Protecting Your Equity Portfolio During Recessions

CEU Program

FPPTA Winter Trustee School January 29, 2024

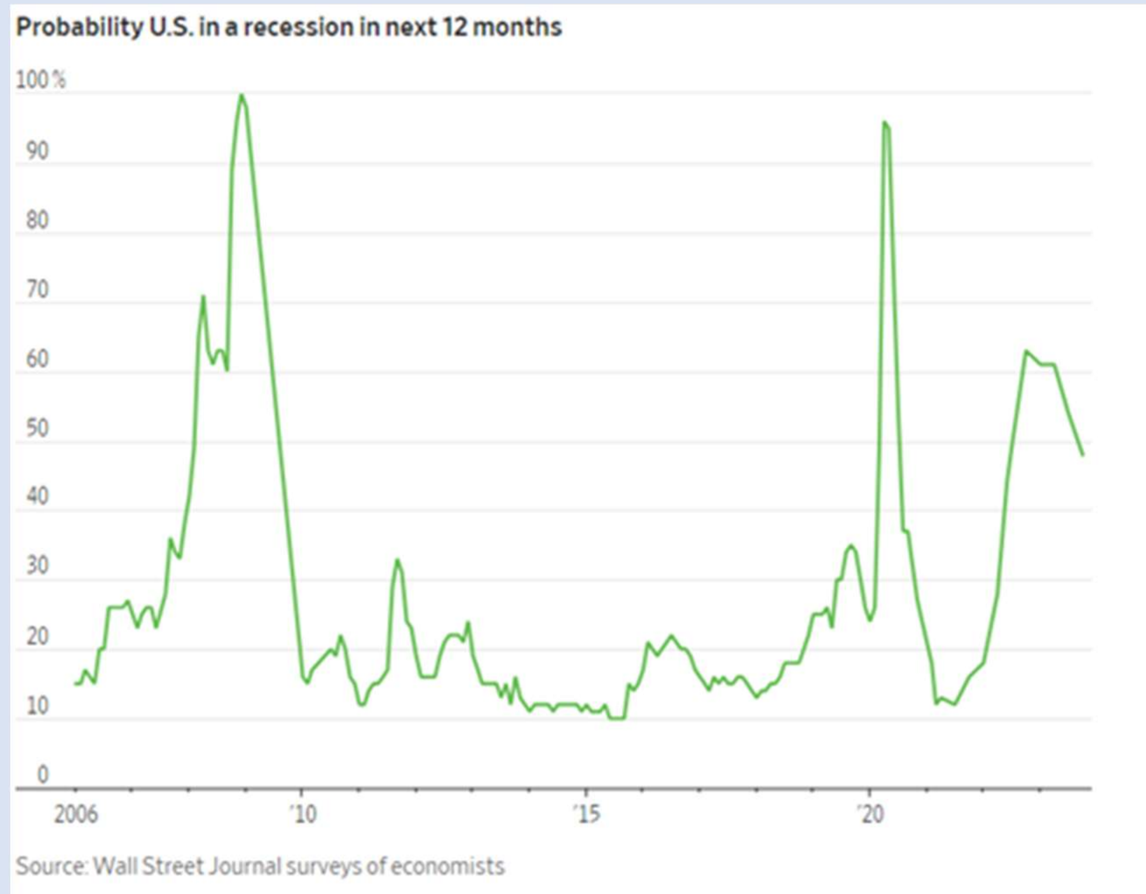
Geoffrey Gerber, Ph.D.

TWIN Capital Management, Inc.
President & Chief Investment Officer

Outline

- Recession Forecasts
  - Were certainly not accurate in 2023
  - What went wrong with the forecast for 2023 recession?
  - Will there be a recession in 2024?
- Protecting Your Equity Portfolio in Recessions is Critical Due to the Cost of Risk
  - The bigger an investment loss, the more gain required just to get you back to even
  - The largest equity declines have occurred during recessions with much greater risk
- Investment Manager Implementation Approaches Impact Pension Fund Risk – More Choices than Just Active or Passive
- Enhanced Index and Low Volatility Strategies can Provide Downside Protection While Maintaining Equity Exposure

Recession Projections of Economists Were Very Wrong for 2023



According to a Wall Street Journal article on January 2, 2023, more than two-thirds of economists at 23 major financial institutions called for a recession and economic downturn in 2023.

Fortunately, for U.S. equity long-only investors, they were very wrong.

What Went Wrong for these Recession Forecasts in 2023?

- Investors who expected a recession in 2023 were surprised that the bruising pace of interest-rate increases did not dramatically impact spending behavior
- Consumers opened their wallets for everything from Taylor Swift tickets to airline flights and restaurants
- The unemployment rate fell to 3.4%, the lowest level since 1969
- Profits started growing again at the biggest U.S. companies after three quarters of declines.

Will there be a Recession in 2024?

- Based on previous economic downturns, it is premature to declare the Fed has pulled off a soft landing
- In the past 11 Fed rate-hiking cycles, recessions have typically started about two years after the central bank began raising interest rates as it takes time for rate increases to ripple through the economy
- The current hiking cycle started in March 2022, so some economists are still calling for a slowdown or recession in 2024

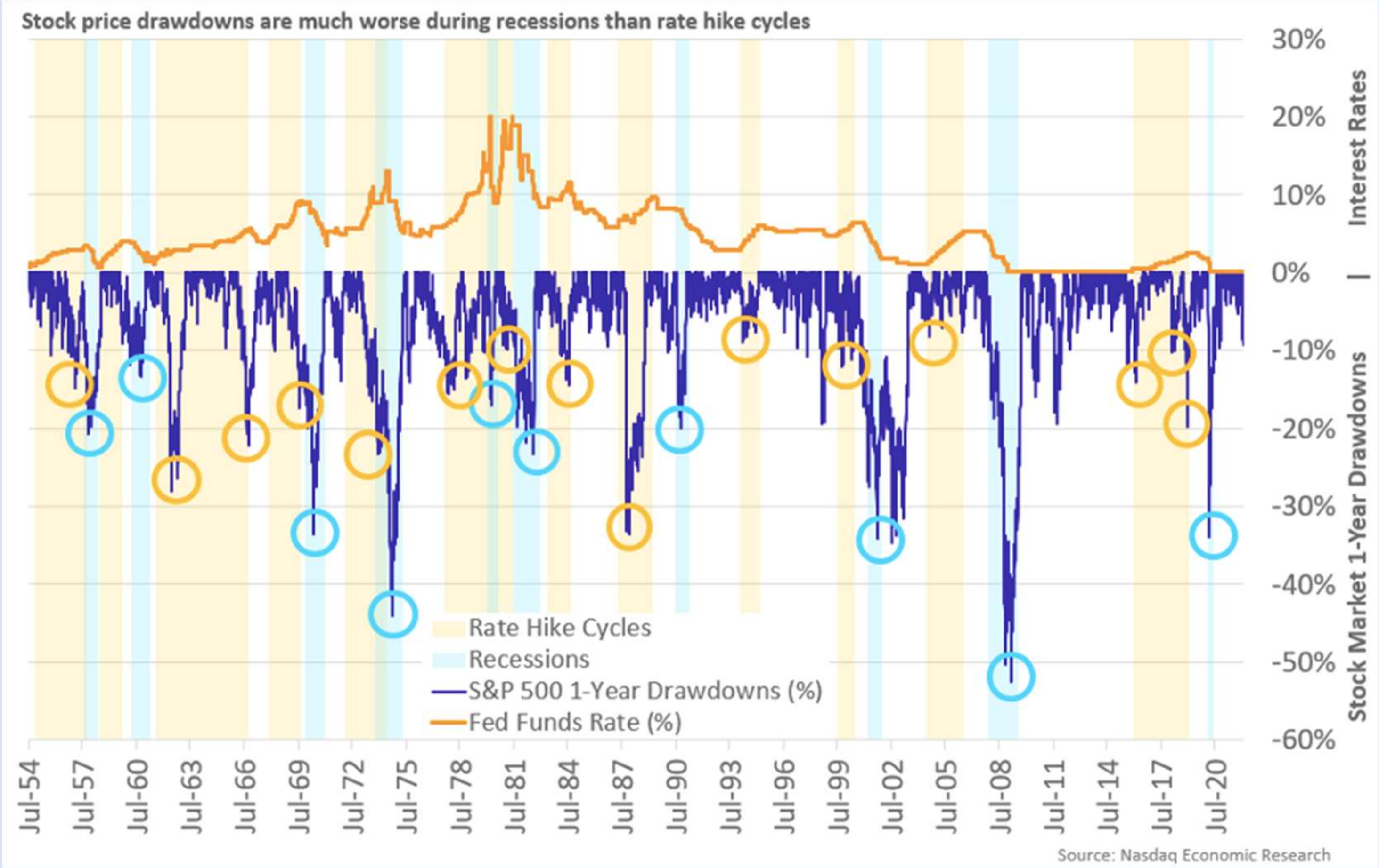
Will there be a Recession in 2024 ?

- However, these naysayers are in the minority, as about two-thirds of investors recently polled by Bank of America are expecting a soft landing, a sharp about-face from their forecasts one-year ago
- Based on recent consensus forecast inaccuracy, investors' extreme optimism about the economy and markets in 2024 is a cause of concern in and of itself
- The consensus forecast of a likely recession in 2023 was way off – will the consensus of no recession in 2024 be accurate?

Protecting Your Equity Portfolio in Recessions

- Whether there will be a recession in 2024 or not, one thing is clear – eventually there will be a recession
- Equities behave differently during economic expansions and economic recessions
- Understanding how you can protect your equity portfolio during recessions is key given the asymmetric payoff of investment returns – losing is more costly than winning so protecting against big equity declines becomes critical

Rate Hike Cycles Typically Lead to Recessions and Recessions are Bad for the Stock Market



Investment Terms

- **Annualized Risk**: The variation of a portfolio's returns around its average return over an annual basis (measured by standard deviation).
- **Value-Added**: The difference between the manager's annualized return and the benchmark's (S&P 500) annualized return.
- **Alpha**: Is a risk-adjusted measure of Value-Added
- **Tracking Error or Active Risk**: The annualized standard deviation of value-added, it measures the variation of a portfolio's returns relative to the benchmark. Managers with larger active bets tend to have return streams exhibiting higher tracking error.
  - **A manager with a 5% tracking error can be expected to produce positive & negative value-added in excess of 5% in 1 out of every 3 years**.

Risk Does Matter

The Mathematics of Compounding

It's Tougher to Get It Back

If You Lose	Then You Need
10%	11%
20%	25%
55%	122%
75%	300%
Of an investment …	To get back to where you started

Actual peak to trough decline in S&P 500 during 2008 bear market. (→ 55%)

The return to an investment is Asymmetric as losses have greater impact than gains - the more you lose, you more you must earn to get back your initial investment

Why Does Risk Matter?

A Simple Example

Two investment programs produce the same annual average return but with different levels of risk

Year	Investment A Annual Return	Investment B Annual Return
1	-6.0	-20.0
2	12.0	16.0
3	10.0	12.0
4	-7.0	-22.0
5	14.0	20.0
6	15.0	22.0
7	8.0	8.0
8	13.0	18.0
9	18.0	28.0
10	3.0	-2.0
11	10.0	12.0
12	6.0	4.0
13	-12.0	-32.0
14	18.0	28.0
15	-10.0	-28.0
16	21.0	34.0
17	23.0	38.0
18	7.0	6.0
19	5.0	2.0
20	12.0	16.0

Average Annual Return is 8% for both Investments (A and B). The Standard Deviation of B (20%) is twice the volatility of A (10%).

While the average annual return is the same for the two investments, the annualized (or geometric) return is quite different.

Volatility Matters Because It Reduces Wealth

	Investment A	Investment B	Investment C
Average Annual Return	8.0%	8.0%	7.0%
Standard Deviation of Annual Returns	10.1%	20.1%	10.1%
Annualized (Geometric Average) Return	7.5%	6.0%	6.5%
Value of Initial $1,000,000 at End of 20 Years	$ 4,273,985	$ 3,212,138	$ 3,542,465

While the Average Annual Return is lower for Investment C compared to B, the Annualized Return is actually greater than Investment B's due to Investment C's lower standard deviation.

Relationship between Risk and Return

Geometric Annualized Return = Average Annual Return – ½ (Standard Deviation of Return)^2

Investment A: $0.075 = 0.08 - \frac{1}{2}(.1)^2$

Investment B: $0.06 = 0.08 - \frac{1}{2}(.2)^2$

Investment C: $0.065 = 0.07 - \frac{1}{2}(.1)^2$

Less Annual Standard Deviation Means Higher Geometric or Compounded Annual Return and Ending Wealth Level

Worst & Second Best 12-Month Performance Highlights Negative Returns Impact

12-Month	S&P 500
Worst Mar 2008 - Feb 2009	-43.32
2nd Best Mar 2009 - Feb 2010	53.62

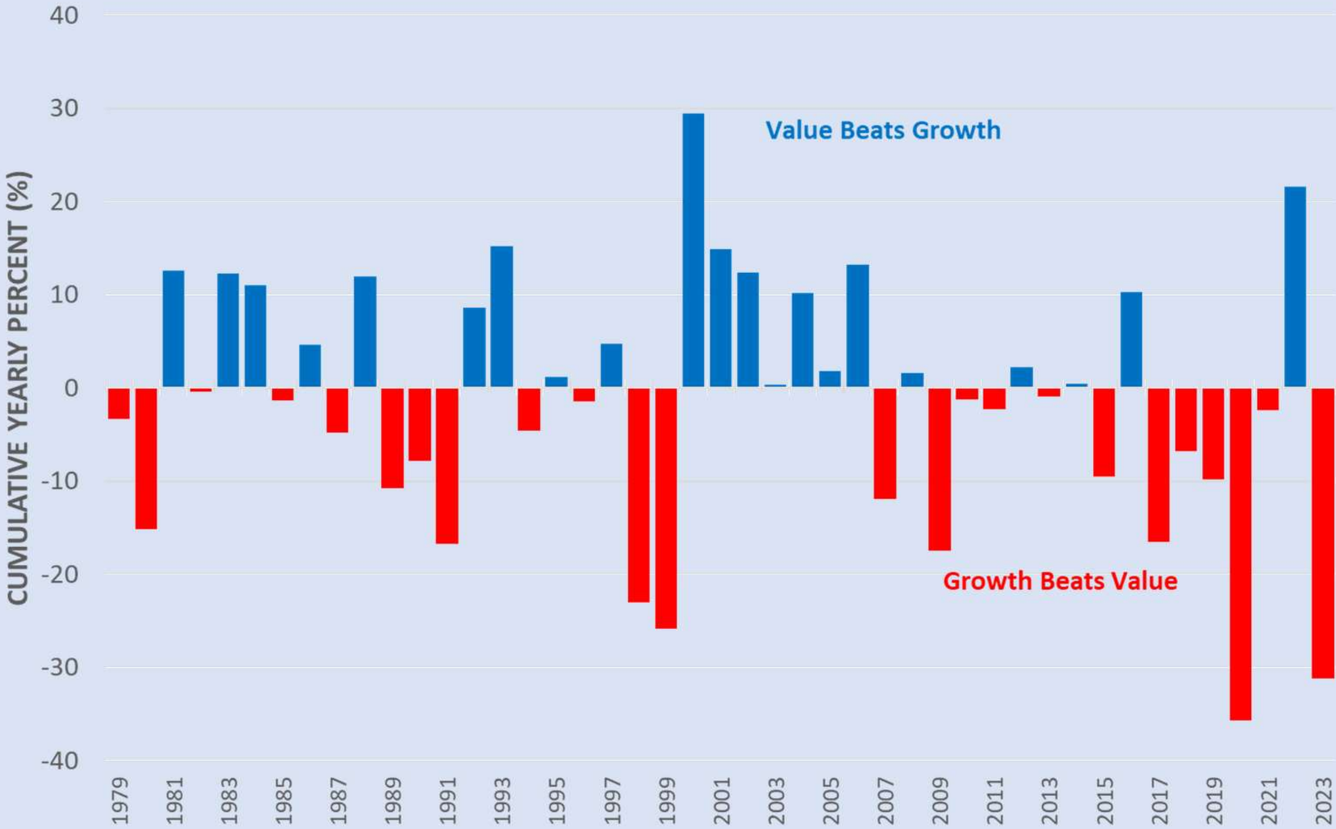
Annualized 24-Months	S&P 500
Mar 2008 - Feb 2010	-6.69

Since January 1995, there have been 336 twelve-month rolling periods through the end of December 2023.

The worst 12-month period (during the Global Financial Crisis/Recession) and the second best 12-month period for the S&P 500 were back-to-back.

While the S&P 500 advanced over 53% in its second best 12-month period and lost less than 44% over the prior 12-month period, the S&P 500 was still down MORE than 6.5% ANNUALIZED for the 24-month period.

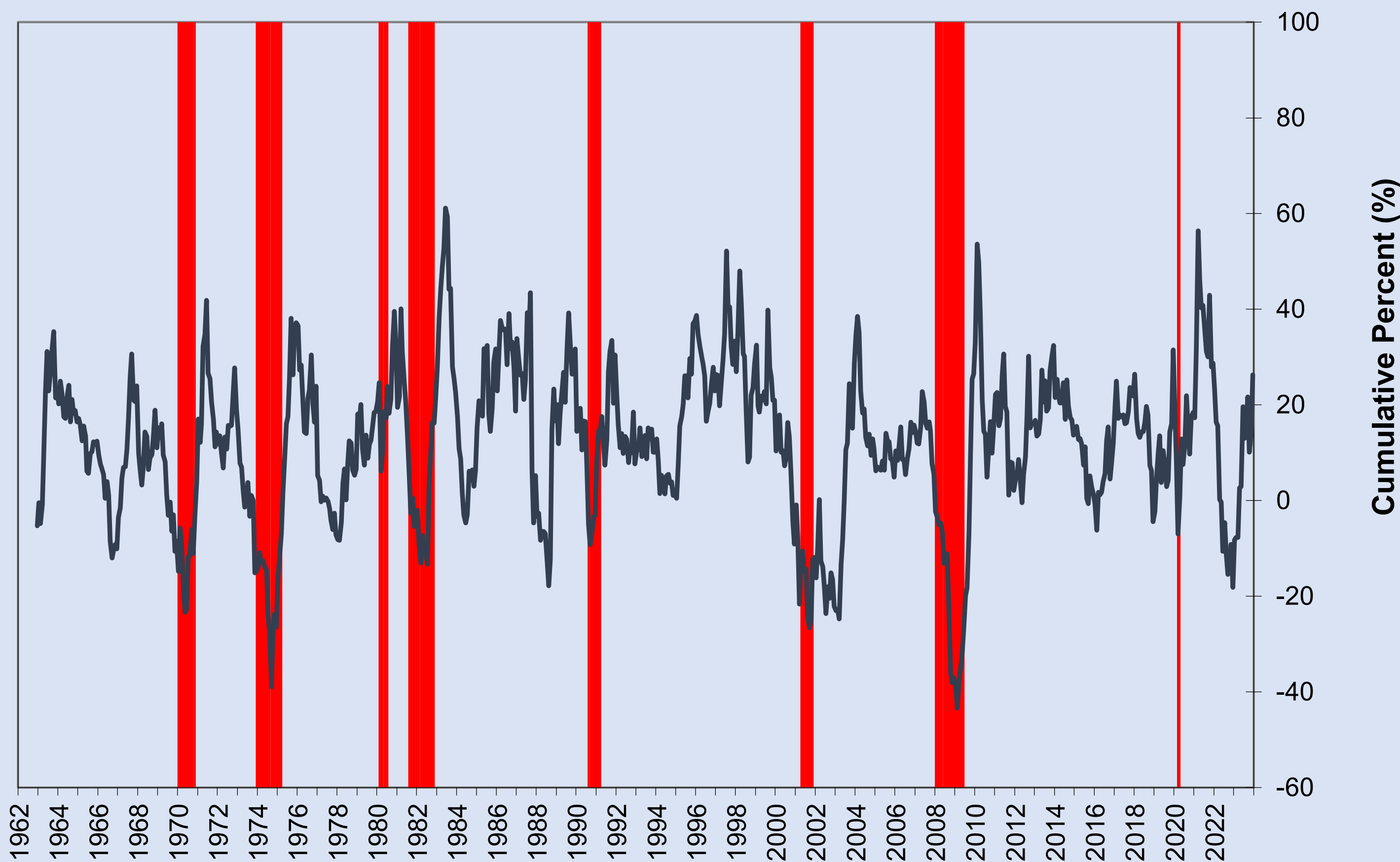
Last 3 Years of Growth vs. Value Shows Importance of Protecting against Equity Declines



In 2021, Growth beats Value by 2.4% and it wins by 31.2% in 2023. Both were up years. Value won in 2022 by 21.6%, which was a negative market year.

By protecting against bigger market losses in 2022, Value has delivered the same 3-year annualized return for 2021-2023 as Growth (8.9%).

The Worst 12-Month Equity Returns Happen During Recessions



There have been 14 months beginning in 1962 when the S&P 500 index declined by more than 25% cumulatively over a 12-month period. ALL 14 instances occurred during recessions.

Equities typically fall prior to a recession and rebound before the recession is over.

Risk of Both Equities and Bonds Higher During Recessions

Annual Standard Deviation

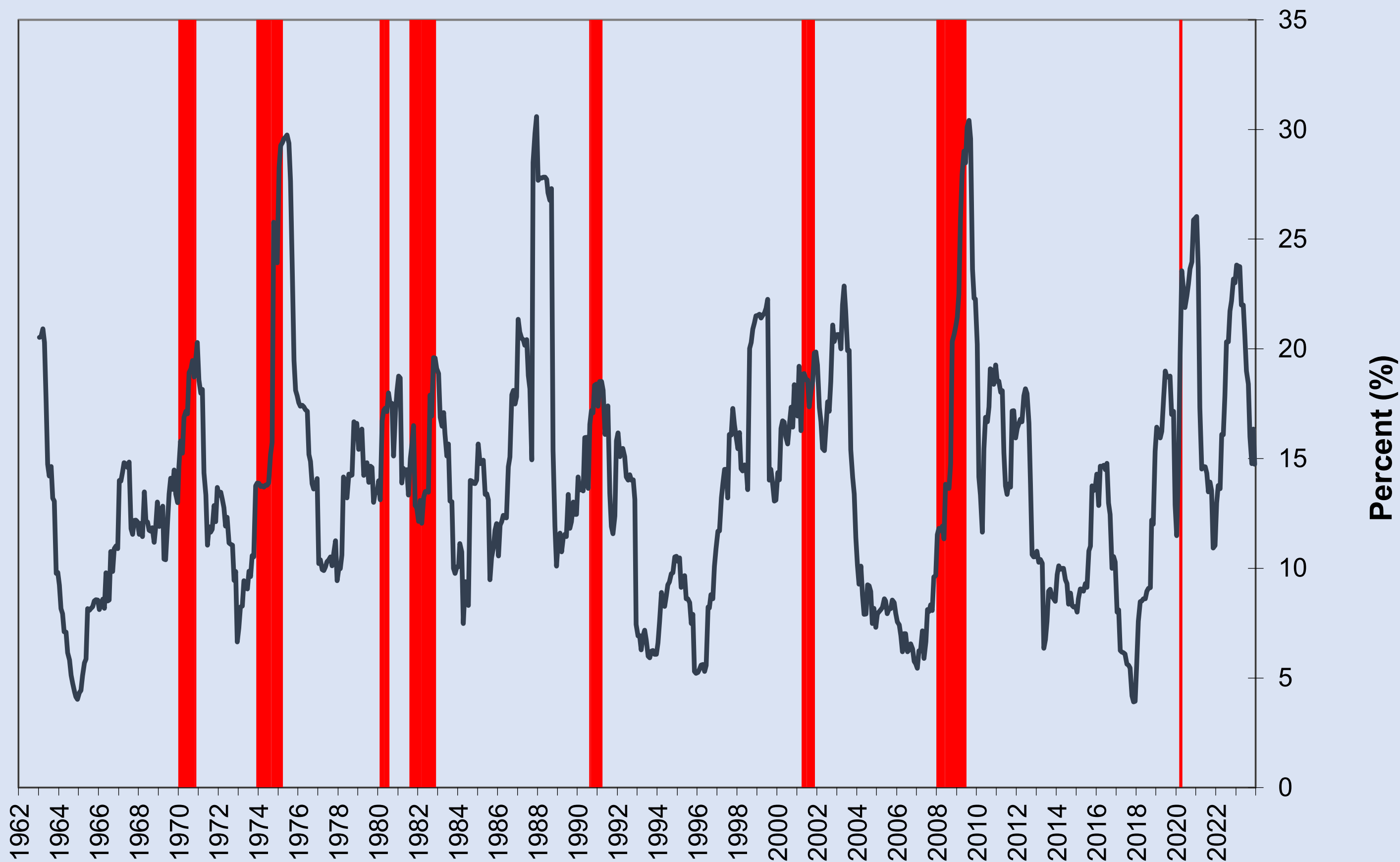
Recession	Number of Months	S&P 500	Russell 1000	T-Bonds
No	480	14.1	14.2	5.0
Yes	59	22.3	23.1	9.5
All Months	539	15.2	15.5	5.8

Equity risk increases dramatically during recessions while bond risk nearly doubles

There are 539 months between January 1979 and November 2023

According to the National Bureau of Economic Research (NBER), the economy has been in a recession in 59 of those months (11% of the time)

Equity Volatility Increases During Recessions



S&P 500 volatility has increased dramatically during each of the past 8 recessions.

During recessions, equities have suffered some of their worst 12-month returns with big increases in volatility.

How Can You Protect Your Equity Portfolio?

- Think of the most recent 3-year Growth vs. Value returns where Growth wins in 2 of the 3 years by a total of 33.6% whereas Value wins in only 1 of the 3 years by a total of 21.6%
- But winning in a down year is more valuable than winning in an up year – so for the 3 years, their annualized return is the same
- Applying the same concept – going down less than the market in a down year/recessionary period is CRITICAL!

Active, Passive & In-Between

- Active vs. passive investment management:
  - Most active managers trail benchmarks over time—do they sufficiently address downside risk? Performance is often inconsistent
  - Passive managers provide 100% of all negative equity returns giving NO downside protection
- Is there a "middle ground"?
  - Enhanced Indexing
  - Smart Beta Strategies or Rules-Based Strategies

There is a middle ground between active and passive strategies for those investors who do not want to "punt" with purely passive investments

"Smart Beta"

- Market beta provided by market capitalization-weighted indices like the S&P 500 or Russell 1000 is not the only source of equity risk premia available when purchasing a stock portfolio
- There are additional "factors" or fundamental characteristics that provide investors with attractive return-risk trade-offs that can complement and, in some cases, compete with the traditional market capitalization-weighted benchmark indices
  - "Smart Beta" or Rules-Based strategies break up the traditional market index into segments based on these fundamental characteristics
- Well-known "factors" or fundamental characteristics include Value, Momentum, Size, Quality & Low-Volatility

Smart Beta: Factor-based investing provides passive/rules-based exposure to alternative risk premia or return factors in the equity market

Low Volatility

- Low Volatility is a smart beta strategy not based on a formal equity return factor (like Value, Momentum or Quality), rather it is defined as an anomaly that has been found empirically
- The Volatility anomaly is evident over the long-term as portfolios of low volatility stocks (measured using market beta or historical returns variability) have out-performed portfolios of higher volatility stocks
- The problem with Low Volatility as a strategy is that **in order to reduce total risk, a pension fund must increase its tracking error and accept underperformance in strong up markets (i.e., for the 12-months ending in December 2023, the S&P 500 Low Volatility Index has underperformed the S&P 500 by 25.6%)**

Enhanced Indexing

- An enhanced index portfolio aims to "track" an index, but also attempts to modestly outperform it with similar or less risk
- Active managers either ignore or accept higher tracking error while enhanced index managers look to maintain low tracking error relative to the market index
- Enhanced indexing can increase the odds of success, and can reduce the odds of a large surprise
  - Due to its lower tracking error relative to the passive market index, Enhanced Index strategies generate more consistent value-added relative to Active Strategies (which tend to go in and out of favor)

Enhanced indexing seeks to outperform the passive index while maintaining sector and risk exposures like the index

Enhanced Indexing Can Provide Downside Protection with Upside Potential

- Low volatility strategies have a lower beta than the market to reduce total risk at the cost of higher active risk (i.e., tracking error)
  - Low volatility strategies provide downside protection at the cost of upside returns
  - Downside capture less than 100% but upside capture also less than 100%
  - Low Volatility strategies typically have much less risk than the overall market
- Enhanced index strategies have a beta equal to the market so they can fully participate in up markets while still protecting in down markets
  - Enhanced equity strategies typically have downside protection without giving up upside returns
  - Downside capture less than 100% but upside capture can be equal to or above 100%
  - Enhanced equity strategies typically have slightly less risk than the overall market

Example of Enhanced Index Strategy Out-Performance Across Market Environments

S&P 500® / Enhanced Index Strategy Monthly Returns Analysis
January 2004 - December 2023

	Biggest Negative Months "Down" Markets	Smaller Mixed Months "Sideways" Markets	Biggest Positive Months "Up" Markets	All Months
Return Ranges (%)				
	-17 to -2.5	-2.5 to +2	+2 to +13	-17 to +13
Average MONTHLY Returns (%)				
S&P 500®	-6.26	0.37	5.03	0.87
Enhanced Index Strategy	-6.13	0.46	5.09	0.95
Excess Return	**0.13**	**0.09**	**0.06**	**0.09**
Counts (#)	39	120	81	240

The goal of an enhanced index strategy is to capture more than 100% of the market's upside return and less than 100% of the downside return

Ideally, the strategy should offer out-performance in all three market environments

Investment Mandates – Risks & Fees

Equity Manager Mandate	Total Volatility	Active Risk	Fees
Active	At or above Market	2% - 8%	25 - 100 bps
Passive Index	Equal to Market	0.1% - 0.5%	1 - 10 bps
Enhanced Index	Below or Equal to Market	1% - 2%	10 - 30 bps
Smart-Beta	Below or Above Market	3% - 7%	15 - 50 bps

Enhanced Index strategies are often viewed as the sweet-spot between trying to still beat the market but taking less active risk with less fees

What is Right (Active vs. Passive) for Your Pension Plan?

Should your plan invest with Active strategies versus Enhanced Index, Smart-Beta (Rules-based) or Passive index strategies? It depends on the following considerations:

- Your pension plan's funded status and investment policy statement's target rate of return and acceptable risk levels
- Your desire to reduce total investment management fees relative to a strictly active manager platform (active manager fees are higher relative to enhanced index, smart-beta rules-based or passive index managers)
- The ability of active managers to add value on a consistent basis relative to their benchmarks relative to their active risk
- The pension trustees' level of patience as Active manager's outperformance or underperformance typically occurs in cycles

Pension plans can combine large-cap equity active strategies with enhanced index, rules-based or passive index strategies to reduce fees and active risk

Other Considerations in Selecting Investment Vehicles and Managers

- Passive index and smart-beta mutual funds/ETF's do not provide customized proxy voting whereas a separately managed account (whether it be an active or enhanced index strategy) can vote proxies in accordance with sponsors' policies or other issues that are important to public pension plans.
- Investment guidelines stipulating a maximum (for example 5%) holding on any security in a portfolio would currently be violated with an S&P 500 index fund positions in Apple and Microsoft
- If securities lending is important, separately managed accounts are preferrable to mutual funds/ETF's
- Passive index funds do not protect against downside risk – you bear 100% of the market decline whereas some Active, Smart Beta strategies (like lower volatility), and Enhanced Index strategies can provide some downside protection

You choose active, rules-based/smart-beta, enhanced index or passive managers and then select the appropriate vehicle (MF, ETF, SMA)

Systemic Impacts of Investing

- Stocks trade in baskets or groups due to big flows into passive indices and rules-based ETF's over the past 15 years
  - This has led to markets moving more quickly, such as the fastest ever (23-days) bear market and the fastest ever bull market since February 2020
- These large cash inflows have made the market even more concentrated as the biggest stocks get the largest investment and continue to grow – the 10 largest companies in the S&P 500 now represent nearly 33% of the total index weight
- When the economy goes into recession and the stock market retreats, purely passive market index funds will provide 100% of the negative return – there will be no downside protection

Passive Index Funds have been a great investment during the longest-ever bull market rally but may disappoint in other market environments

Key Takeaways

- Historically, recessions occur 11% of the time and unfortunately, economists are not that accurate at predicting when it happens
- Equities produce negative average returns during recessions with much higher than typical risk
- There are 2 ways to increase the value of your pension plan – increase return or reduce risk (**Remember Risk is Costly!)**
- There are more choices when hiring managers than just Active or Passive – Enhanced Indexing and Smart Beta (e.g., lower volatility strategies focusing on dividend growth)
- There is a trade-off between lowering overall risk while raising tracking error (using a Smart Beta, reduced volatility strategy) vs lowering overall risk a little bit while keeping tracking error low (Enhanced Index strategy)
- Enhanced Indexing is often viewed as the sweet spot as it is designed to protect pension plans on the downside but have more participation in the upside compared to Smart Beta strategies

Important Disclosures

PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.
INVESTMENTS ARE NOT GUARANTEED AND MAY LOSE VALUE.

TWIN Capital Management, Inc. (TCM) is a registered investment advisor founded in April 1990 and headquartered in McMurray, Pennsylvania.

This material is intended as an aid in the education of investors about various investment topics. It is not to be considered an advertisement for any services or specific investment product offered by TCM. The opinions expressed are those of the presenter. Although not specifically provided herein, it should be disclosed that TWIN manages enhanced index investment strategies relative to USA large-cap equity benchmarks, selecting specific stocks TWIN believes are most attractive using its proprietary quantitative valuation process and model. The process is augmented with TWIN's unique Fundamental Tilt®, providing dynamic tracking error and active size/style targeting. One of the risks associated with TWIN's enhanced-index investment strategies is the possibility that returns from selected stocks will trail returns from the overall stock market during any given period. An investor with a well-balanced, long-term portfolio who seeks some measure of risk reduction and is interested in risk-adjusted returns may wish to speak with their investment professionals about this type of investment approach.

MARKET DATA
Where market and/or index data is presented, it has been obtained from a variety of sources deemed reliable. These sources may include some or all of the following: FTSE/Russell, FactSet Research Systems, and Ford Equity Research. TCM assumes no responsibility for the accuracy of this data. Standard & Poor's, S&P and S&P 500 are registered trademarks of Standard & Poor's Financial Services LLC, a division of S&P Global (S&P"). These trademarks have been licensed to S&P Dow Jones Indices LLC. Frank Russell Company ("Russell") is the source & owner of the trademarks, service marks and copyrights related to the Russell Indexes. Russell is a trademark of Frank Russell Company. None of the owners or suppliers of data featured in this report promote, sponsor or endorse the content of this communication, nor accept responsibility for errors or omissions in the underlying data. Further distribution of the index data contained in this report is prohibited.

INDEX INFORMATION
The S&P 500 Index is a representative measure of 500 leading companies from leading industries; the index is a benchmark for the large-cap segment of U.S. equity market. Company weights in the index are proportional to firms' available market capitalization (price times available shares outstanding). A Committee at Standard and Poor's maintains the index with a focus on liquidity and investability. FTSE/Russell produces and maintains a family of U.S. equity indexes. In the determination of index membership, Russell calculates capitalization and other category breakpoint values based on ranks of U.S. common stocks at each annual reconstitution period using market value of freely-available outstanding shares (as of the last day of May each year). Stocks exceeding the breakpoint established for the largest 3,000 stocks become constituents in the Russell 3000® Index (with some adjustments to the constituent list to reduce category changes). Similarly, the largest approximately 1,000 stocks become the Russell 1000® Index. Style category breakpoints based on an objective scoring algorithm are used to assign fractions of Russell Index constituents' capitalization to value & growth sub-indices.

DEFINITIONS & CALCULATIONS
Annualized Returns are calculated as the compound geometric average monthly returns. The geometric average is the monthly average return that assumes the same rate of return every period to arrive at the equivalent compound growth rate reflected in the actual return data. The results are annualized by raising the sum of one plus the compound geometric average monthly return to the twelfth power and then subtracting one. Standard Deviation measures the dispersion of uncertainty in a random variable (in this case, investment returns). The higher the volatility of investment returns, the higher the standard deviation will be in any given case. For this reason, standard deviation is often used as a measure of investment risk. Values are calculated by applying the traditional sample deviation formula to monthly return data, and then annualized by multiplying the result by the square root of twelve.