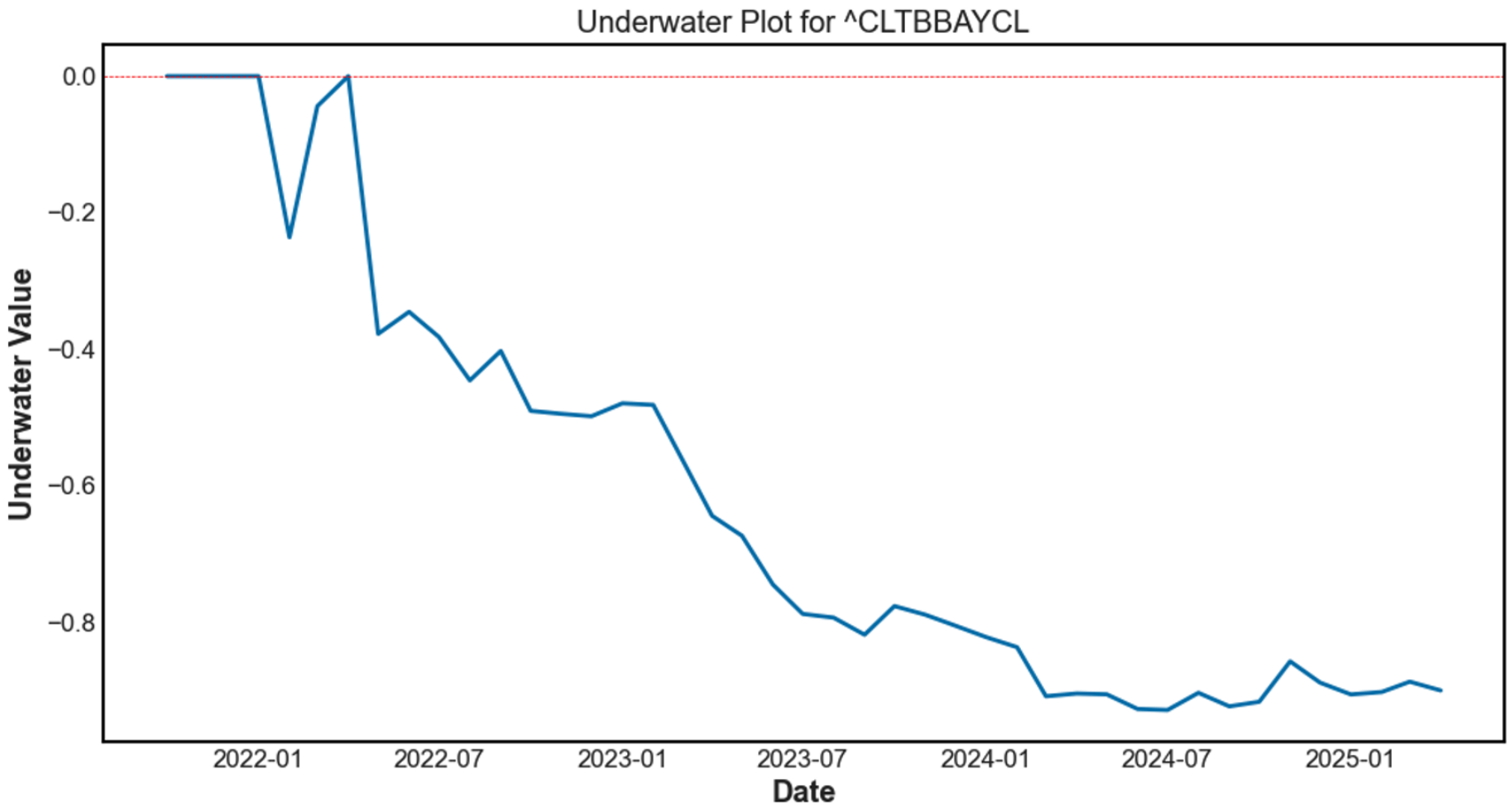
## LIMITED SUPPLY OF UNIQUE TOKENS

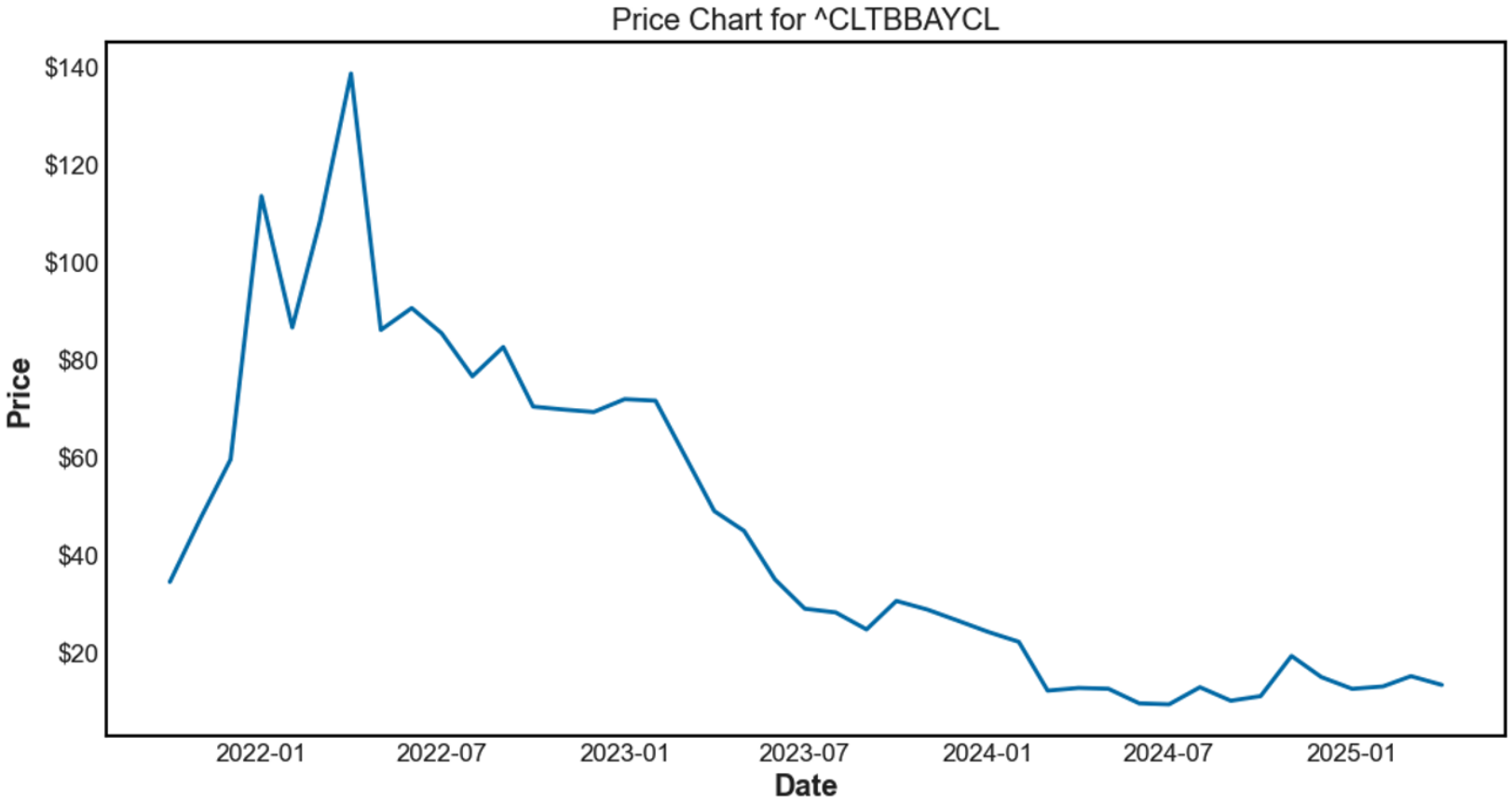
- NFTs can be paired with unique physical items, such as art
- NFTs can be used to signify ownership of digital assets
  - Ownership in this case generally means that the owner of the NFT can assert that they have the rights to the digital asset, although legal frameworks are still being finalized around the world
  - Subsequent sales of NFTs can trigger payments to the original artist, although this is facilitated by the exchanges
  - The art itself is generally not immutable

# BORED APE

## BRINGING NFTS TO THE PUBLIC CONSCIOUSNESS

- Bored Ape Yacht Club launched ape themed artwork that could be purchased using and NFT
- Specimens achieving sale or resale values as high as $2.9 million


Underwater Plot for ^CLTBBAYCL
Underwater Value
0.0
−0.2
−0.4
−0.6
−0.8
2022-01
2022-07
2023-01
2023-07
2024-01
2024-07
2025-01
Date


Price Chart for ^CLTBBAYCL
$140
$120
$100
$80
$60
$40
$20
Price
2022-01
2022-07
2023-01
2023-07
2024-01
2024-07
2025-01
Date

# DIVERSIFICATION IN THE AGE OF THE MAGNIFICENT SEVEN

DEON STRICKLAND, PH.D.

# TOPICS COVERED

- Diversification
- Concentration evidence
- Industry concentration
- Concentration affects on ....
  - Return sensitivity
  - Volatility
  - Interest Rate Sensitivity
- How to reduce concentration?

# RECENT ARTICLES

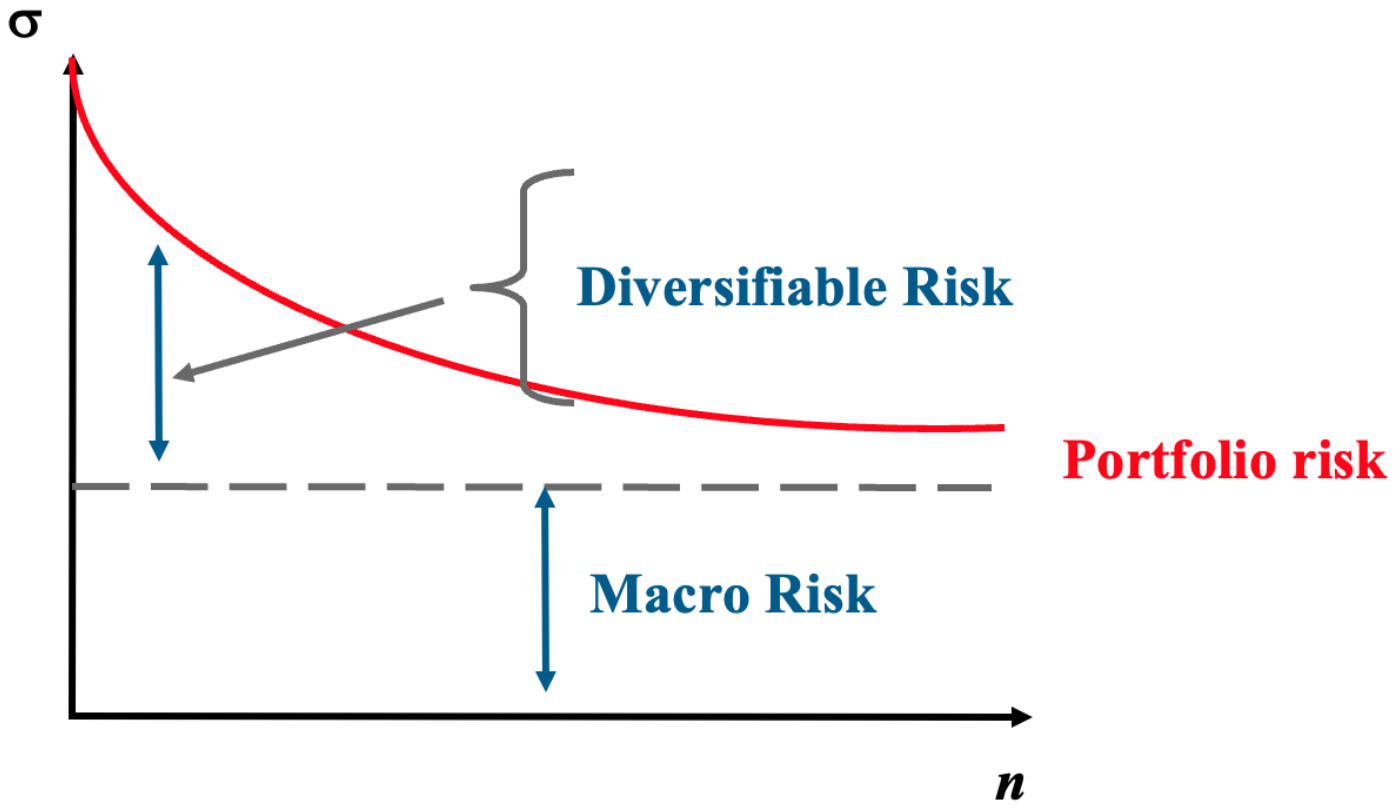
"The S&P 500 Isn't as Diverse as IT Used to Be.  Here's Why That Matters." – WSJ July 3, 2024

"How Does This Year's Market Concentration Compare to Recent Highs?" – WSJ June 11, 2024

"3 Diversification Strategies to Avoid S&P 500 Concentrations Risks" – Forbes June 14, 2024

"How Nvidia Became the Market's Most Important Stock, in Charts" – WSJ September 6, 2024

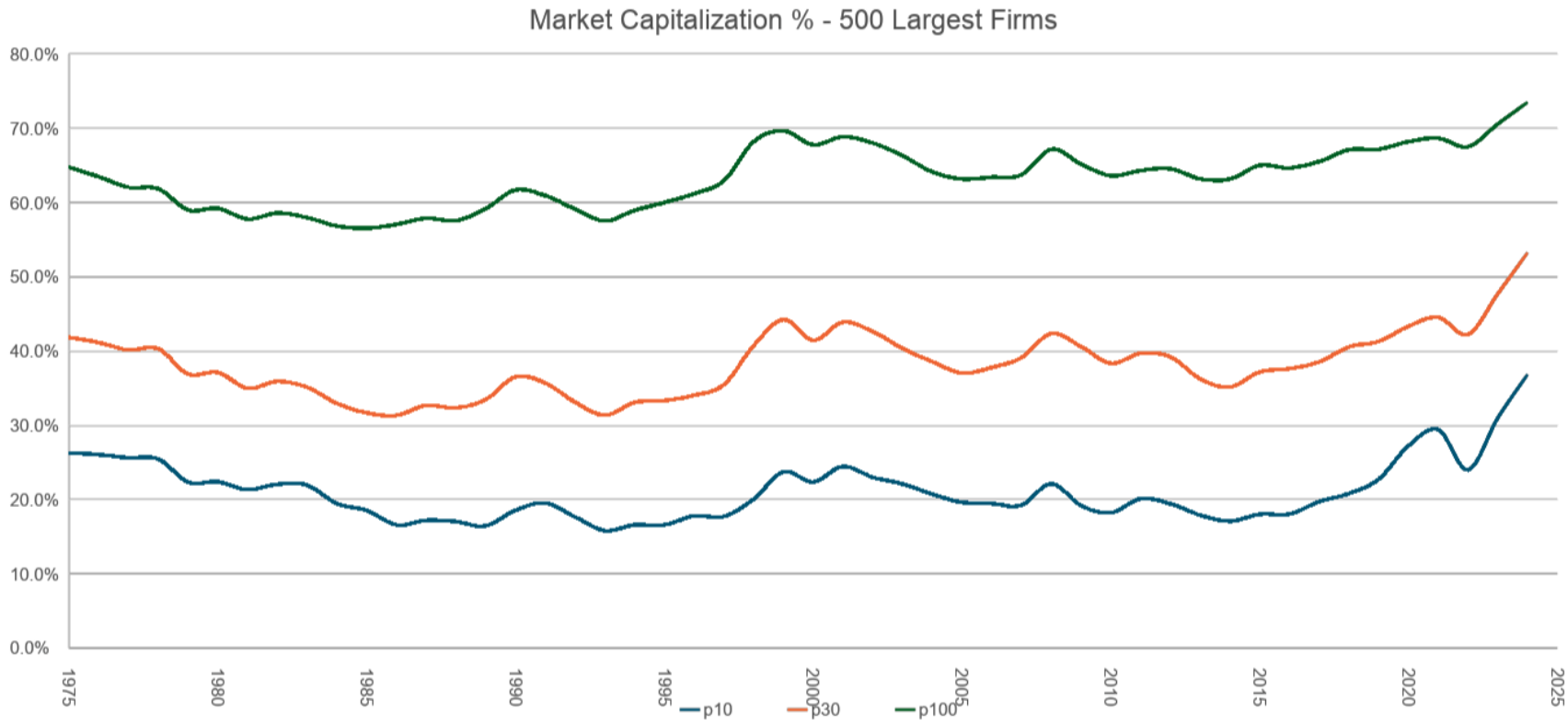
# DIVERSIFICATION - SOME BACKGROUND



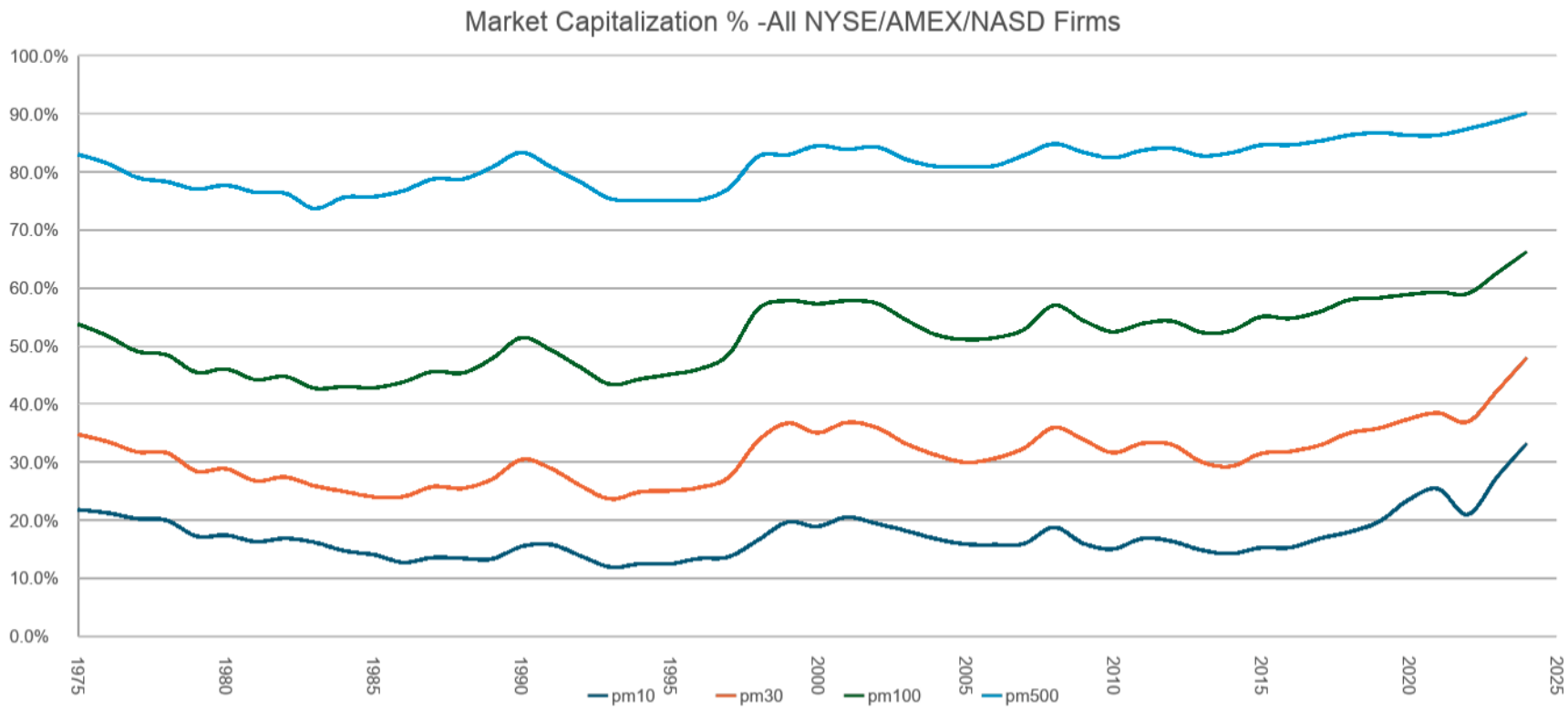
# DIVERSIFICATION – AN ASIDE

- Greater risk ⟹ Greater return, but
- Diversifiable risk does not count

# STOCK MARKET CONCENTRATION



# STOCK MARKET CONCENTRATION

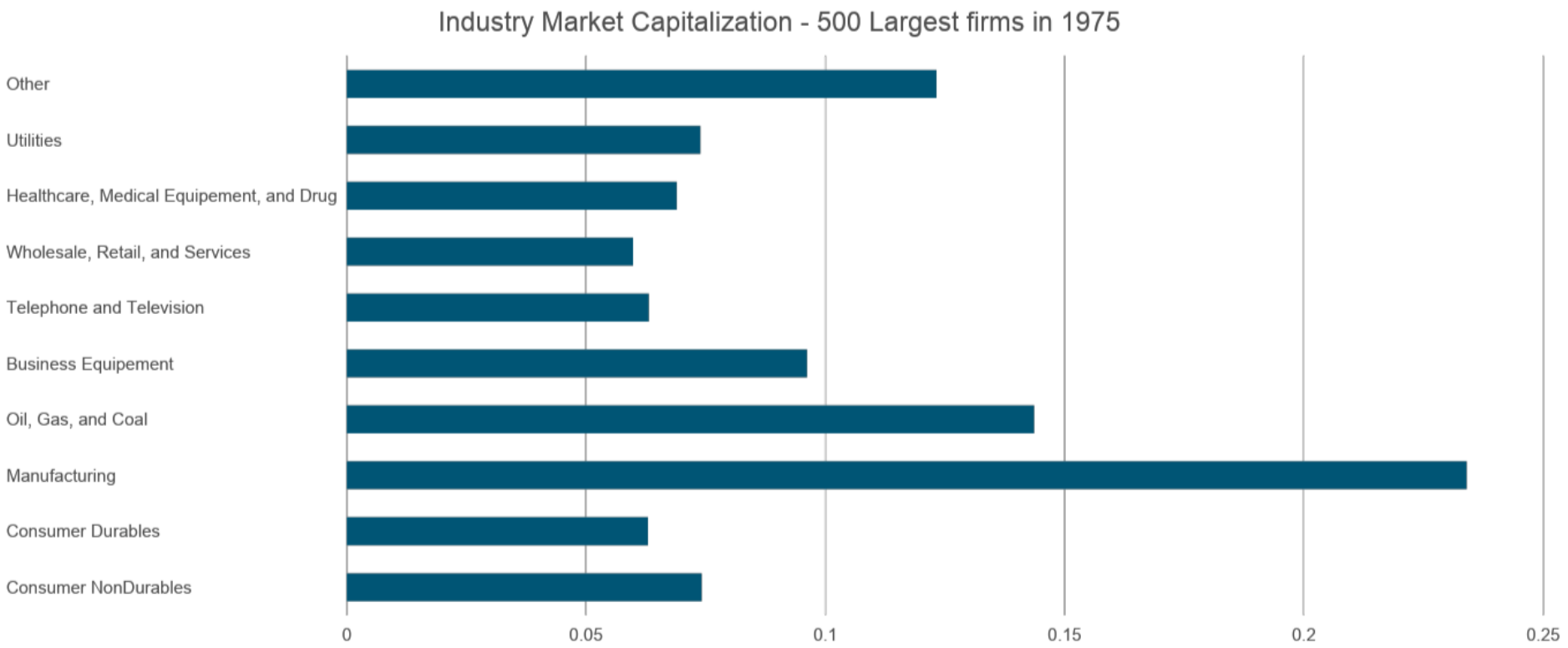


# STOCK MARKET CONCENTRATION-TABLE

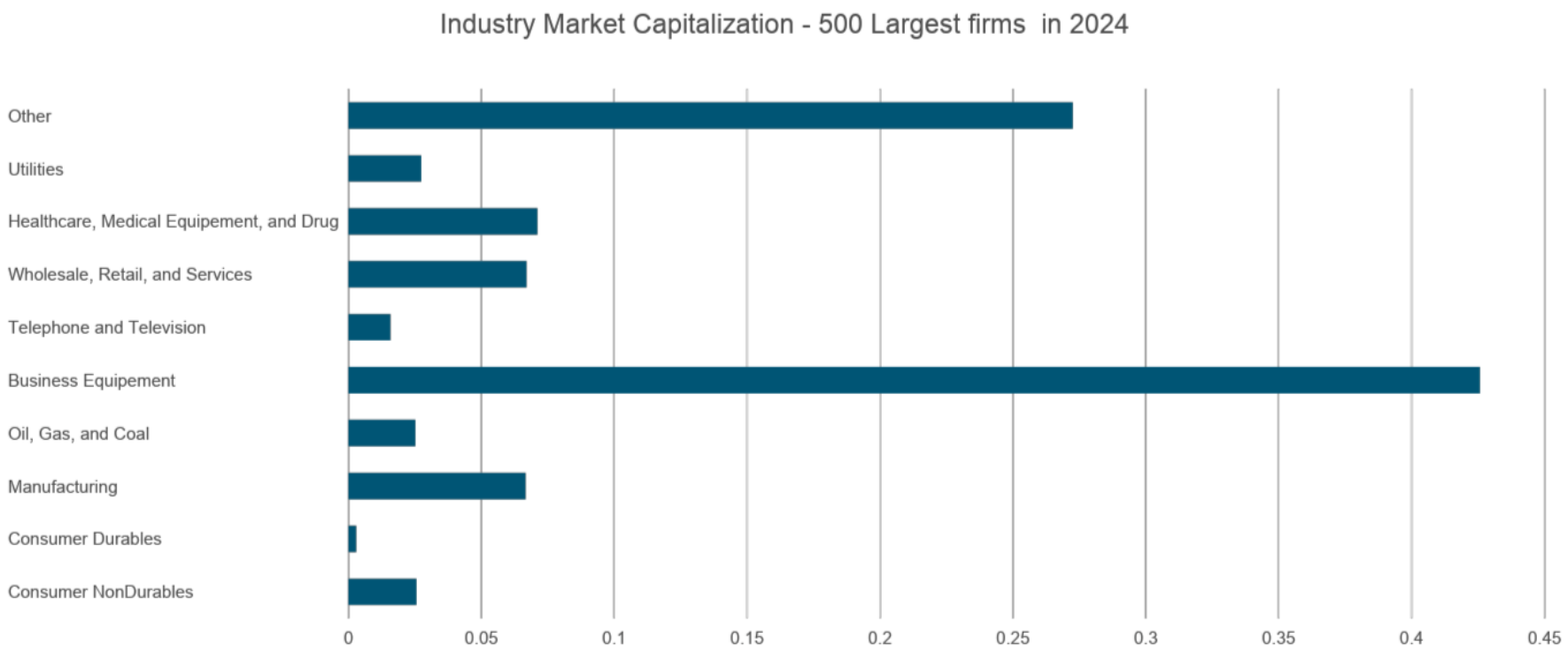
| Panel A : 500 Largest Firms | | | | |
|---|---|---|---|---|
| # of firms | Mean | Minimum | Maximum | Interquartile |
| 10 | 21.1% | 15.8% | 36.9% | 4.6% |
| 30 | 38.3% | 31.4% | 53.3% | 5.9% |
| 100 | 63.3% | 56.6% | 73.5% | 7.7% |

| Panel B: All NYSE/AMEX/NASD Firms | | | | |
|---|---|---|---|---|
| # of firms | Mean | Minimum | Maximum | Interquartile |
| 10 | 17.3% | 11.9% | 33.2% | 4.5% |
| 30 | 31.3% | 23.7% | 48.0% | 7.4% |
| 100 | 51.7% | 42.7% | 66.3% | 10.3% |
| 500 | 81.4% | 73.7% | 90.2% | 6.4% |

# INDUSTRY CONCENTRATION



# INDUSTRY CONCENTRATION



# DO WE CARE?

We typically assume that no small group of names in the S&P 500 is sufficiently important to overall portfolio returns or portfolio volatility. If this assumption is violated, we could have returns more dependent on a narrow constituent slice and/or increased volatility.

- 76% 2024 S&P 500 (January-June) returns were driven by 10 largest stocks. (WSJ- 2024)
- Higher concentration is associated with higher volatility – Goldman Sachs 2024 Equity Report
- Higher concentration is associated with positive interest rate sensitivity

# POSSIBLE SOLUTIONS

1. Equally-weighted S&P 500
2. Increase Small Cap Exposure
3. Increase International Exposure
4. ETF exposure management (VUG/VTV)

# SOLUTION ISSUES (1-3)

- Moving from a value-weighted portfolio to an equally-weighted or increasing small cap exposure increases portfolio risk and risk decoupling your portfolio exposure from the larger economy.

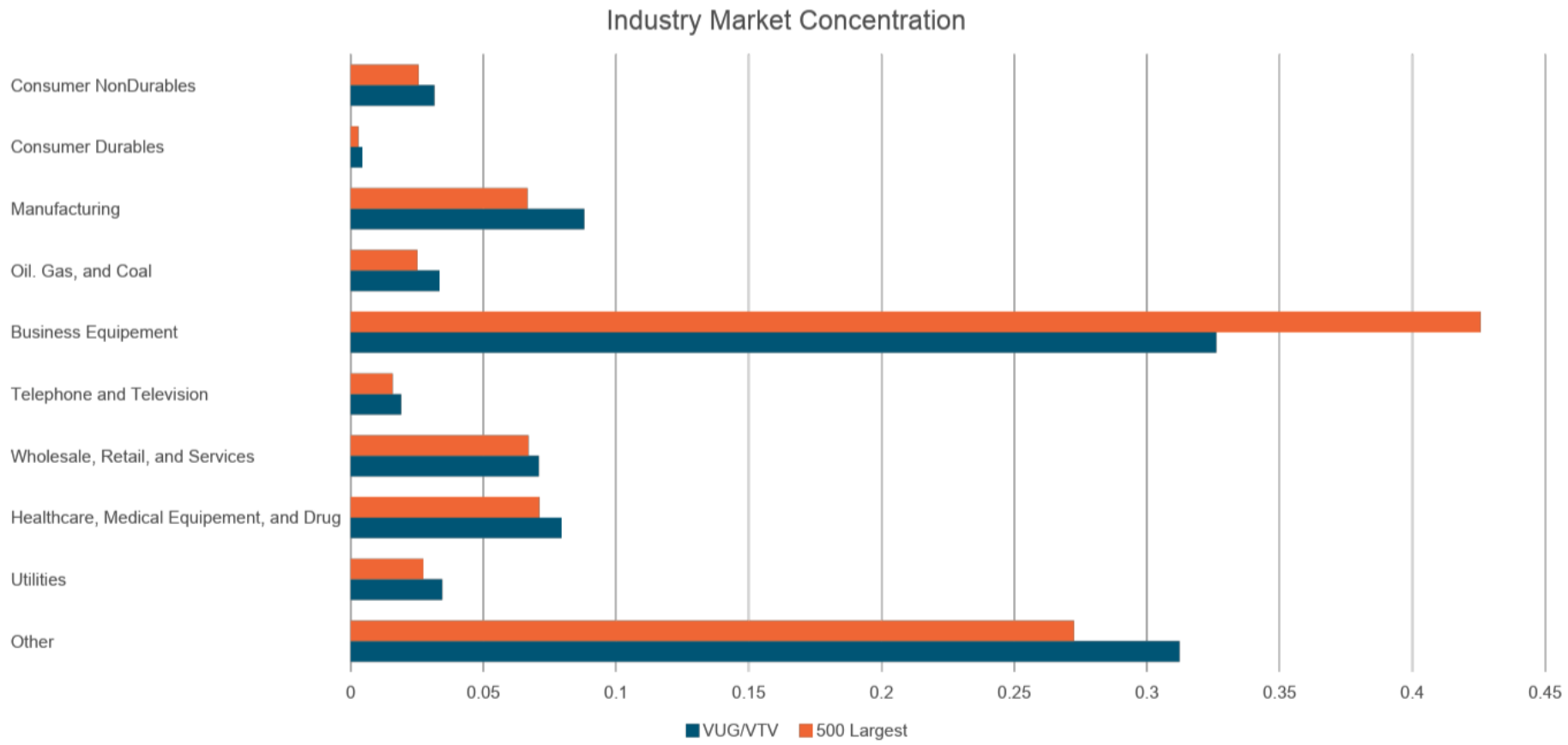
- The conventional wisdom does support adding international exposure to our portfolios but the weight in VXUS for example to sharply reduce concentration would be 1) be large 2) the EU and Japanese economies have exhibited significant underperformance.

- 4 – maybe Goldilocks?

# STOCK MARKET CONCENTRATION- 500 VS VUG/VTV

| | 500 Largest Firms | | VUG/VTV (40%/60%) | |
|---|---|---|---|---|
| # of firms | Concentration | % Growth | Concentration | % Growth |
| 10 | 36.9 | 100.0 | 26.3 | 85.9 |
| 30 | 53.3 | 77.6 | 43.6 | 63.6 |

# INDUSTRY CONCENTRATION



# CONCLUSION

- Goldilocks? Choosing asymmetric weights in a Growth and Value ETF can lead too …

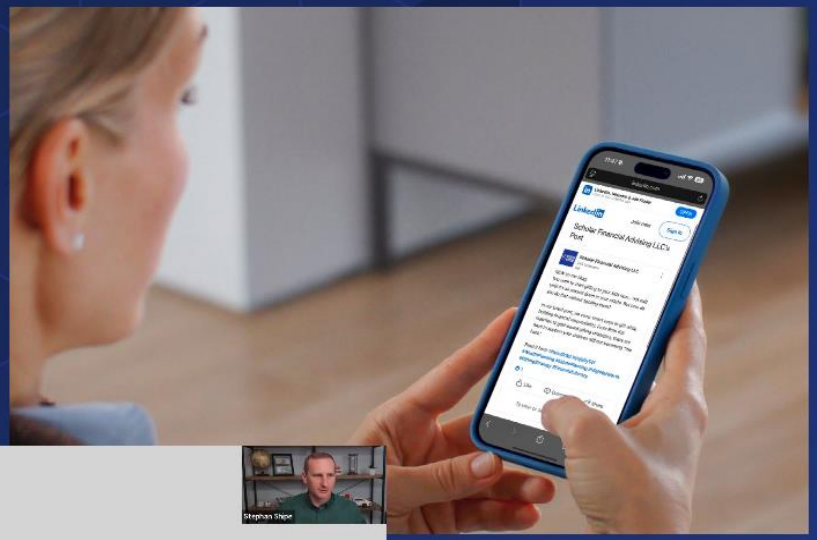
1. Lower Concentration

2. Reduced Growth exposure

3. Greater Industry Diversification

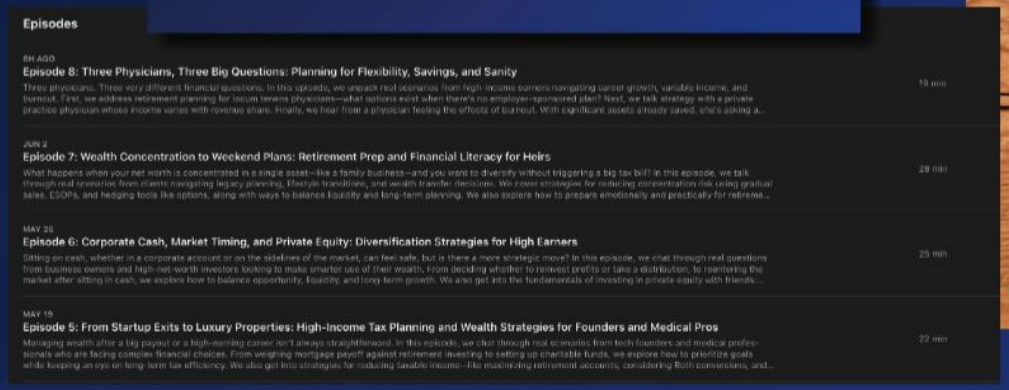
## ENHANCING OUR OFFERINGS TO

# EDUCATE, EMPOWER, & ENCOURAGE


SCHOLAR ADVISING

# THE SCHOLAR ADVISING PODCAST



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