DoubleLine®

Finding a Bottom in Equities

DoubleLine Macro Asset Allocation Team | June 2022

In this note, we provide some historical context to equity bear markets, explore the size of equity drawdowns during economic recessions and analyze the key factors driving the severity of equity drawdowns. Most importantly, we try to answer the question: How much further can equities sell off from here?

Key Takeaways

1. In the post-war period, the S&P 500 Index has experienced a bear market, on 13 occasions, with a median drawdown of 29.6%.[1] The current drawdown of 23.6% would rank as the 10th largest during the period.

2. Based on empirical evidence, we have identified two major drivers of the magnitude of equity drawdown during recessions: equity valuations and severity of recession.

3. Current high valuations indicates that the equity drawdown could be larger than historical averages, although it is possible there might be a milder recession this cycle given healthier corporate and household balance sheets in this period, and less leverage in the financial system, which could mitigate some of the downside.

4. From a tactical perspective, we will consider adding to equity exposure on signs of capitulation, associated with panic selling, as measured by the CBOE Volatility Index (VIX), a metric that follows implied volatility of the S&P 500.

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Nearly halfway through 2022, the year has turned out to be a challenging one for equity investors with the S&P 500 suffering its worst start in over 50 years, down 20.4% year-to-date, falling into bear market territory. (Figure 1) The weakness in stocks is broad based, with the median stock in the S&P 500 down 27.4% from its 52-week high. Formerly loved growth stocks are facing even more challenges, with the median stock in the Russell 1000 Growth Index down 35.9% from its 52-week high.

S&P 500 Total Return by Year (Since 1970) | As of June 23, 2022

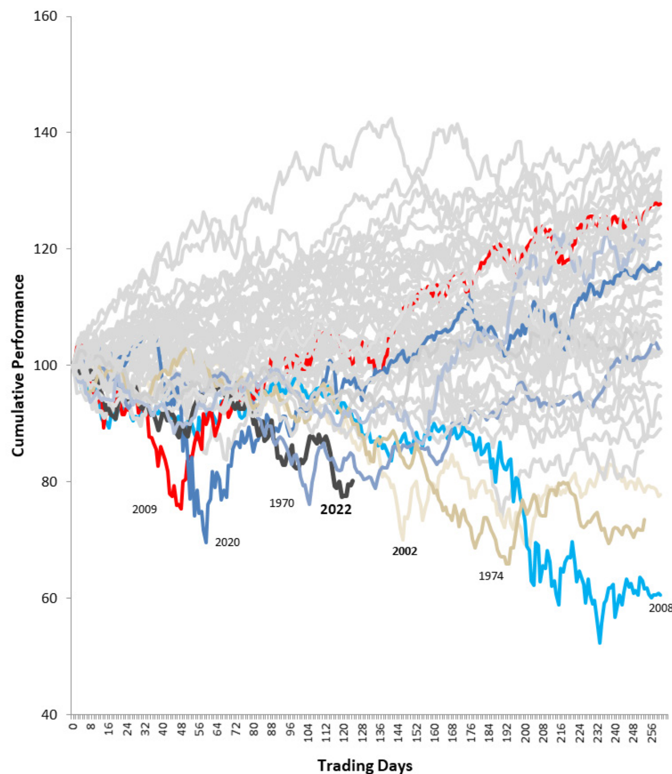


Figure 1
Source: DoubleLine, Bloomberg

Global assets have responded poorly to aggressive central bank tightening. Front and center is the Federal Reserve, caught behind the curve in raising interest rates to combat inflation. With headline inflation running at 40-year highs above 8% year-over-year, the Fed has quickly corrected course, raising policy rates 150 basis points (bps) over the last three months with around 200 bps of additional hikes expected by the end of the year. The Fed has also started the process of reducing the size of its nearly $9.0 trillion balance sheet, also known as quantitative tightening. The hawkish pivot coincided with real yields rising over 200 bps and S&P 500 forward price-to-earnings (P/E) multiples rerating lower by around 30% over a six-month period.[2] *(Figure 2)* With easy monetary conditions ending and increased fears that the Fed will send the U.S. economy into recession, it is no wonder equities are on unsure footing.

S&P 500 Forward Price-to-Earnings Ratio and 10-Year Real Yield
As of June 23, 2022

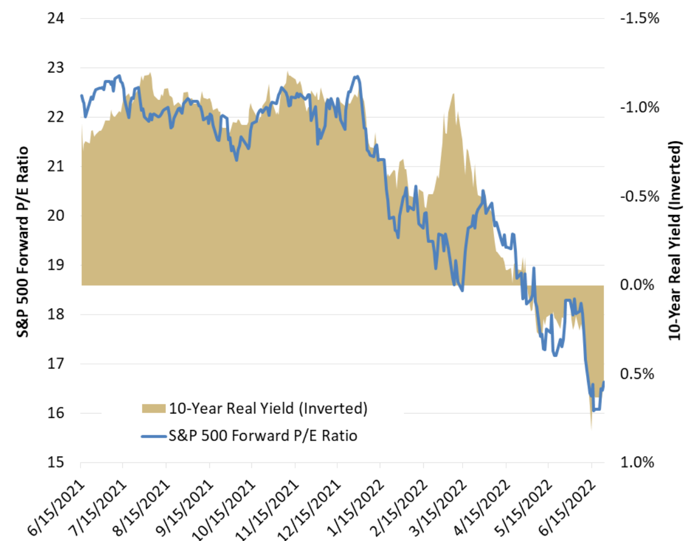


Figure 2
Source: DoubleLine, Bloomberg

Bear Markets in Context

In the post-war period, the S&P 500 has experienced a bear market on 13 occasions, with a median drawdown of 29.6%. The current drawdown of 23.6% would rank as the 10th largest during the period. *(Figure 3)* The median drawdown during non-recessionary bear markets was 27.8%. Bear markets associated with recessions experienced deeper drawdowns, with a median drawdown of 35.0%.

S&P 500 Bear Markets (1945-2022) | As of June 16, 2022

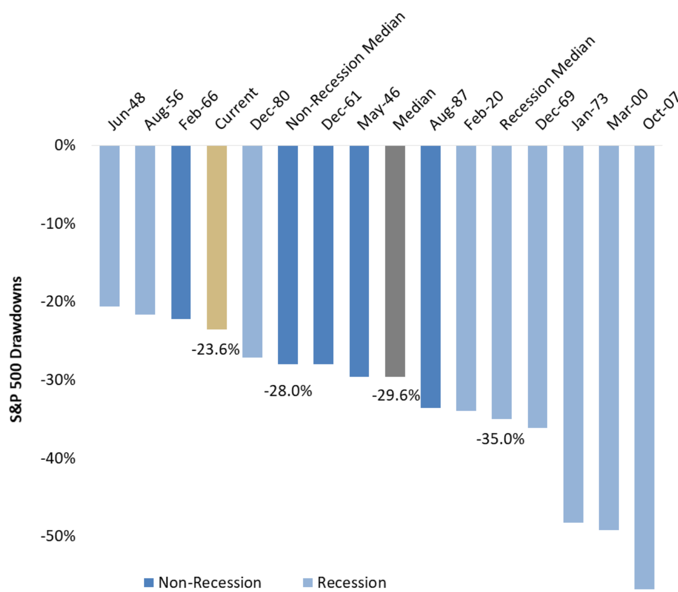


Figure 3
Source: DoubleLine, Bloomberg. Current period from Jan. 3, 2022 to June 16.

How did equities perform after reaching bear market territory?

During non-recessionary bear markets, equities typically performed well, with the S&P 500 rallying a median of 20.5% over the following 12 months.[3] *(Figure 4)* The hit rate, or share of episodes with positive returns, has been high, with strong positive performance 75% of the time. During recessionary periods, equities produce positive forward returns on average, although there has been a great deal of dispersion. The hit rate has been lower, particularly on six-month forward returns, with positive returns only 37.5% of the time. Focusing solely on median forward returns during recessionary periods might be a bit misleading, as the drawdowns seen during the 2008, 2001 and 1974 periods were significant and highlight the asymmetric profile of returns during recessionary periods.

Recessionary	Forward Returns		
>20% Corrections	6-month	12-month	18-month
Jun-49	22.3%	39.7%	45.5%
Oct-57	9.1%	27.1%	46.7%
Jan-70	-9.4%	11.6%	15.9%
Nov-73	-7.4%	-28.0%	-5.9%
Feb-82	-2.7%	32.1%	44.8%
Mar-01	-6.3%	-1.2%	-23.5%
Jul-08	-25.5%	-29.1%	-9.5%
Mar-20	34.3%	59.0%	82.9%
Average	1.8%	13.9%	24.6%
Median	-4.5%	19.3%	30.3%
Hit Rate	37.5%	62.5%	62.5%

Non-recessionary	Forward Returns		
>20% Corrections	6-month	12-month	18-month
Sep-46	0.0%	-0.8%	-7.1%
May-62	10.9%	17.7%	29.5%
Aug-66	16.0%	24.3%	22.0%
Oct-87	15.5%	23.3%	32.8%
Average	10.6%	16.1%	19.3%
Median	13.2%	20.5%	25.8%
Hit Rate	75.0%	75.0%	75.0%

Figure 4
Source: DoubleLine, Bloomberg. As of June 23, 2022.

Equity Drawdowns During Recession

The probability of the U.S. falling into recession over the next 12 months has risen significantly this year. A recent survey of economists by Bloomberg puts the median probability of recession over the next 12 months at 31.5%. Other closely followed recession indicators are signaling an even higher probability. The yield spread between the two-year and 10-year U.S. Treasury is near zero, implying a 45% probability of recession over the next 12 months. In the 12 recessions since 1945, the median drawdown was roughly 24%. *(Figure 5)* However, the dispersion has been high, with the average drawdown around 30%. The smallest recession-linked drawdown was 14% in 1960 while the worst drawdown of 56.8% occurred during the Global Financial Crisis in 2008.

S&P 500 Drawdowns During Recession (1945-2020)
As of June 23, 2022

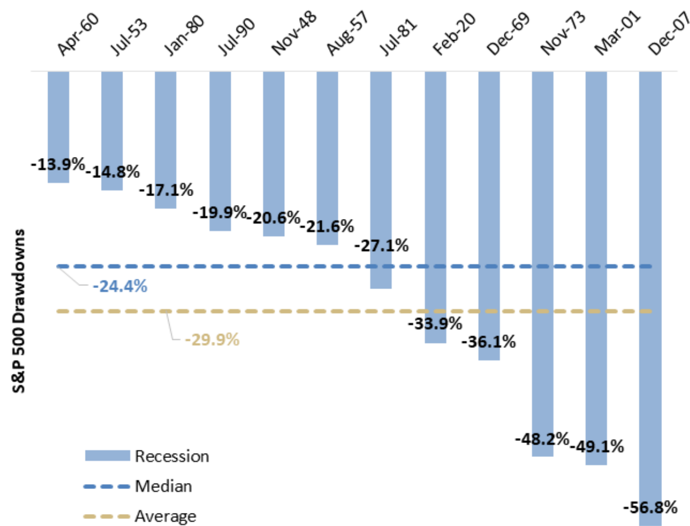


Figure 5
Source: DoubleLine, Bloomberg. Recessions based on starting month as classified by National Bureau of Economic Research.

Drivers of the Magnitude of Equity Drawdowns

This raises the question: ***Are there any variables that explain the size of equity drawdowns during recessions?*** Based on empirical evidence, we have identified two major drivers of the magnitude of drawdowns: valuations and severity of recession.

Valuations

Equity valuations heading into recessions have an impact on the size of equity drawdowns, as higher peak valuations heading into recessions tend to coincide with larger equity drawdowns.[4] By applying a Cyclically Adjusted Price-to-Earnings (CAPE®) Ratio, which measures valuation by using real earnings per share (EPS) over a 10-year period to smooth out fluctuations in corporate profits that occur during different periods of a business cycle, we see a relationship between higher peak CAPE® ratios and larger equity drawdowns during recessions. *(Figure 6)*

S&P 500 Drawdown and Peak CAPE® Ratio Heading Into Recession | As of June 16, 2022

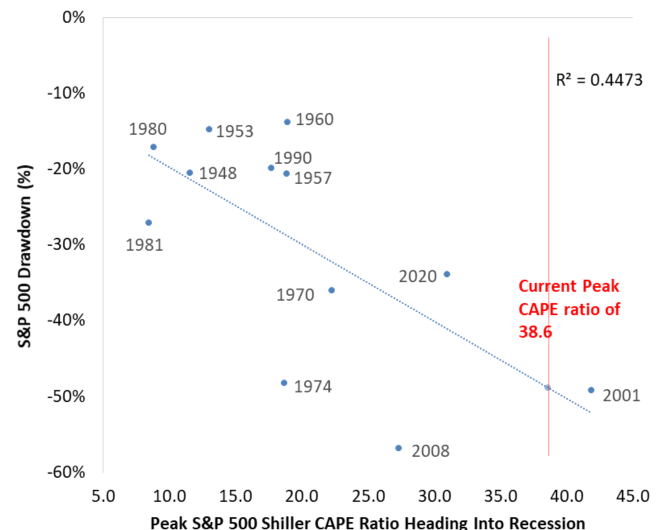


Figure 6
Source: DoubleLine, Bloomberg. Cyclically Adjusted Price-to-Earnings (CAPE)

In the current cycle, the CAPE® ratio has peaked at the highest level since the 2001 dot-com bubble, a signal the drawdown in equities could be larger than average if the economy enters a recession. *(Figure 7)*

S&P 500 CAPE® Ratio and Recession | As of June 16, 2022

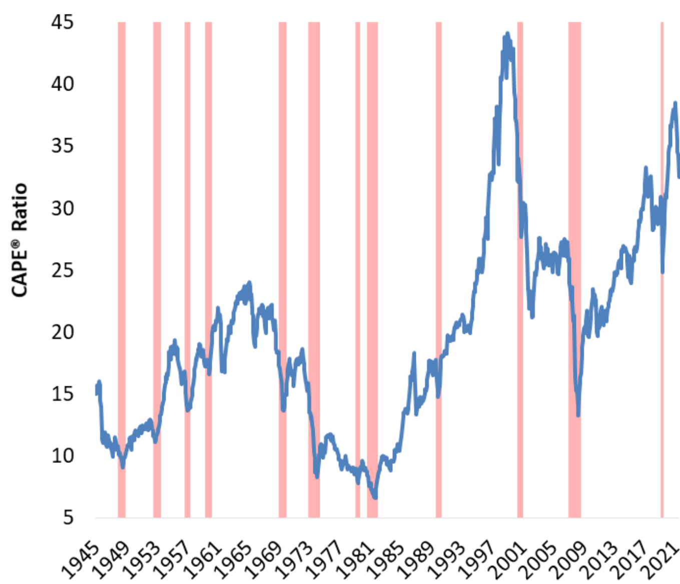


Figure 7
Source: DoubleLine, Bloomberg. Red-shaded areas indicate recessionary periods.

Severity of Recession

The severity, or length of the recession, has also impacted the magnitude of equity drawdowns, as severe recessions, or recessions with duration greater than 14 months, tend to coincide with larger equity drawdowns. Mild recessions, recessions with durations of 8 months or less tend to coincide with smaller drawdowns. *(Figure 8)*

S&P 500 Drawdown and Duration of Recession
As of June 23, 2022

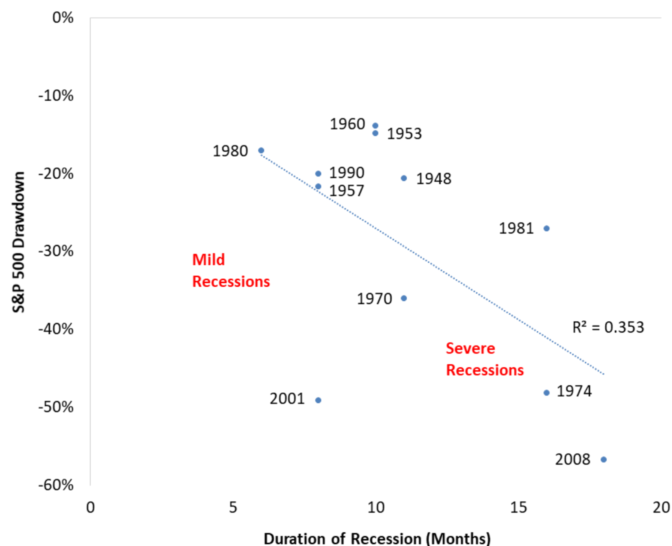


Figure 8
Source: DoubleLine, Bloomberg

Outside of valuations and duration of recessions, we examined two essential economic inputs: labor and private investment. The results show that, on a standalone basis, these inputs have a weaker relationship to the size of equity drawdowns than initial equity valuations[5]. *(Figures 9 and 10)*

S&P 500 Drawdown and Change in Unemployment Rate During Recession | As of June 23, 2022

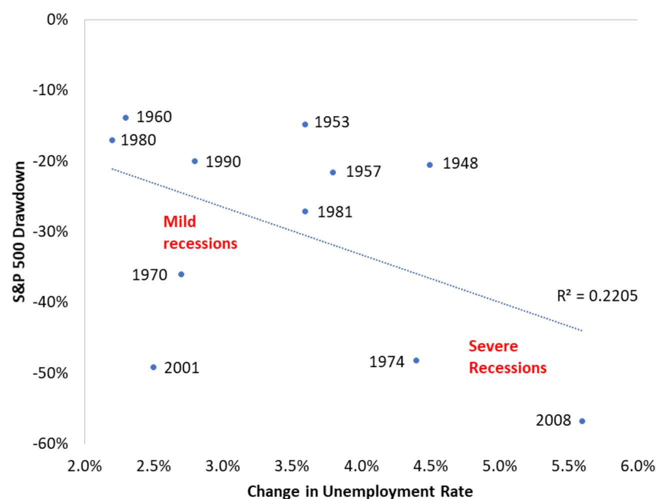


Figure 9
Source: DoubleLine, Bloomberg

S&P 500 Drawdown and Decline in Real Private Fixed Investment During Recession | As of June 23, 2022

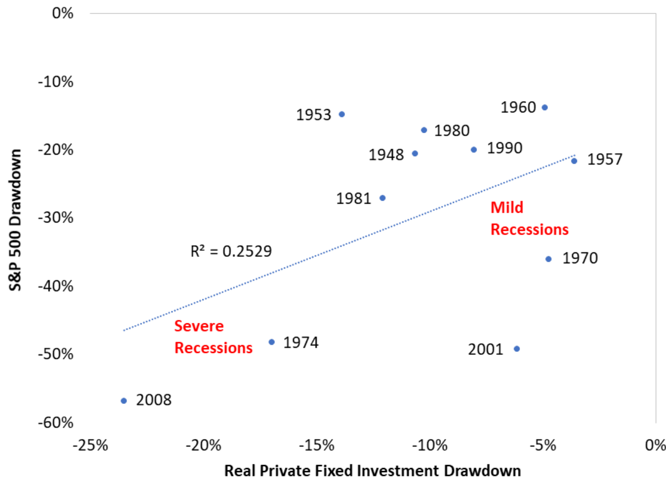


Figure 8
Source: DoubleLine, Bloomberg

S&P 500 Drawdown and Model Implied Drawdown Based on Initial CAPE® Valuation and Duration of Recession
As of June 23, 2022

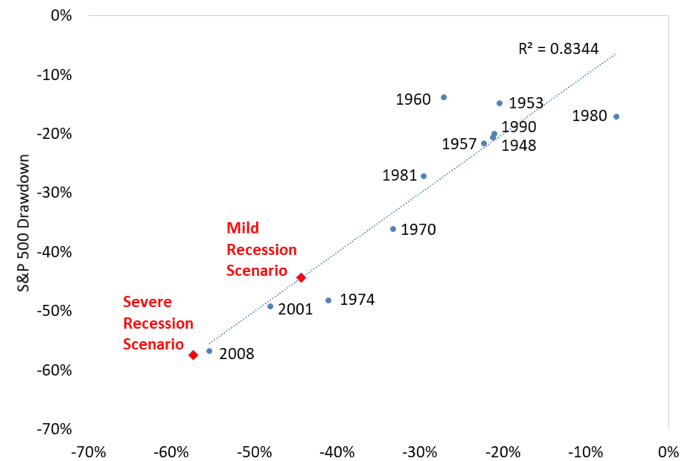


Figure 11
Source: DoubleLine, Bloomberg

Where Is the Bottom?

A simple model based on CAPE® ratio valuation and duration of recession could inform or at least try to answer this question. A model that combines initial peak CAPE® ratio and duration of recession presents reasonable explanatory power on recessionary equity drawdowns. *(Figure 11)* The CAPE® ratio peaked at 38.6x in the fourth quarter of 2021, the highest level since the dot-com bubble. The high valuation indicates that the equity drawdown could be larger than the recession average. Although it is possible, we could see a milder recession this cycle given healthier corporate and household balance sheets, and less leverage in the financial system. If we assume a mild recession with a duration of around eight months, the model implies an equity drawdown of 44%. However, if we experience a more severe recession with a duration of around 14 months, then the equity drawdown could be as large as 57%.

Scenarios and Expected Returns

Taking it one step further, we can calculate an expected return based on estimated probability assumptions for recession. If the U.S. avoids a recession, equities could rally around 20% from the current level, which would bring the S&P 500 to 4,518.[6] Based on our framework highlighted in the previous section, a mild and relatively short recession could see equities decline an additional 29% from the current level, taking the S&P 500 down to 2,671. A severe and protracted recession could see equities down an additional 46% falling to around 2,046 on the S&P 500. *(Figure 12)*

S&P 500 Drawdown and Model Implied Drawdown Based on Initial CAPE® Valuation and Duration of Recession | As of June 23, 2022

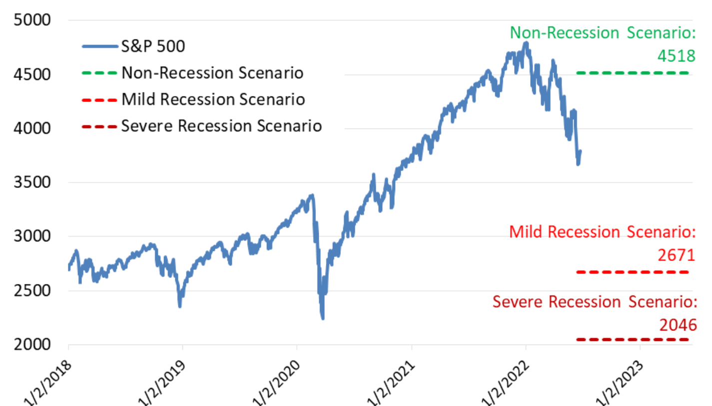


Figure 12
Source: DoubleLine, Bloomberg

Given less excess built up this cycle, and stronger household and corporate balance sheets, we believe a severe recession is less likely, with a probability of 10%. Based on Bloomberg Economist Survey recession probabilities, the expected return would be around 3% for the S&P 500.

Bloomberg Economist Survey Recession Probability
As of June 23, 2022

	Probability	S&P 500 Expected Return
Expansion	69%	20%
Mild Recession	22%	-29%
Severe Recession	10%	-46%
Probability Weighted Return		*3%*

Figure 13
Source: Bloomberg, DoubleLine

However, if the recession probability increases to 45% as implied by the yield spread of the two-year and 10-year U.S. Treasury, the expected return drops to negative 4%. So again, it all depends on the outlook for recession.

2s10s Curve Implied Recession Probability
As of June 23, 2022

	Probability	S&P 500 Expected Return
Expansion	55%	20%
Mild Recession	35%	-29%
Severe Recession	10%	-46%
Probability Weighted Return		*-4%*

Figure 14
Source: Bloomberg, DoubleLine

Investment Implications

From a tactical perspective, we will consider adding to equity exposure if we see signs of capitulation, associated with panic selling. In other words, we would like to see "peak fear." One of the best real-time measures of investor fear is the VIX. Higher readings in the VIX imply increased fear, as investors are willing to pay more for insurance via options. Typically, readings above 40 signal market panic and have generally produced profitable buying opportunities in equities. Over the last 30 years, the VIX has crossed above the 40 level only nine times. *(Figure 15)*

CBOE Volatility Index (VIX) | As of June 23, 2022

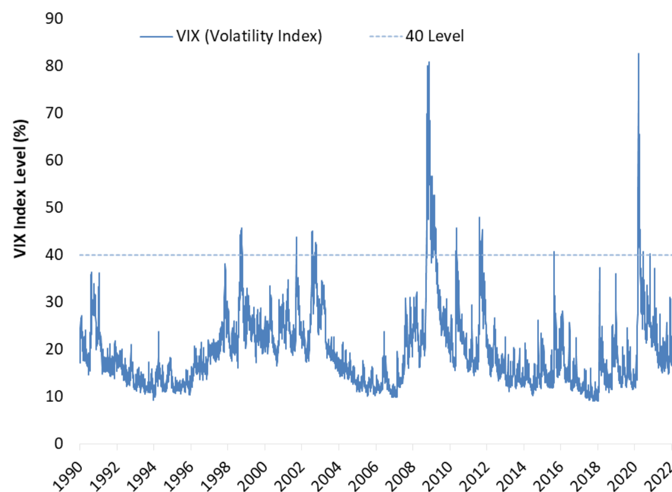
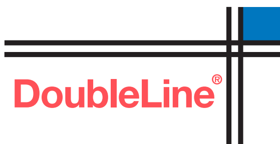


Figure 15
Source: DoubleLine, Bloomberg

Eight out of nine times, equities rose over the following six months. The only negative return was during the Lehman Brothers collapse in 2008. *(Figure 16)*

Date VIX Crossed >40	VIX EOD Level	S&P 500 6-Month Forward Return
8/31/1998	44.3	29.4%
9/17/2001	41.8	12.3%
7/22/2002	41.9	10.0%
9/29/2008	46.7	-26.3%
5/7/2010	41.0	9.9%
8/8/2011	48.0	20.1%
8/24/2015	40.7	1.3%
2/28/2020	40.1	18.0%
10/28/2020	40.3	28.0%
	Average	*11.4%*
	Median	*12.3%*

Figure 16
Source: Bloomberg, DoubleLine



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Conclusion/Final Thoughts

To summarize, the current drawdown in equities has been significant, and the "bear market" label has many investors asking: Where do we go from here? The path for equities will likely depend on whether the U.S. succumbs to an economic recession over the coming months. If the U.S. avoids a recession, equities are relatively attractive at these levels. However, if a recession is unavoidable, then there is likely more downside for equities.

The drawdown could potentially be larger than the average sell-off experienced during recession given the high peak-equity valuations seen this cycle. It does appear that a mild truncated recession is more likely given healthy corporate and household balance sheets. This should mitigate the size of the equity drawdown. Based on the framework outlined in this note, a mild recession could see the S&P 500 decline to 2,671, below pre-pandemic levels in January 2020. With the probability of recession by some metrics around 45%, the risk-reward for equities is still not compelling. We likely need to see lower prices coinciding with panic selling, or capitulation. Once it has become clear that we have seen "peak fear," we would consider adding to our equity allocation. Until then, "Helmets on." ■

About the Authors

Fei He, CFA
Quantitative Analyst
Macro Asset Allocation

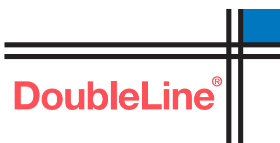
Mr. He joined DoubleLine in 2014 as a Quantitative Analyst on the Macro-Asset Allocation team. Prior to DoubleLine, he worked at PIMCO as a Quantitative Research Analyst initially in client analytics, advising clients on strategic asset allocation, and later focused on emerging markets and commodities. Mr. He has published papers in the Financial Analysts Journal (2014 Graham and Dodd Scroll Award winner). He holds a B.S. in Biological Sciences & Biotechnology from Tsinghua University in Beijing, an M.S. in Financial Engineering from the Anderson School of Management at the University of California, Los Angeles (UCLA) and a Ph.D. in Molecular & Medical Pharmacology from UCLA's David Geffen School of Medicine. Mr. He is a CFA® charterholder.

Ryan Kimmel
Analyst
Macro Asset Allocation

Mr. Kimmel joined DoubleLine in 2013. He is an Analyst overseeing the Multi-Asset Growth Strategy. Prior to DoubleLine, Mr. Kimmel was a Proprietary Trader at The Gelber Group, trading currencies for the Foreign Currency Group. Previous to that, he was an Investment Banking Analyst in Morgan Stanley's Mergers and Acquisitions Group. Mr. Kimmel holds a B.A. in Business Economics from the University of California, Los Angeles (UCLA) and an MBA from UCLA's Anderson School of Management.

Sam Garza
Portfolio Manager
Structured Products - CLOs

Mr. Garza joined DoubleLine in 2009. He is a Portfolio Manager overseeing both the Macro-Asset Allocation and CLO teams. He is a permanent member of the Fixed Income Asset Allocation and Structured Product committees. Prior to DoubleLine, Mr. Garza was a Senior Vice President at TCW, where he held several positions over his tenure. Prior to TCW, he worked at Union Bank of California in the Commercial Banking Group, where he was involved with corporate loan underwriting. Mr. Garza holds a B.A. in Business Economics from the University of California, Santa Barbara, and an MBA from the Anderson School of Management at the University of California, Los Angeles.



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Citations

[1] A bear market is defined as a drawdown of 20% or more from the cycle high based on daily closing prices.

[2] Real yield is derived from the yield on 10-year U.S. Treasury Inflation-Protected Securities.

[3] Forward returns are calculated based on purchasing the S&P 500 the following trading day after selling off more than 20% from the previous peak. Returns are based on price performance.

[4] "At the Recession Crossroads," Deutsche Bank, May 18, 2022

[5] Excludes the 2020 recession.

[6] Based on median 12-month forward performance of S&P 500 following 20% corrections with no recession as outlined in *Figure 4*.

Basis Points (BPS) – Basis points (or basis point (bp)) refer to a common unit of measure for interest rates and other percentages in finance. One basis point is equal to 1/100th of 1%, or 0.01% or 0.0001, and is used to denote the percentage change in a financial instrument. The relationship between percentage changes and basis points can be summarized as: 1% change = 100 basis points; 0.01% = 1 basis point.

CBOE Volatility Index (VIX) – This real-time market index represents the market's expectation of 30-day forward-looking volatility and is derived from the price inputs of S&P 500 Index options. Calculated and published by the Chicago Board Options Exchange (CBOE), the index is also known by such names as the "Fear Gauge" or "Fear Index."

Cyclically Adjusted Price-to-Earnings (CAPE®) Ratio – This ratio measures valuation by using real earnings per share (EPS) over a 10-year period to smooth out fluctuations in corporate profits that occur during different periods of a business cycle. It is also known as the "Shiller P/E ratio" for Yale University Dr. Robert Shiller, who popularized its use.

Price-to-Earnings (P/E) Ratio – This ratio for valuing a company measures current share price relative to earnings per share (EPS). The P/E ratio is also sometimes known as the "price multiple" or the "earnings multiple." A high P/E ratio could mean that a company's stock is overvalued, or investors are expecting high growth rates in the future.

Quantitative Tightening (QT) – Reverse of quantitative easing (QE); a central bank that acquired financial assets under QE undertakes steps to reduce its balance sheet.

Russell 1000 Growth (RLG) Index – This index measures the performance of the large-cap growth segment of the U.S. equity universe. It includes Russell 1000 Index companies with higher price-to-book ratios and higher forecasted growth values. Growth stocks are shares in a company that are anticipated to grow at a rate significantly above the average growth for the market.

S&P 500 Index – This unmanaged capitalization-weighted index of the stocks of the 500 largest publicly traded U.S. companies is designed to measure performance of the broad domestic economy through changes in the aggregate market value of the 500 stocks, which represent all major industries.

Treasury Inflation-Protected Securities (TIPS) – Type of Treasury security issued by the U.S. government that is indexed to inflation in order to protect investors from a decline in the purchasing power of their money. As inflation rises, TIPS adjust in price to maintain their real value.

You cannot invest directly in an index.

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