

"Up, Up & Away"

December 6, 2022

Live Webcast Hosted By:

Jeffrey Gundlach
Chief Executive Officer

Andrew Hsu, CFAPortfolio Manager





Announcements



Upcoming Webcasts:

December 13, 2022 - Income Fund Webcast

1:15 pm PT/4:15 pm ET

DoubleLine's Portfolio Managers, Ken Shinoda and Morris Chen will discuss DoubleLine's Income Fund.

January 10, 2023 – Just Markets Webcast

1:15 pm PT/4:15 pm ET

DoubleLine's CEO, Jeffrey Gundlach will discuss the economy, markets and his outlook for 2023.

DoubleLine's 2023 webcast schedule is available on our website.

Visit <u>doubleline.com/doubleline-webcasts/</u> to register for upcoming webcasts.

To Receive a Copy of Today's Presentation Slides:

In the webcast player, click on the "Request Webcast Content" tab



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DoubleLine Media Thought Leadership





DoubleLine's Round Table Prime

Featuring today's Financial Thought Leaders: Jim Bianco, Danielle DiMartino Booth, Jeffrey Gundlach, Charles Payne and David Rosenberg. Moderated by DoubleLine's Deputy CIO, Jeffrey Sherman.

Live on Twitter Spaces, January 4, 2023 followed by videos on DoubleLine.com



DoubleLine's Channel 11

Hosted by Portfolio Manager Ken Shinoda and available on Twitter: DLineChannel11 Email: channel11@doubleline.com



The Sherman Show Podcast

Hosted by Deputy CIO Jeffrey Sherman and Portfolio Manager Sam Lau Available on www.doubleline.com, iTunes, Sound Cloud, Google Podcasts, Spotify and Stitcher. Visit them on Twitter: @ShermanShowPod



Monday Morning Minutes Podcast

Hosted by Portfolio Managers Sam Lau and Jeff Mayberry
Featuring timely and relevant weekly Macro and Markets recaps.
Posts weekly to www.doubleline.com, iTunes, Sound Cloud, Google Podcasts, Spotify and Stitcher. Visit them on Twitter: @DLineMinutes

Fund Offerings



Total Return Bond Fund

Retail, Institutional & Retirement Class No Load Mutual Fund					
	Retail	Institutional	Retirement		
	N Share	I Share	R6 Share		
Ticker	DLTNX	DBLTX	DDTRX		
Min Investment	\$2,000	\$100,000	N/A		
Min IRA Investment	\$500	\$5,000	N/A		
Gross Expense Ratio	0.73%	0.48%	0.43%		

The Funds' investment objectives, risks, charges and expenses must be considered carefully before investing. The statutory prospectus and summary prospectus (if available) contains this and other important information about the Funds, and it may be obtained by calling (877) 354-6311/ (877) DLINE11, or visiting https://www.doubleline.com/. Read it carefully before investing.

Mutual fund investing involves risk; Principal loss is possible. Investments in debt securities typically decrease in value when interest rates rise. This risk is usually greater for longer-term debt securities. Investments in Asset-Backed and Mortgage-Backed Securities include additional risks that investors should be aware of such as credit risk, prepayment risk, possible illiquidity and default, as well as increased susceptibility to adverse economic developments. Investments in lower-rated and non-rated securities present a greater risk of loss to principal and interest than higher-rated securities. The Fund may use certain types of investment derivatives. Derivatives involve risks different from, and in certain cases, greater than the risks presented by higher-rate securities. The DoubleLine Total Return Bond Fund intends to invest more than 50% of its net assets in mortgage-backed securities of any maturity or type. The Fund, therefore, potentially is more likely to react to any volatility or changes in the mortgage-backed securities marketplace.

Diversification does not assure a profit, nor does it protect against a loss in a declining market.

Opinions expressed are subject to change at any time, are not forecasts and should not be considered investment advice.

DoubleLine Funds are distributed by Quasar Distributors, LLC.

While the Funds are no-load, management fees and other expenses still apply. Please refer to the prospectus for further details.

Fund holdings and sector allocations are subject to change and are not recommendations to buy or sell any security.

DoubleLine Total Return Bond Fund Performance



DoubleLine Total Return Bond Fund Performance (%)							
			Annualized				
Month-End Returns October 31, 2022	Oct	YTD	1-Year	3-Year	5-Year	10-Year	Since Inception (4-6-2010 through 10-31-22)
DBLTX	-2.25	-14.43	-14.47	-3.83	-0.74	1.14	3.56
DLTNX	-2.27	-14.61	-14.68	-4.07	-0.99	0.90	3.31
Bloomberg US Aggregate Bond Index	-1.30	-15.72	-15.68	-3.77	-0.54	0.74	1.94
					Annu	alized	
Quarter-End Returns							Since Inception
September 30, 2022	3Q22	YTD	1-Year	3-Year	5-Year	10-Year	(4-6-2010 through 9-30-22)
DBLTX	-4.22	-12.46	-12.61	-3.03	-0.28	1.39	3.77
DLTNX	-4.28	-12.62	-12.75	-3.27	-0.51	1.15	3.52
Bloomberg US Aggregate Bond Index	-4.75	-14.61	-14.60	-3.26	-0.27	0.89	2.06
Calendar Year Returns	2021	2020	2019	2018	2017		
DBLTX	0.24	4.12	5.81	1.75	3.79		
DLTNX	-0.01	3.86	5.65	1.49	3.44		
Bloomberg US Aggregate Bond Index	-1.54	7.51	8.72	0.01	3.54		

SEC 30-Day Yield (%)	I-Share	N-Share
Gross	5.11	4.85
Net	5.11	4.85

Performance data quoted represents past performance; past performance does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than the original cost. Current performance of the fund may be lower or higher than the performance quoted. Performance data current to the most recent month-end may be obtained by calling 213-633-8200 or by visiting www.doubleline.com.

Bloomberg US Aggregate Bond Index - This index represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

You cannot invest directly in an index.



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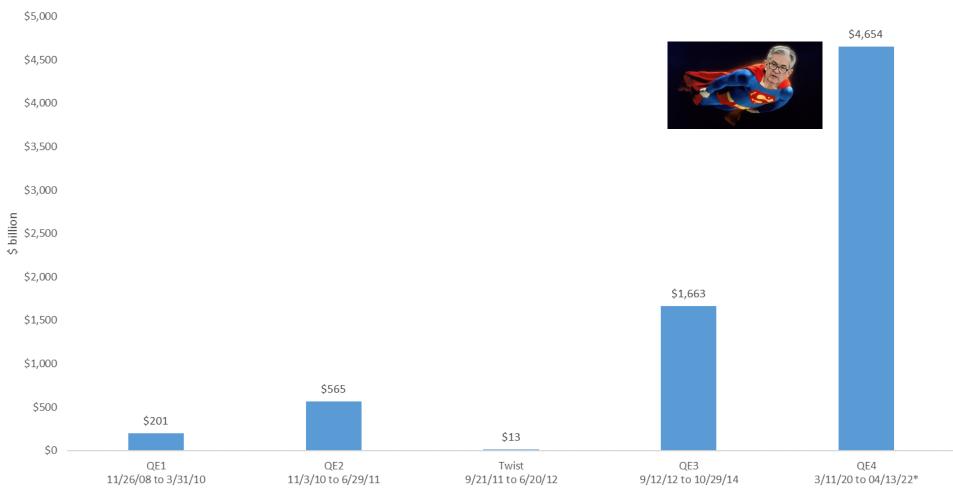




Federal Reserve Balance Sheet





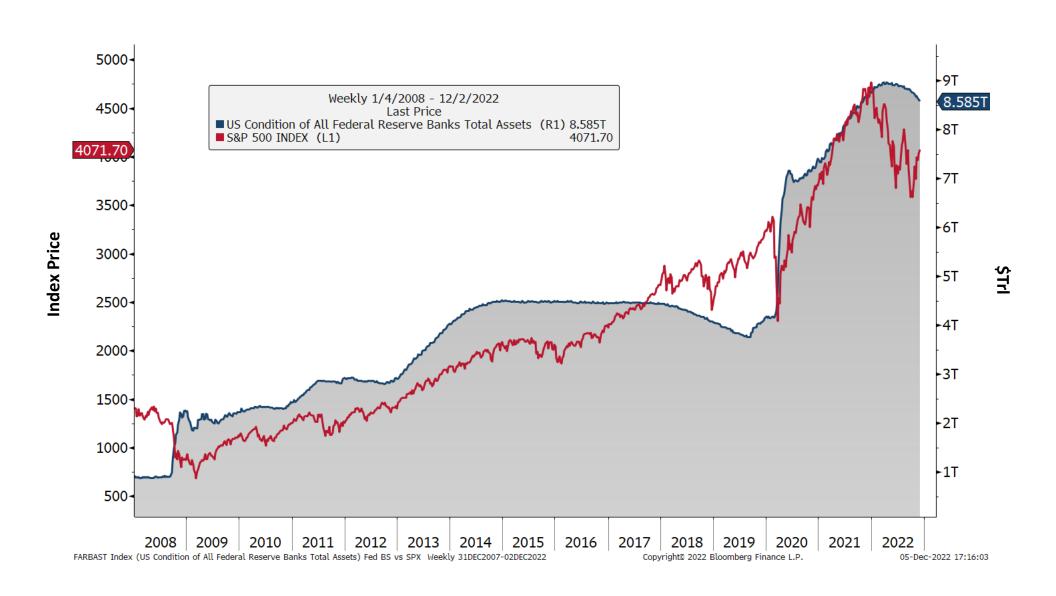


As of November 30, 2022 Source: Bloomberg, DoubleLine

^{*} is the date of the high in assets on the Fed Balance Sheet.

Fed Balance Sheet and S&P 500



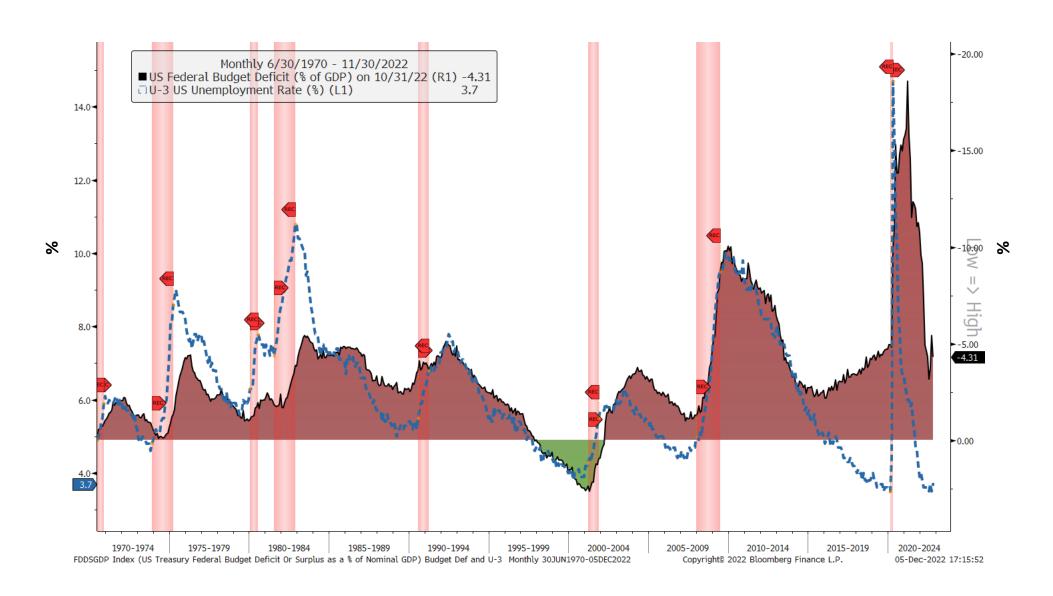


Source: Bloomberg, DoubleLine

Please see the Appendix for index definitions. You cannot invest directly in an index.

U.S. Federal Budget Deficit (% of GDP) and Unemployment Rate

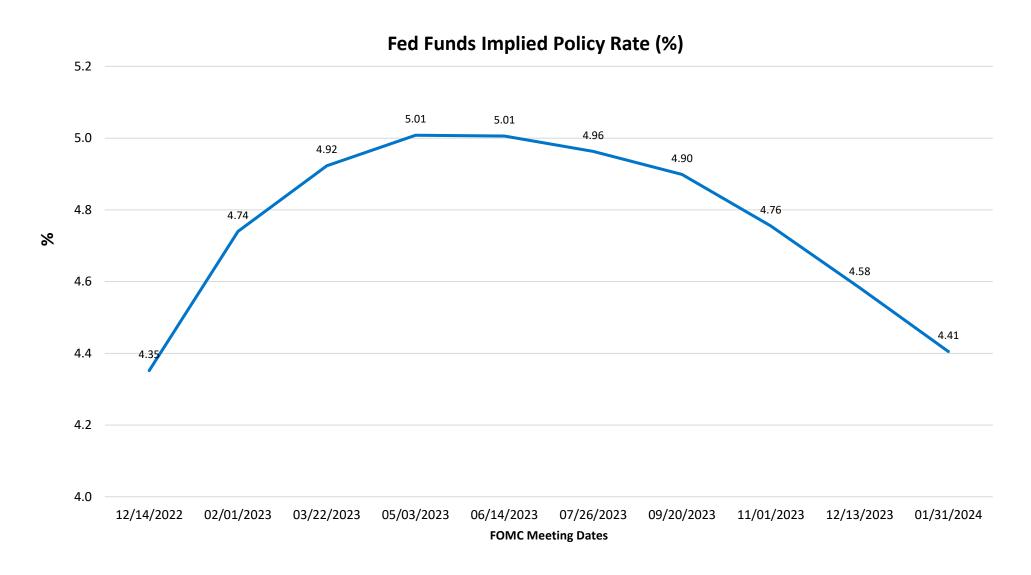




Source: Bloomberg, DoubleLine Gross domestic product (GDP) is the amount of goods and services produced within a given country. Red shaded areas indicate recessionary periods.

Fed Funds Implied Policy Rate (%)

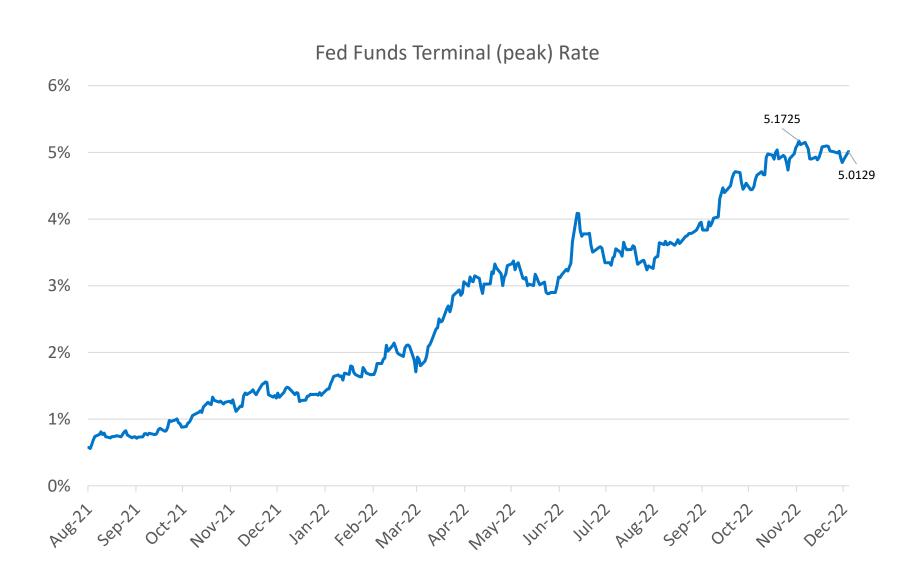




As of December 5, 2022
Source: Bloomberg, DoubleLine
Implied Policy rates are based on Fed Fund Futures provided by Bloomberg's World Interest Rate Probability (WIRP) Monitor.

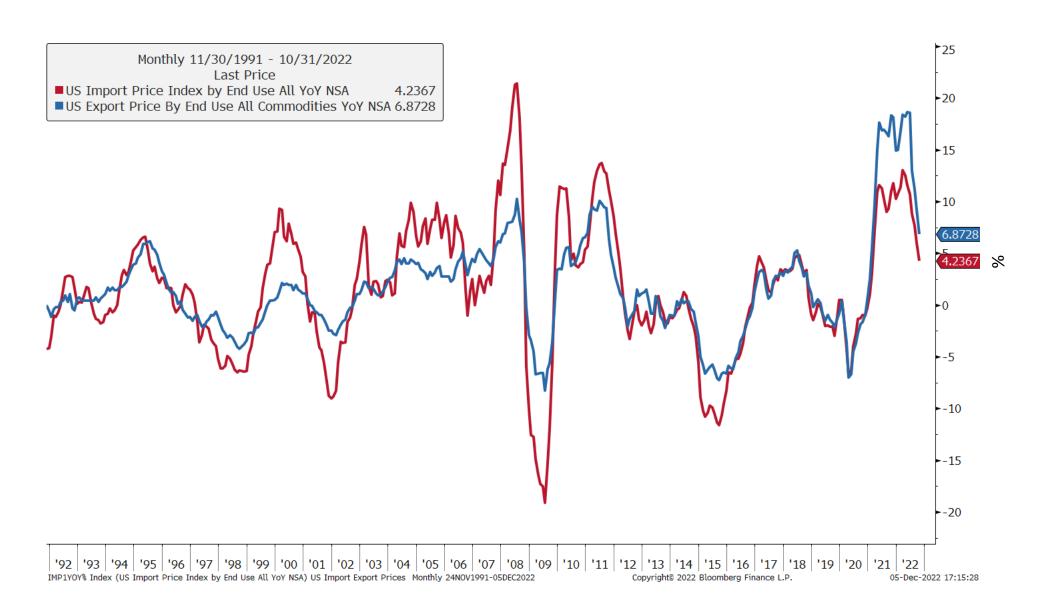
Terminal Rate Peaked at 5.17% in Early November





Export and Import Prices (YoY)



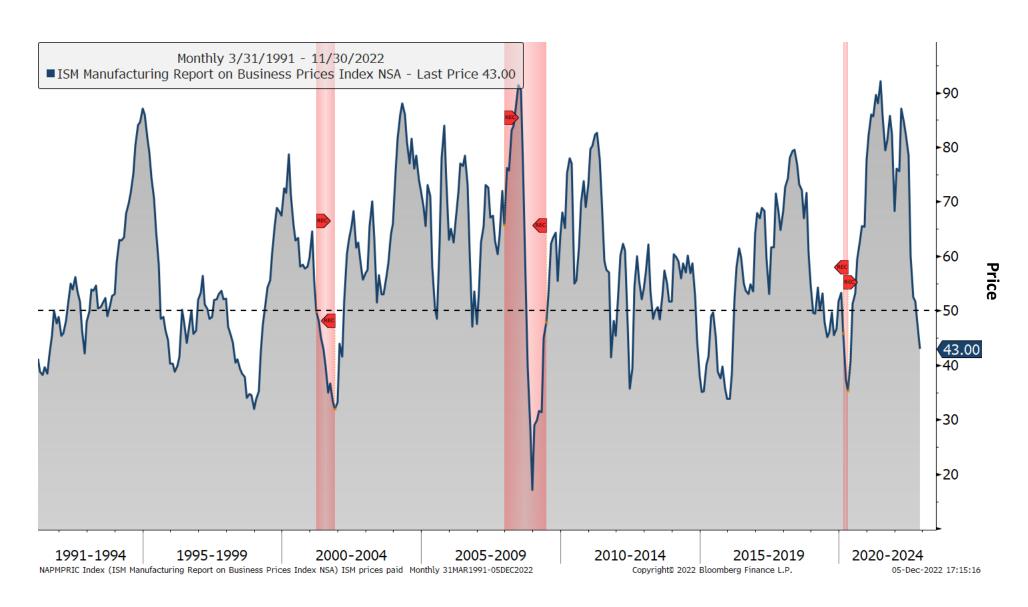


Source: Bloomberg, DoubleLine

NSA = Non-Seasonally Adjusted. YoY = Year-over-year. You cannot invest directly in an index.

ISM Manufacturing Prices Paid Index





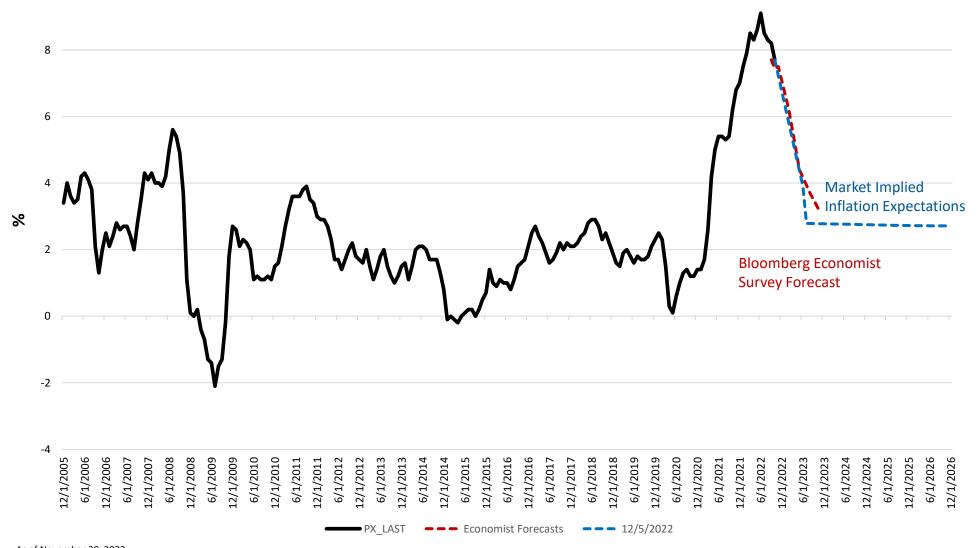
Source: Bloomberg, DoubleLine

ISM Manufacturing Index is considered a key economic indicator reflecting the demand for products by measuring ordering activity. You cannot invest directly in an index. Red shaded areas indicate recessionary periods.

U.S. Headline CPI (YoY) and Expected Inflation Over Time



U.S. CPI YoY and Inflation Swap Curve and Forecasts



As of November 30, 2022 Source: Bloomberg, DoubleLine

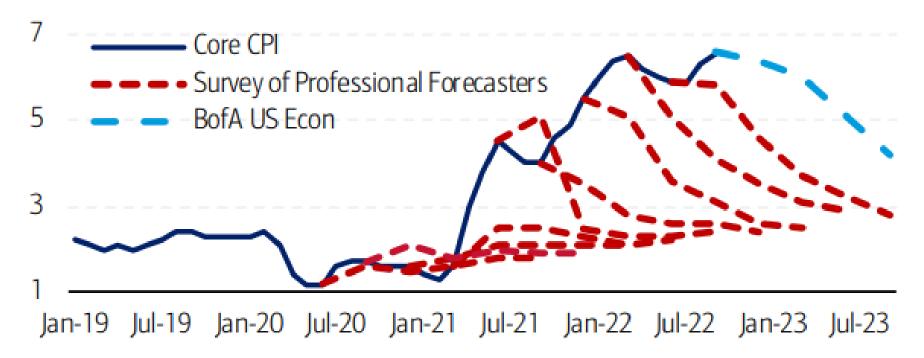
CPI = Consumer Price Index is the weighted average price for a basket of consumer goods and services. YoY = year-over-year.

BofA: Forecasters Consistently Expected a Rapid Return to 2% Inflation



Exhibit 5: Core CPI, survey measures of expected CPI, BofA forecast (%)

Forecasters have consistently estimated a rapid return towards 2% inflation



Bloomberg Commodity Index





Source: Bloomberg, DoubleLine

BCOM = Bloomberg Commodity Index measures a basket of broadly diversified commodity futures. You cannot invest directly in an index. Red shaded areas indicate recessionary periods.

Gold Spot Price

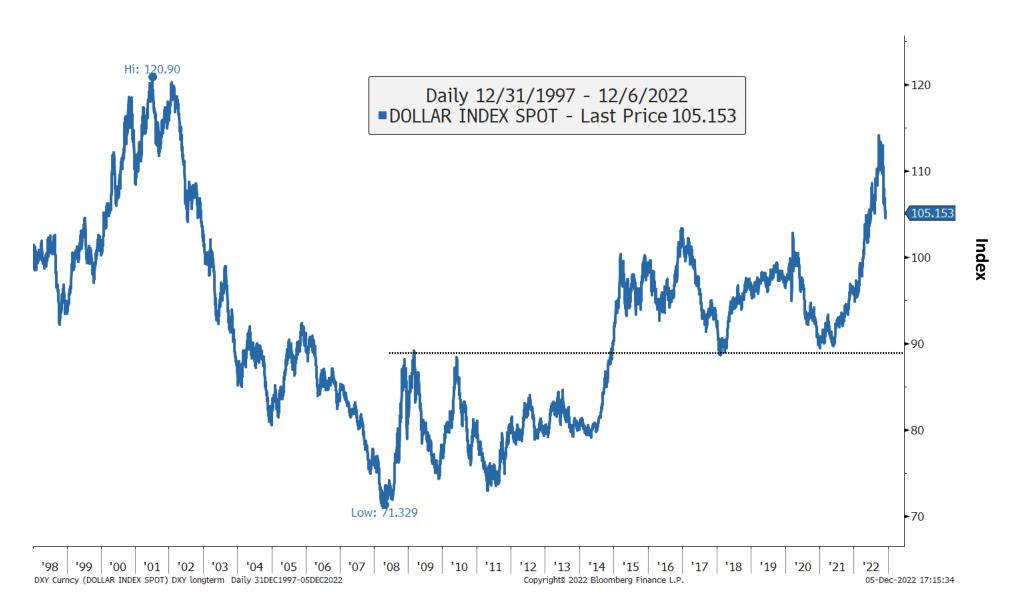




Source: Bloomberg, DoubleLine Gold spot price in troy ounces. SMAVG: moving average.

U.S. Dollar (DXY)



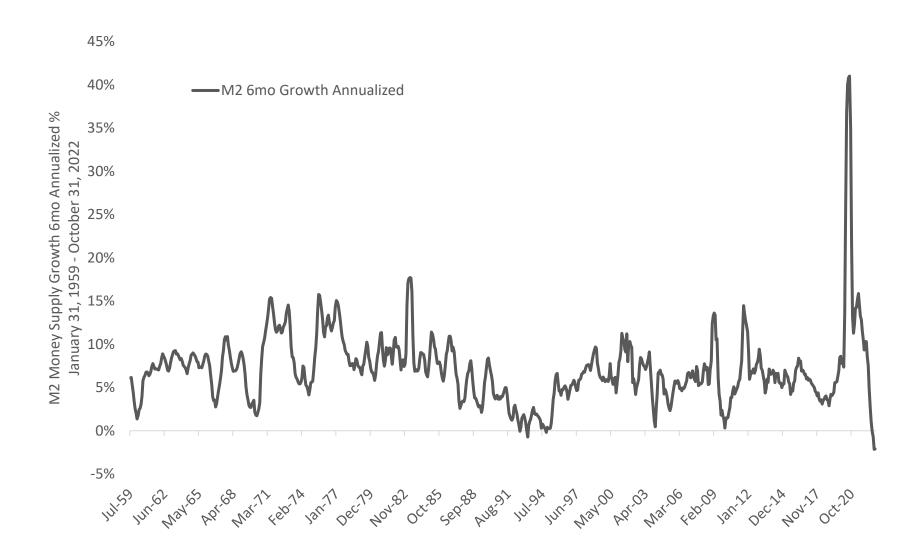


Source: Bloomberg, DoubleLine

DXY: An index of the U.S. dollar vs. a basket of currencies. You cannot invest directly in an index.

M2 Growth



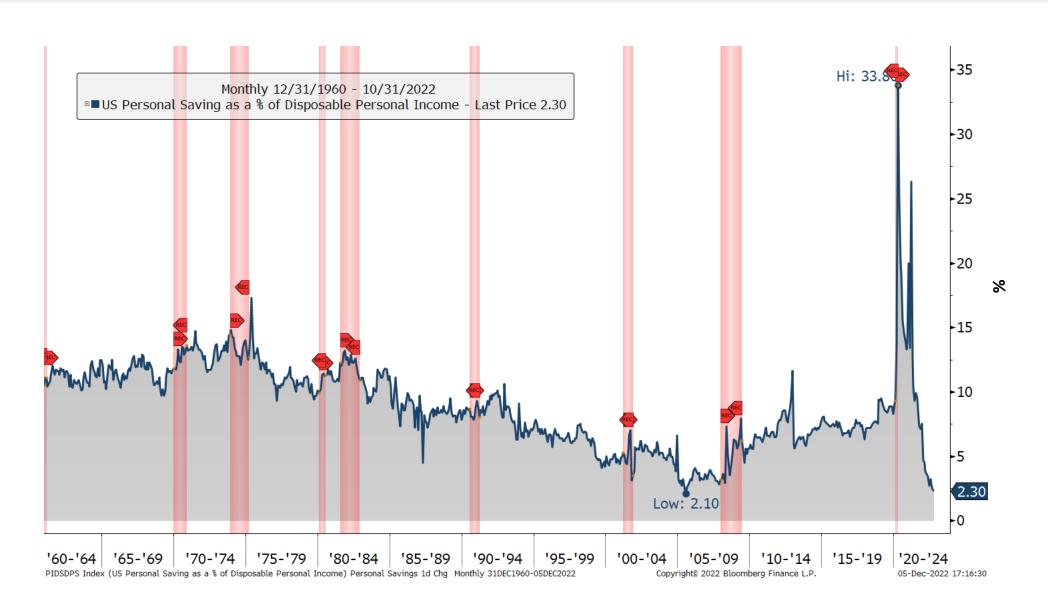


Source: Bloomberg, DoubleLine

M2 = Measures of the U.S. money stock that includes M1 (currency and coins held by non-bank public, checkable deposits, travelers checks) plus savings deposits, including money market deposit accounts, and retail money market mutual funds.

U.S. Savings Rate



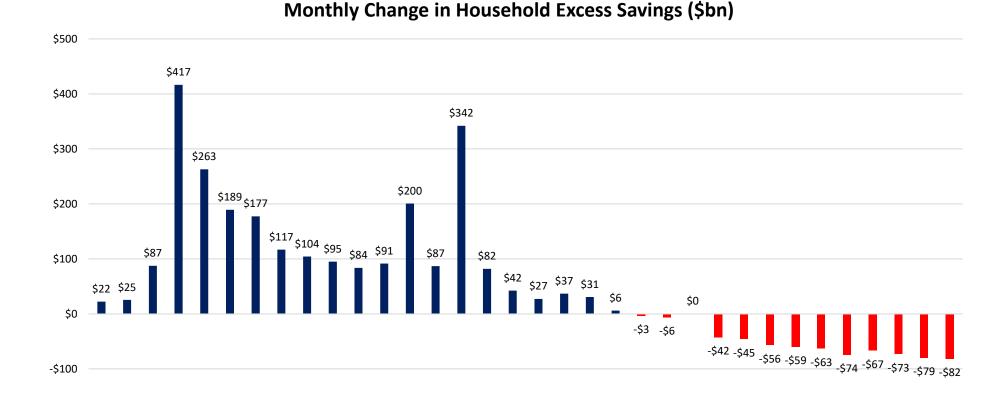


Source: Bloomberg, DoubleLine. Red shaded areas indicate recessionary periods.

Monthly Change in Excess Savings



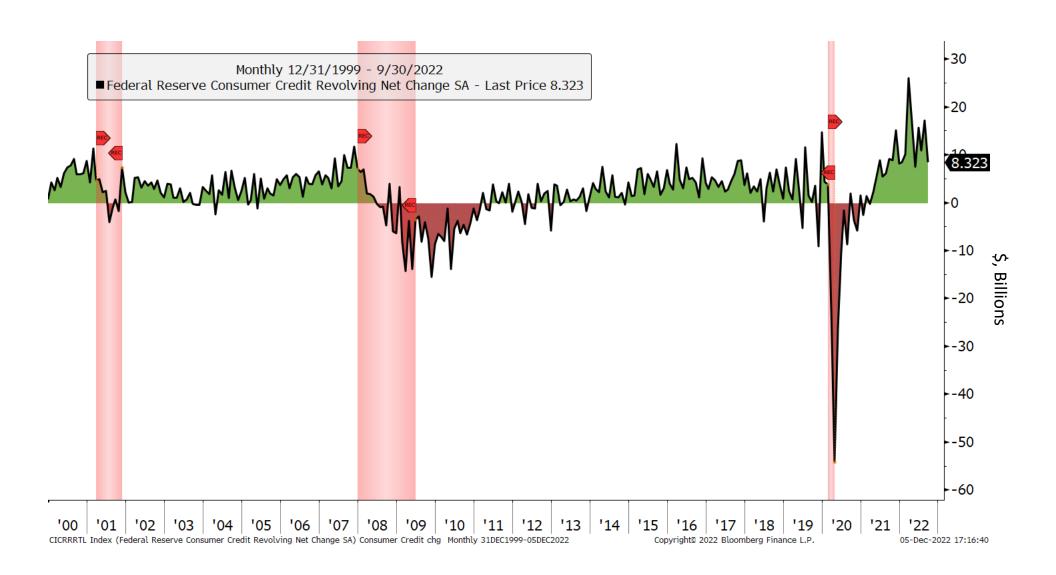
• Lower savings rates have forced households to drawdown on excess savings in 2022.



-\$200

Consumer Credit (Revolving) - Net Monthly Change

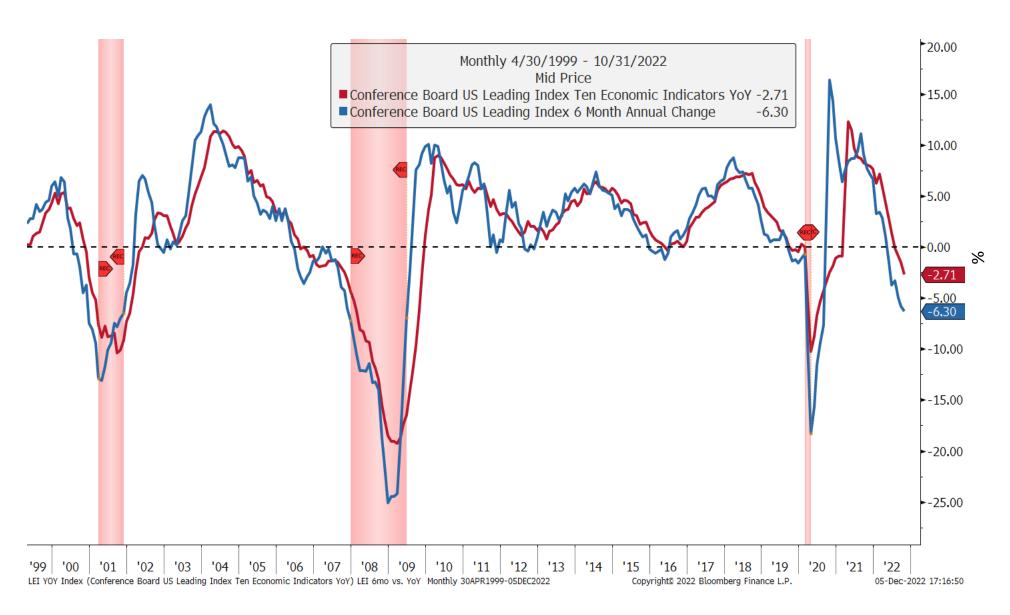




Source: Bloomberg, DouubleLine Red shaded areas indicate recessionary periods. SA = Seasonally Adjusted.

Leading Economic Indicator (YoY) and 6-Mo. Annualized





Source: DoubleLine, Bloomberg

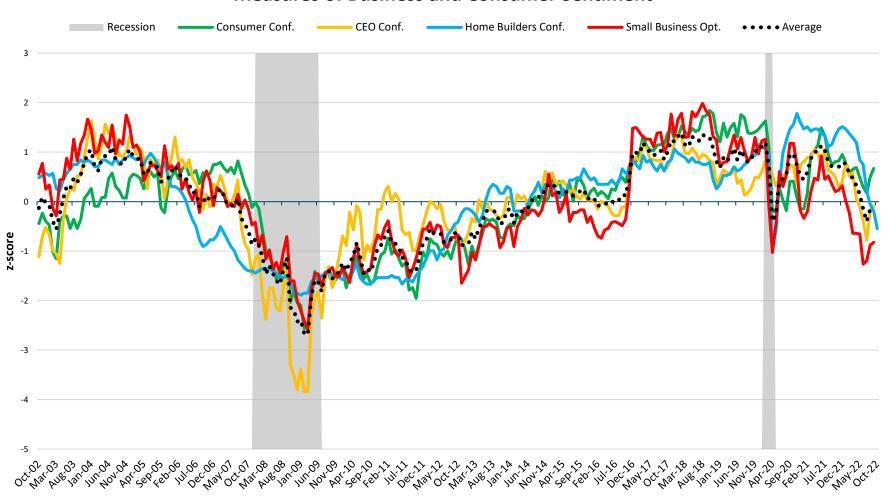
Red shaded areas indicate recessionary periods. LEI = Leading Economic Indicators. You cannot invest directly in an index.

Measures of U.S. Business and Consumer Sentiment

Normalized based on z-scores since Oct 2002



Measures of Business and Consumer Sentiment



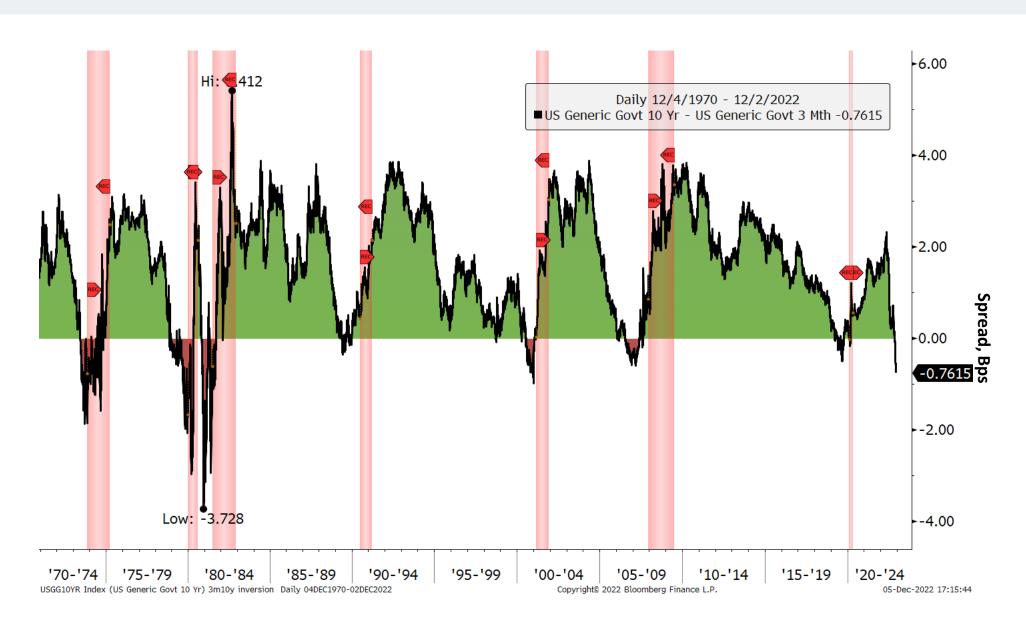
Source: Bloomberg, DoubleLine

Note: Consumer confidence = Conference Board Consumer Confidence

ISM Manufacturing Index is considered a key economic indicator reflecting the demand for products by measuring ordering activity. You cannot invest directly in an index. Gray shaded areas indicate recessionary periods..

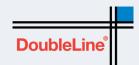
10yr UST - 3mo UST Curve Inversion and Recessions



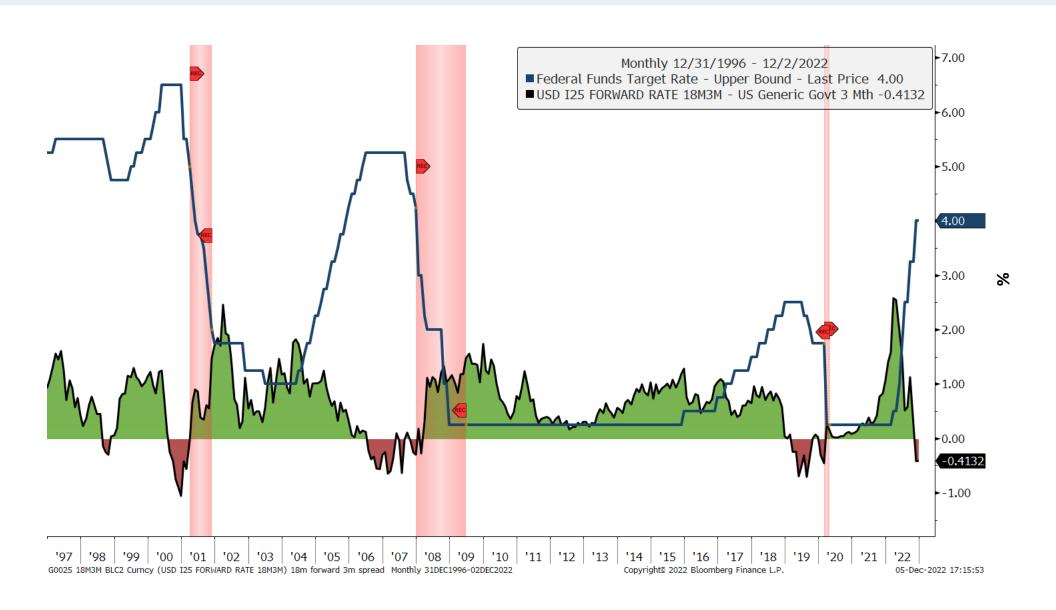


Source: Bloomberg, DoubleLine Red shaded area indicate recessionary periods

3m T-Bill Yield (18 m forward - 3m T-Bill Yield)



Looks like inversion coincides with terminal rate in the hiking cycle, not an immediate cut

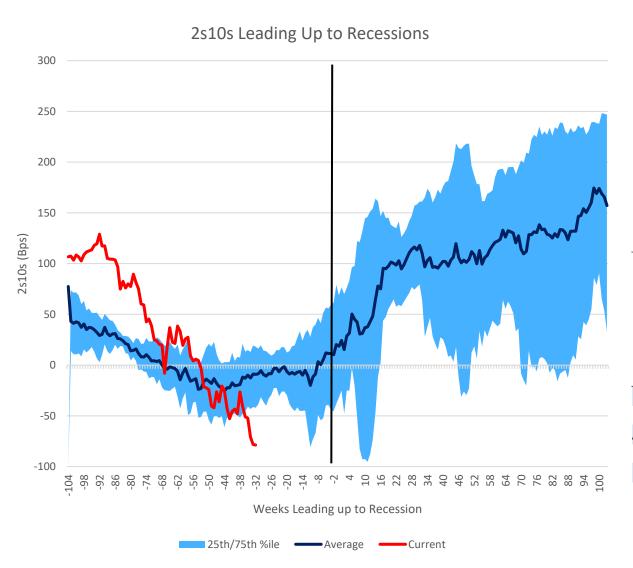


Source: Bloomberg, DoubleLine Red Shaded area indicate recessionary periods

2s10s and Recessions

January 1, 1978 to December 02, 2022 (excludes 1981 recession)





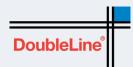
The 2s10s curve inverted back in March of this year and has since flattened more dramatically.

	Weeks Before	Date of
Date of	Start of	Proceeding
2s10s Inversion	Recession	Recession
8/18/1978	72	1/1/1980
12/16/1988	80	7/1/1990
4/24/1998		FALSE
2/4/2000	56	3/1/2001
12/30/2005	100	12/1/2007
8/23/2019	23	2/1/2020
3/31/2022	-29	7/1/2023 (F)
Average	66	
Median	72	
Average (ex-2020)	77	
Median (ex-2020)	76	
Max	100	

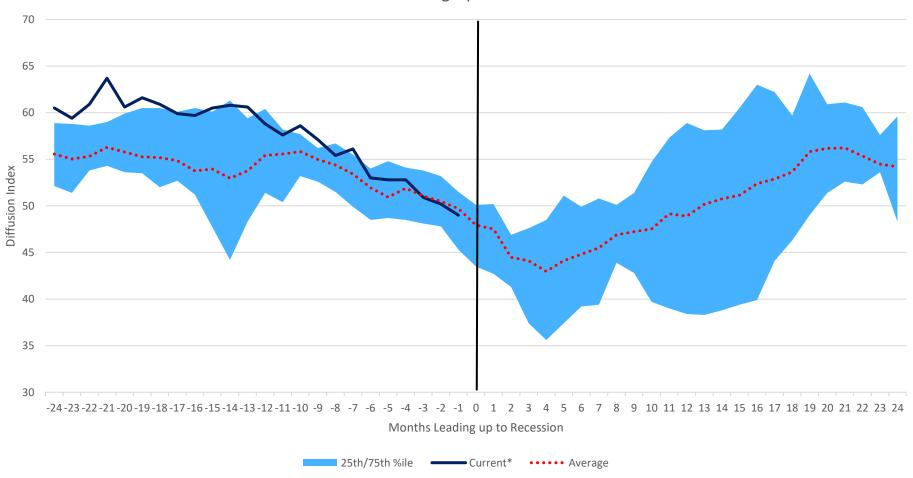
Source: Bloomberg; DoubleLine

^{*}Assumes recession starts 66 weeks from 3/31/22

ISM PMI Leading Up to Recessions







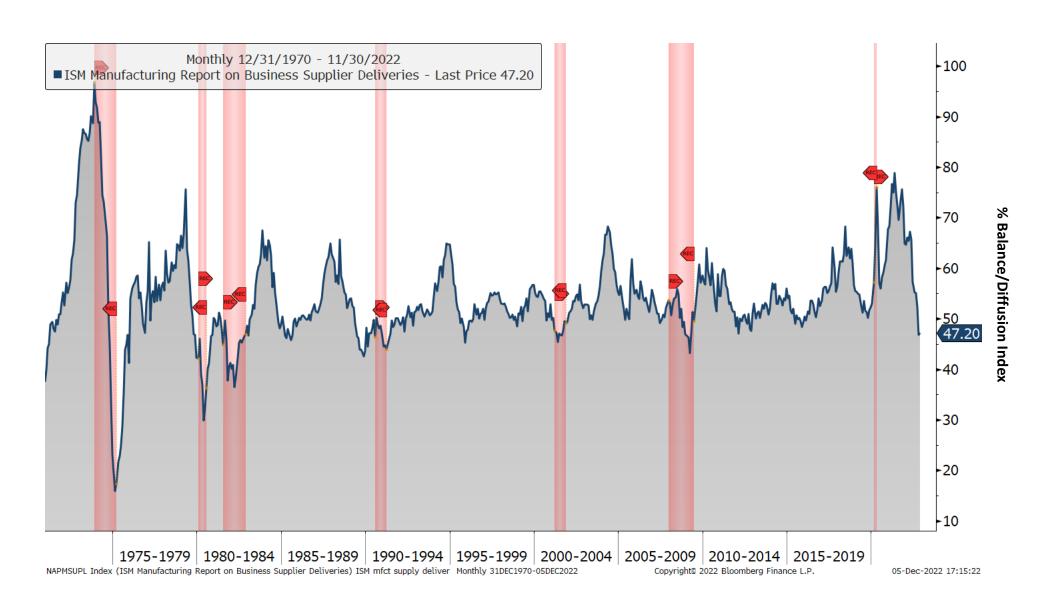
Source: Bloomberg, DoubleLine. December 31, 1947, to November 30, 2022

ISM = Institute of Supply Management. Purchase Manager's Index (PMI) is an indicator of the economic health of the manufacturing sector and is based on: new orders, inventory levels, production, supplier deliveries and the employment environment. You cannot invest directly in an index.

^{*}Assumes recession begins in 1 month.

ISM Manufacturing Supplier Delivery Delays



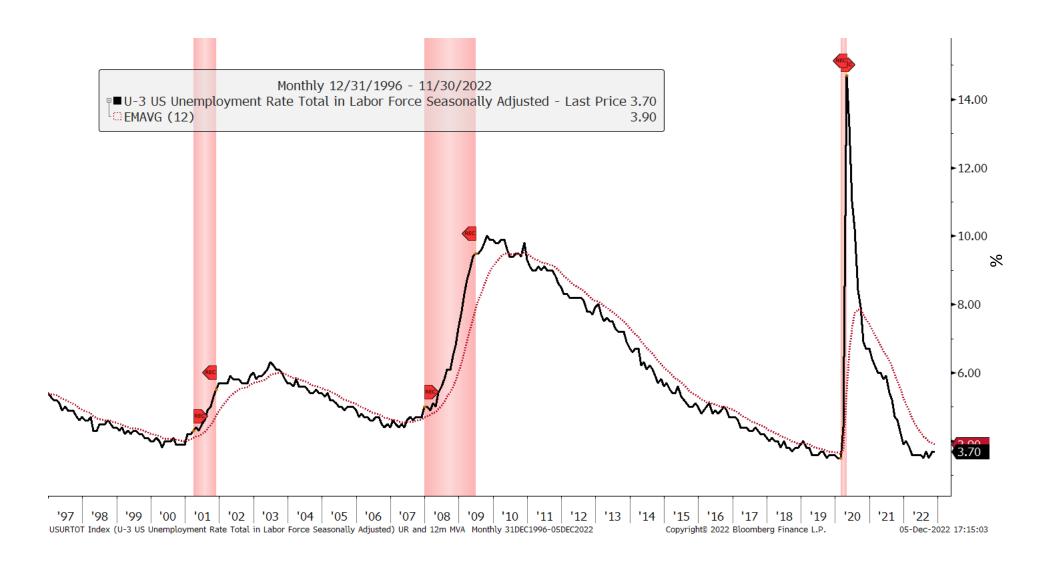


Source: Bloomberg, DoubleLine

ISM Manufacturing Index is considered a key economic indicator reflecting the demand for products by measuring ordering activity. You cannot invest directly in an index. Red shaded areas indicate recessionary periods.

U.S. Unemployment Rate vs. 12 Month Moving Average and Recessions





Unemployment Rate and Consensus Forecasts

December 1, 1989 to October 31, 2022 Forecast through September 1, 2023



Unemployment Rate and Bloomberg Consensus Forecasts (%)

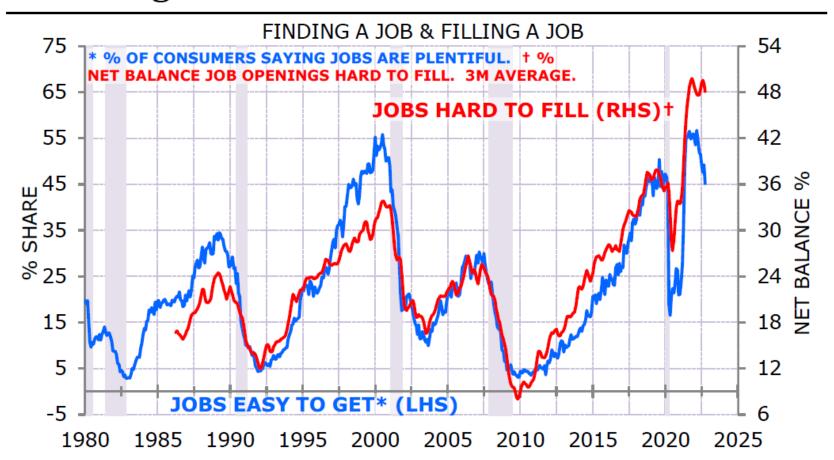


Source: Bloomberg, DoubleLine

Inflecting U.S. Labor Market Indicators

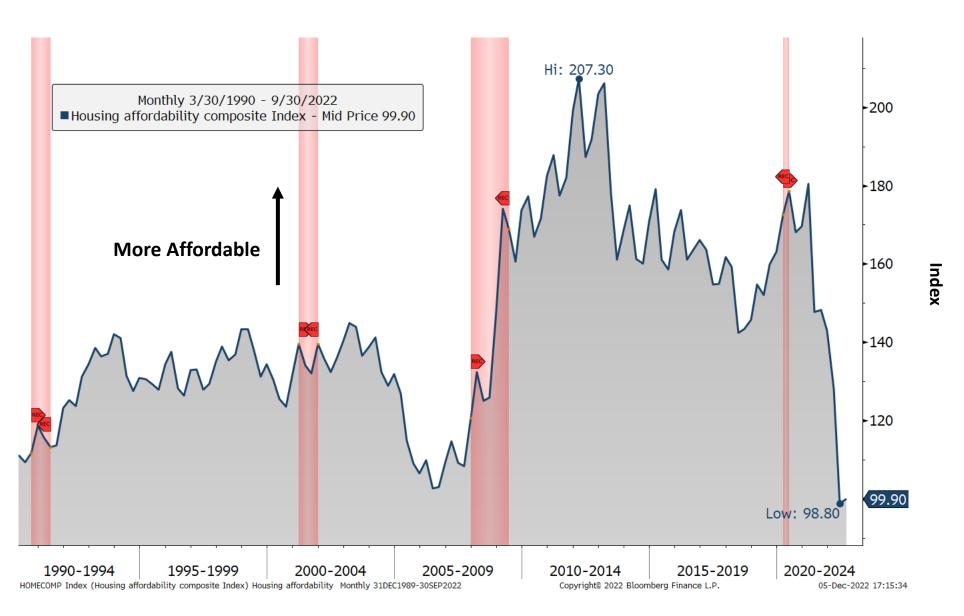


Inflecting US labour market indicators



Housing Affordability





Source: Bloomberg, DoubleLine

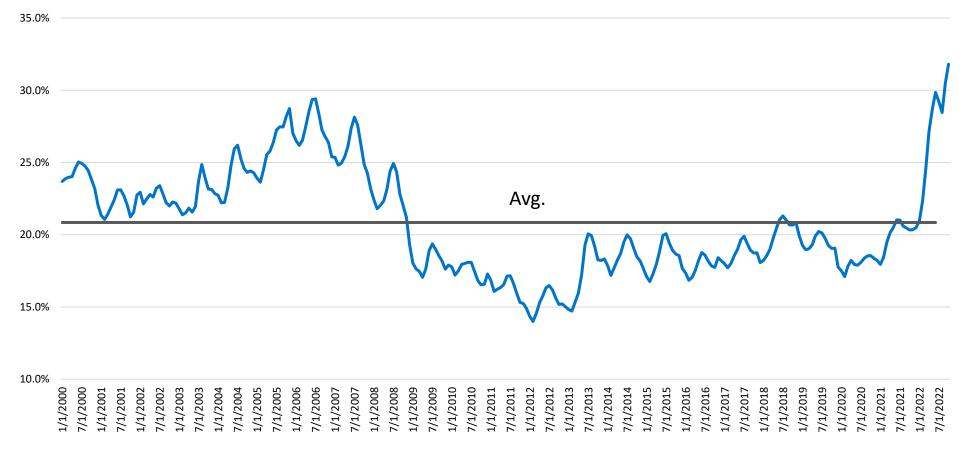
You cannot invest directly in an index. Red shaded areas indicate recessionary periods.

Average Mortgage Payment as % Median Household Income



• Mortgage payment based on existing home sales median price, 30y mortgage rate based on Bankrate.com, assumes 20% down payment. Median household income from U.S. Census.

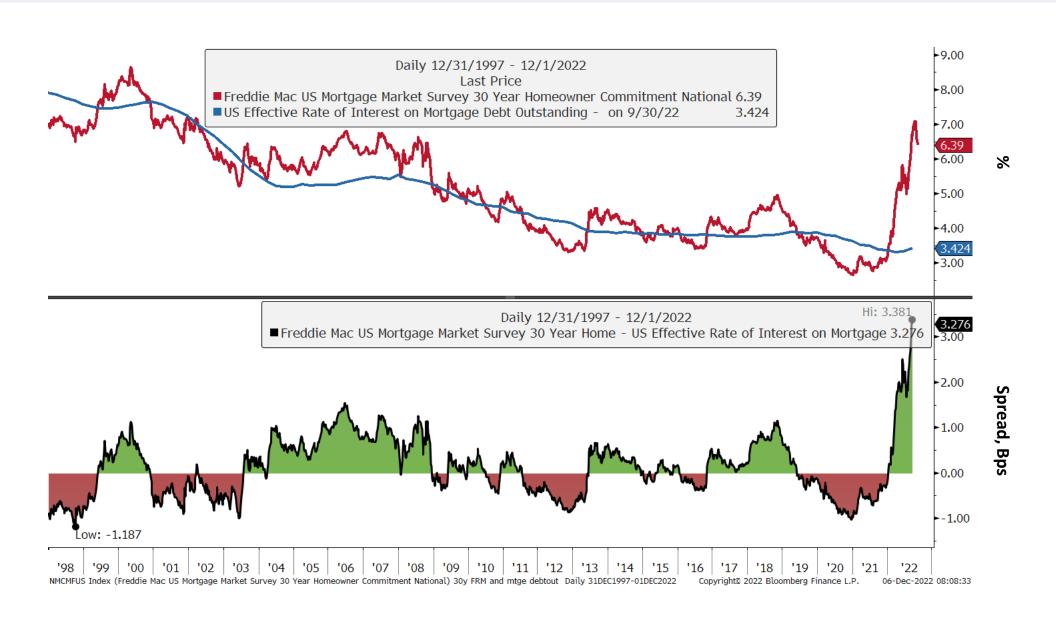
Average Mortgage Payment as % Median Household Income



Source: Bloomberg, DoubleLine. January 1, 2000 through October 31, 2022

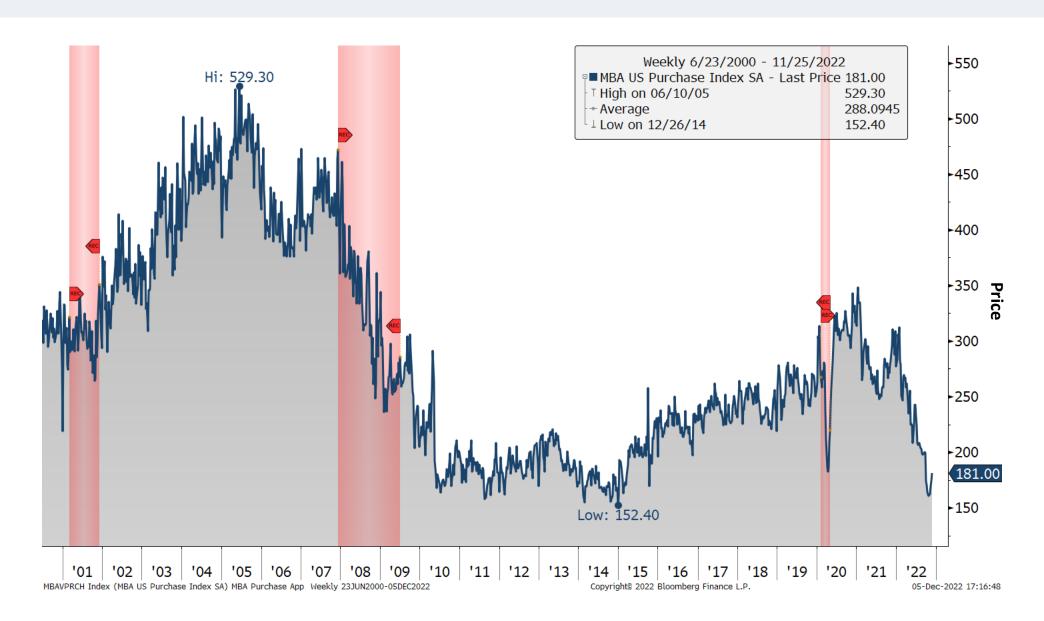
30y Fixed Mortgage Spot Rate and Effective Rate on Mortgage Debt Outstanding





MBA U.S. Mortgage Purchase Index



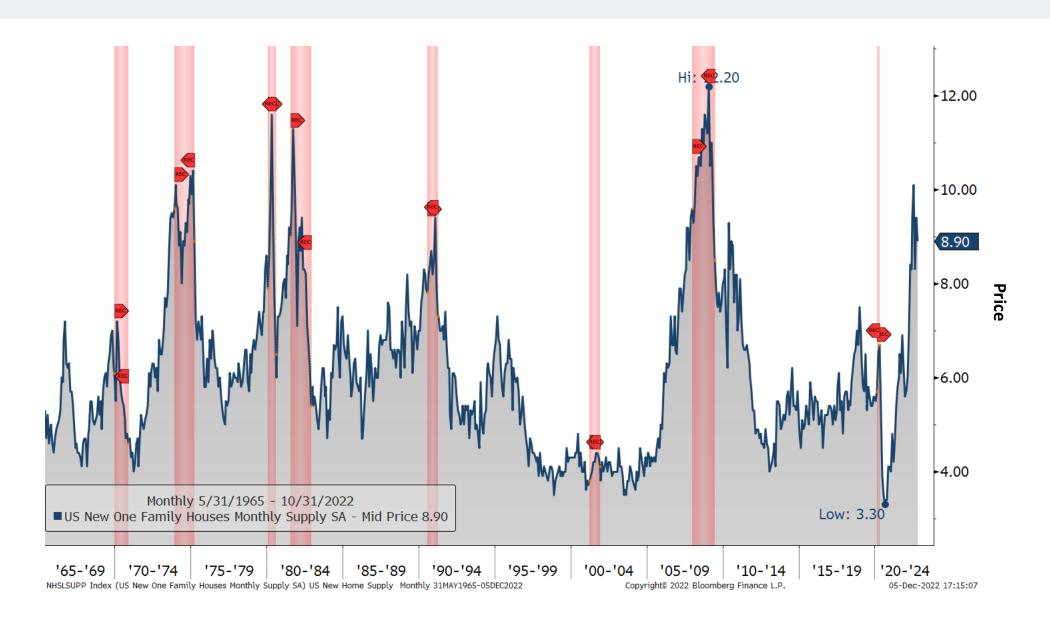


Source: Bloomberg, DoubleLine

Mortgage Purchase Index is the benchmark that is used to update the interest rate in variable-rate mortgages. SA = Seasonally Adjusted. You cannot invest directly in an index. Red shaded areas represent recessionary periods.

New Home Sales Months Supply (in # months)





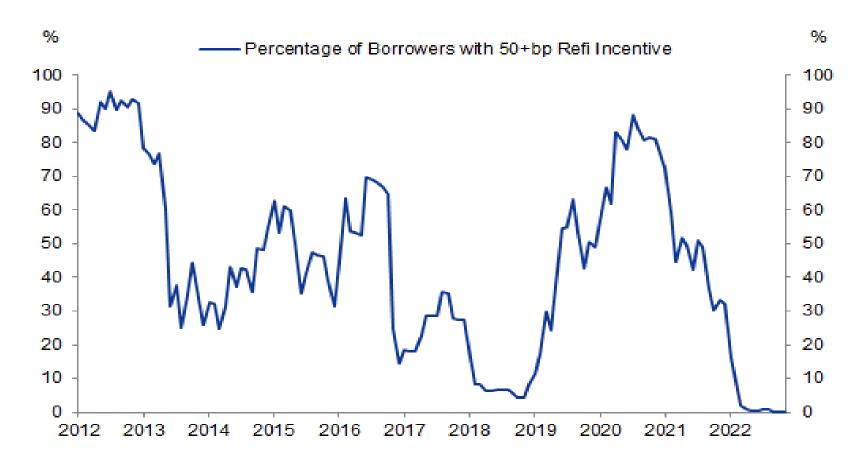
Source: Bloomberg, DoubleLine. Red shaded areas indicate recessionary periods.

Mortgage Borrowers Refinancing



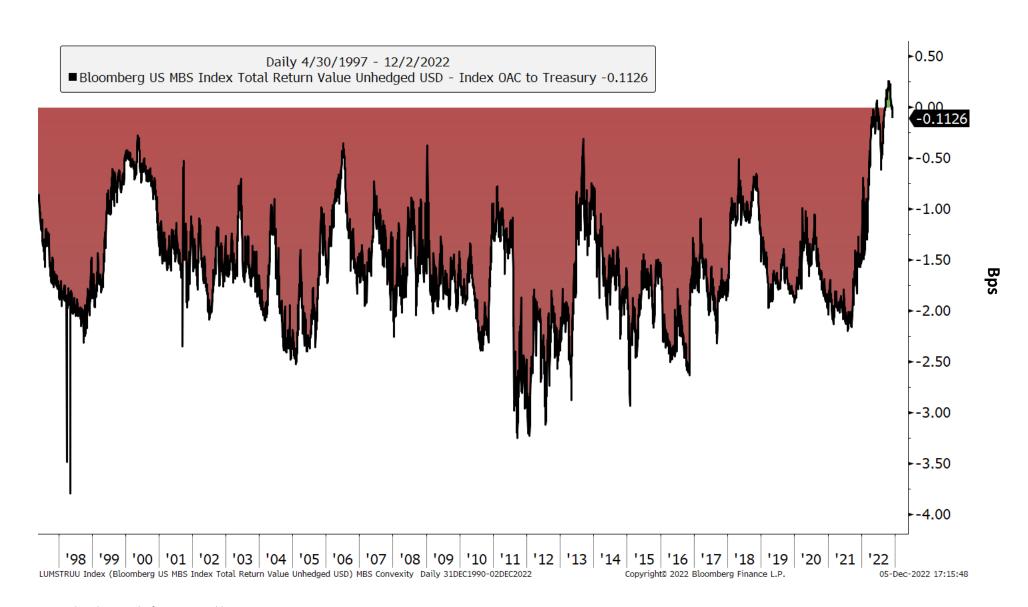
Exhibit 56: 0.1% of mortgage borrowers are in-the-money for refinancing

Percentage of outstanding 30-year conventional mortgages with at least a 50bp incentive to refinance



U.S. MBS Index Convexity



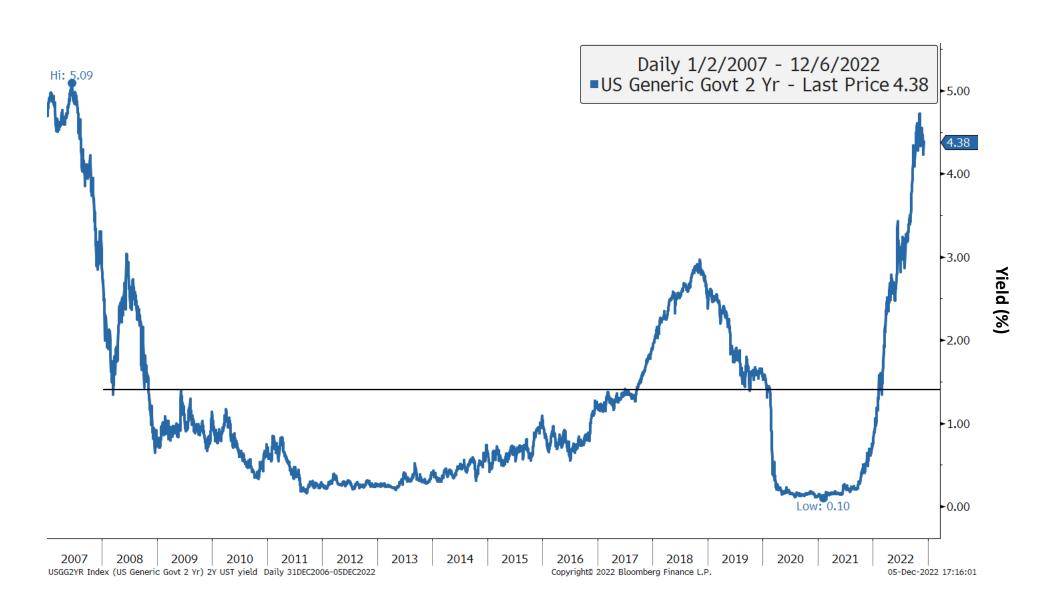


Source: Bloomberg, Bank of America, DoubleLine

Please see Appendix for Bloomberg Agency MBS index definition. You cannot invest directly in an index. Convexity = Measures the relationship between bond prices and yields showing how the bond's duration changes with interest rates.

U.S. 2-Year Treasury

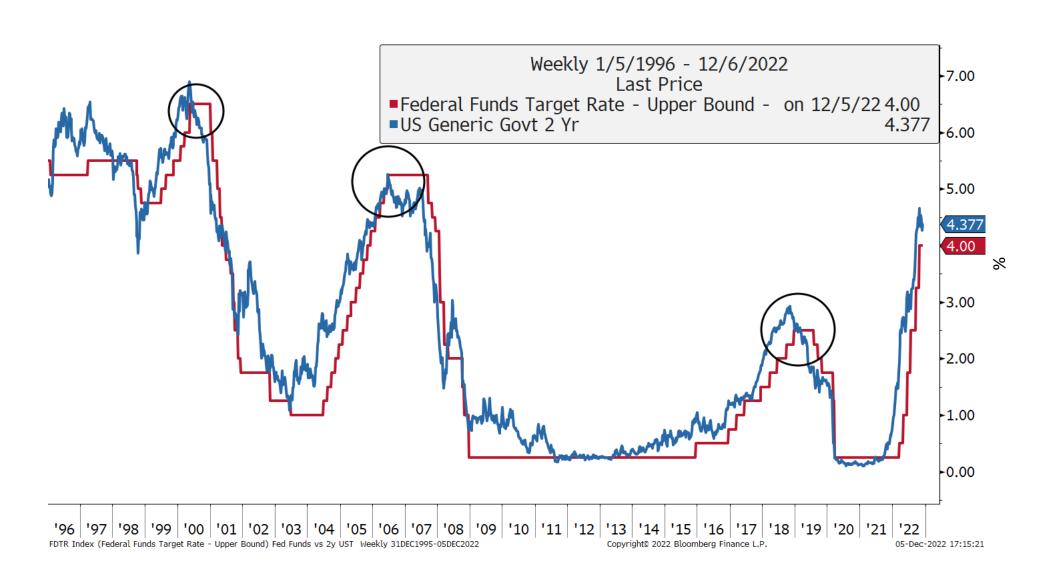




Source: Bloomberg, DoubleLine GT02: U.S. 2-year Treasury bond

Replace FOMC with 2-Year UST





Source: Bloomberg, DoubleLine FOMC= Federal Open Market Committee

U.S. 10-Year Yields





Source: Bloomberg, DoubleLine

Copper-Gold Ratio vs. UST 10-Year Yield



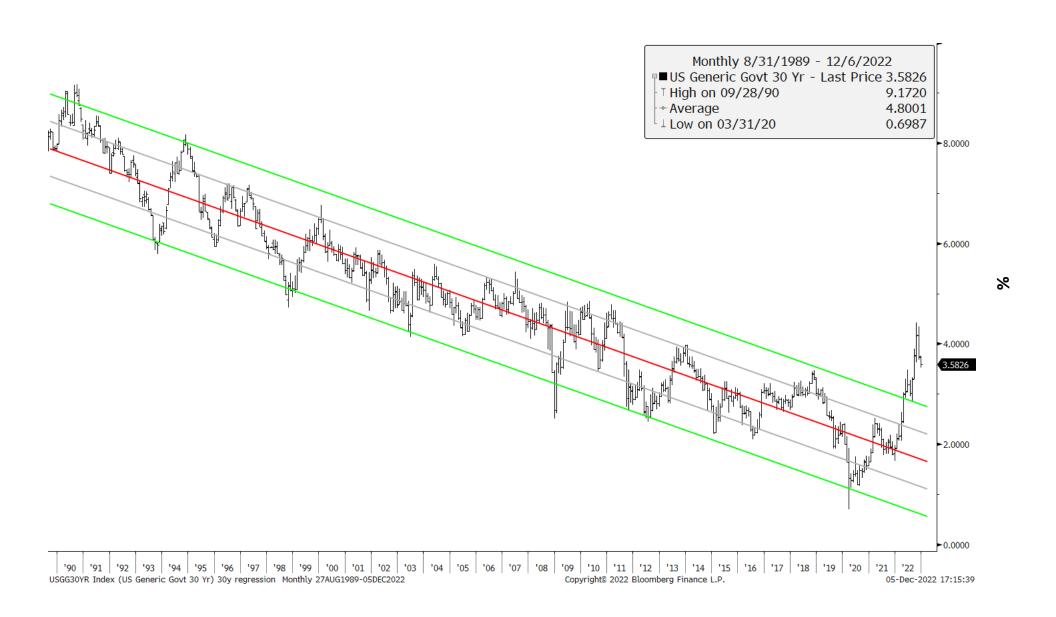


Source: Bloomberg, DoubleLine

Copper is the copper contract price. Copper is the world's third-most widely used metal, after iron and aluminum, and is primarily used in highly cyclical industries such as construction and industrial machinery manufacturing. Gold is the spot price in troy ounces.

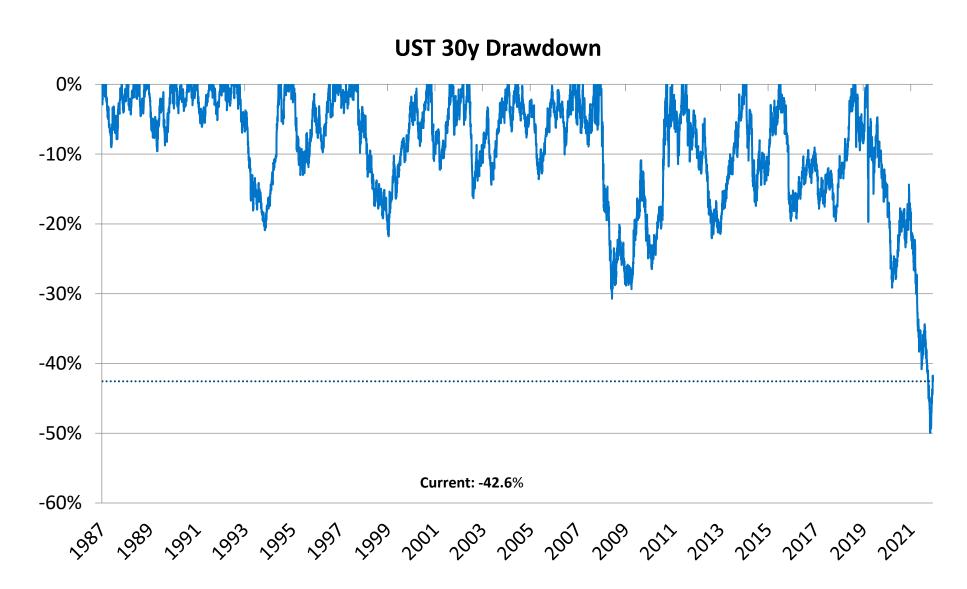
U.S. Rates: 30-year U.S. Treasury Yield





30-year U.S. Treasury Drawdown



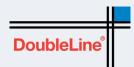


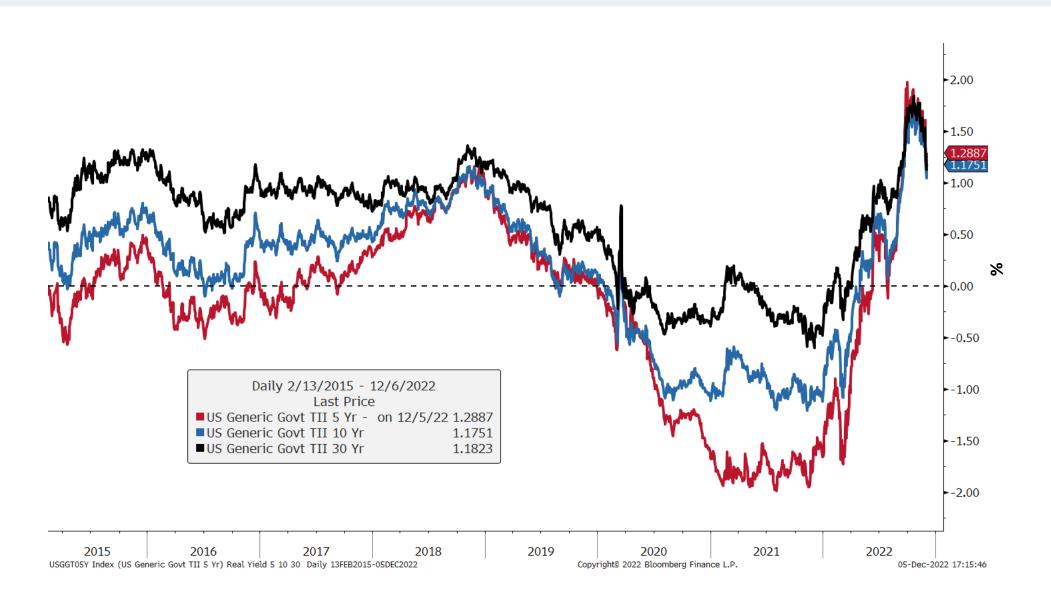
Source: Bank of America-Merrill Lynch, DoubleLine

As of December 05, 2022

Drawdown = Measures how much an investment is down form the peak before it recovers back to peak.

U.S. Real Yields (Based on TIPS)

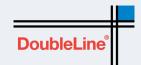


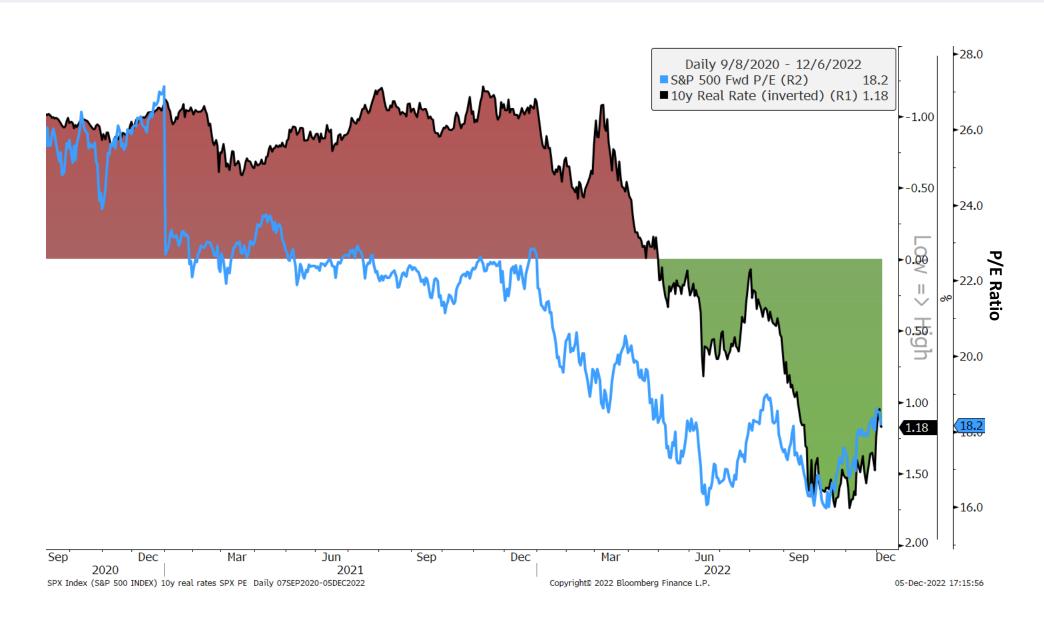


Source: Bloomberg, DoubleLine

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.

S&P 500 Forward Price-to-Earnings Ratio and **10y Real Yield (Inverted)**

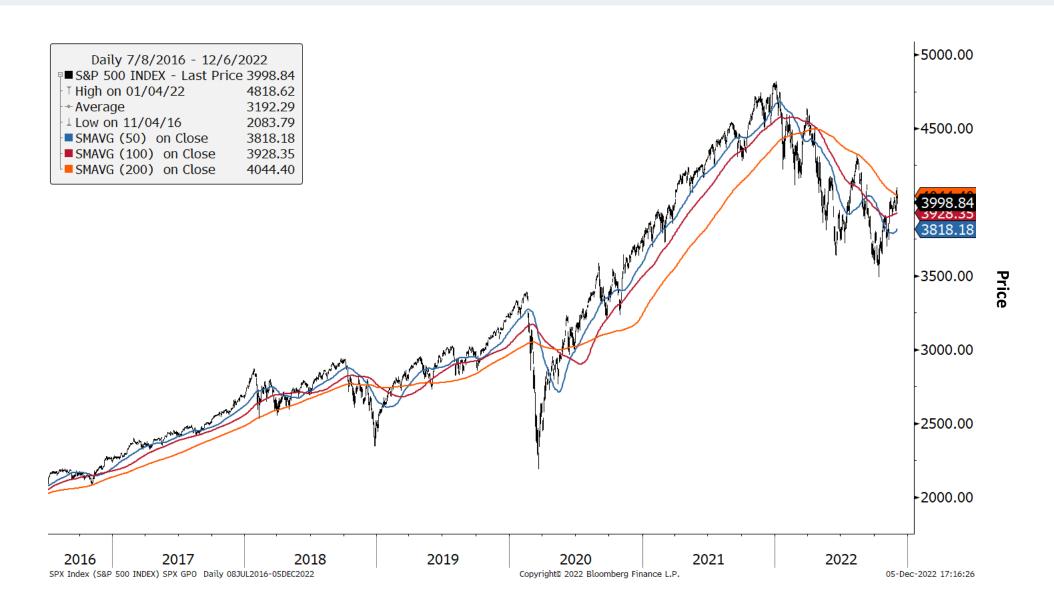




Source: Bloomberg; DoubleLine

Please see Appendix for index definition. You cannot invest directly in an index.



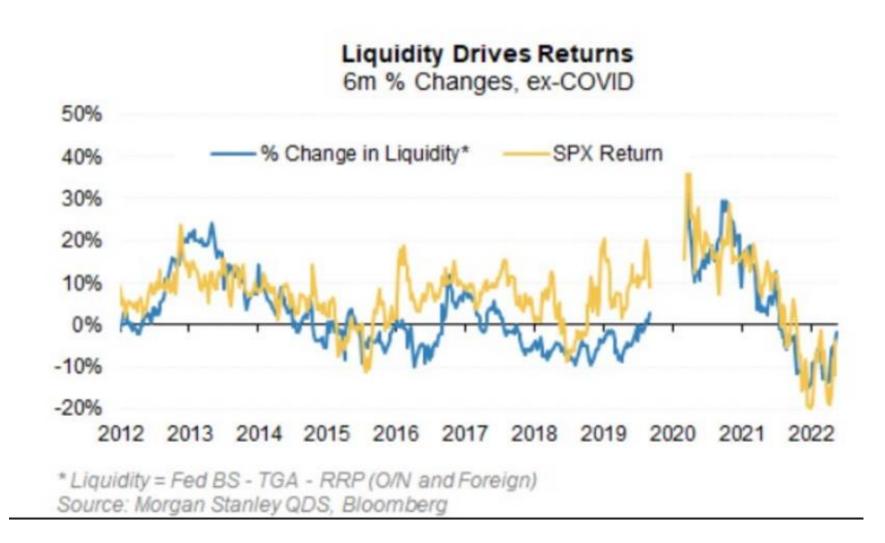


Source: Bloomberg, DoubleLine

Please see the Appendix for index definitions. You cannot invest directly in an index.

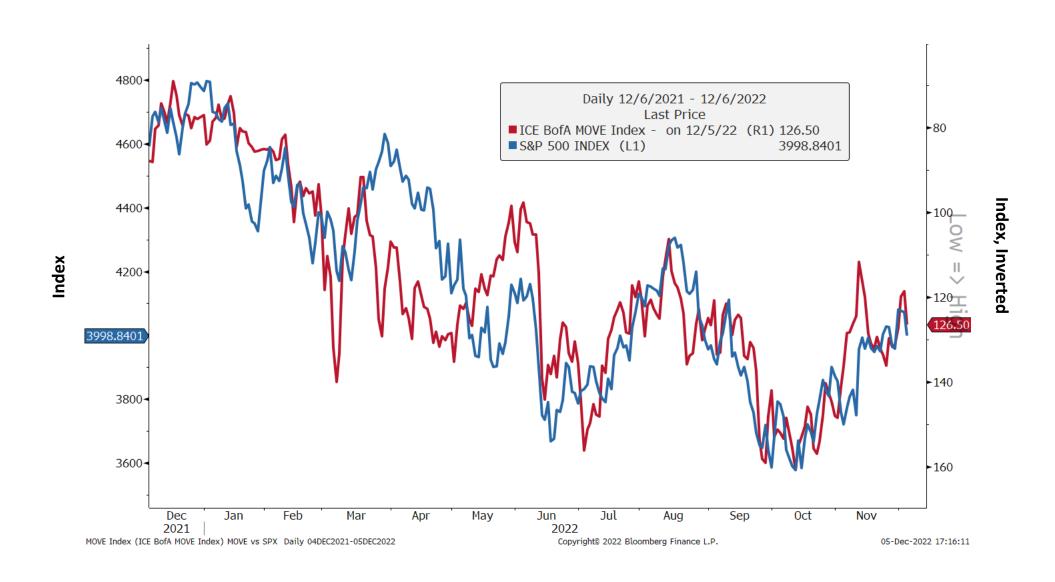
Liquidity and S&P 500 (SPX)





S&P Tracking Inverted MOVE Index





S&P 500 Growth vs. Value

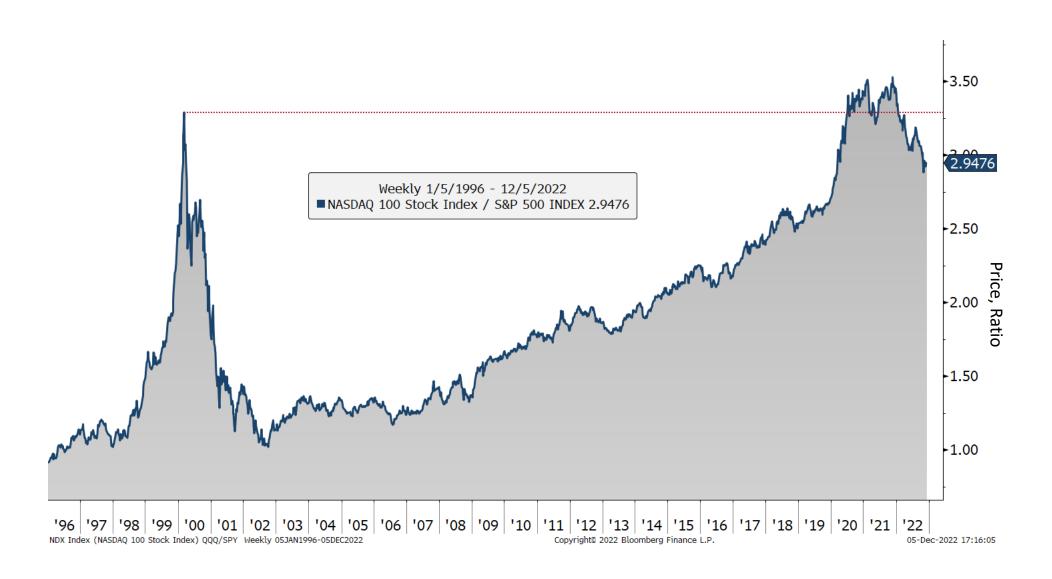




Source: Bloomberg, DoubleLine Red shaded areas indicate recessionary periods.

Nasdaq 100 Relative to S&P 500

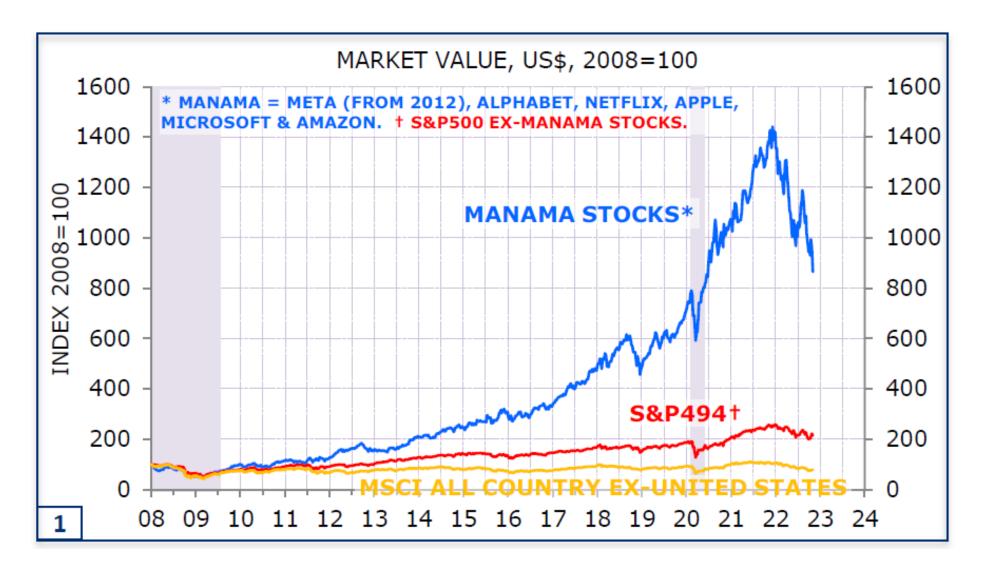




Source: Bloomberg, DoubleLine You cannot invest directly in an index.

S&P 500 Leaders





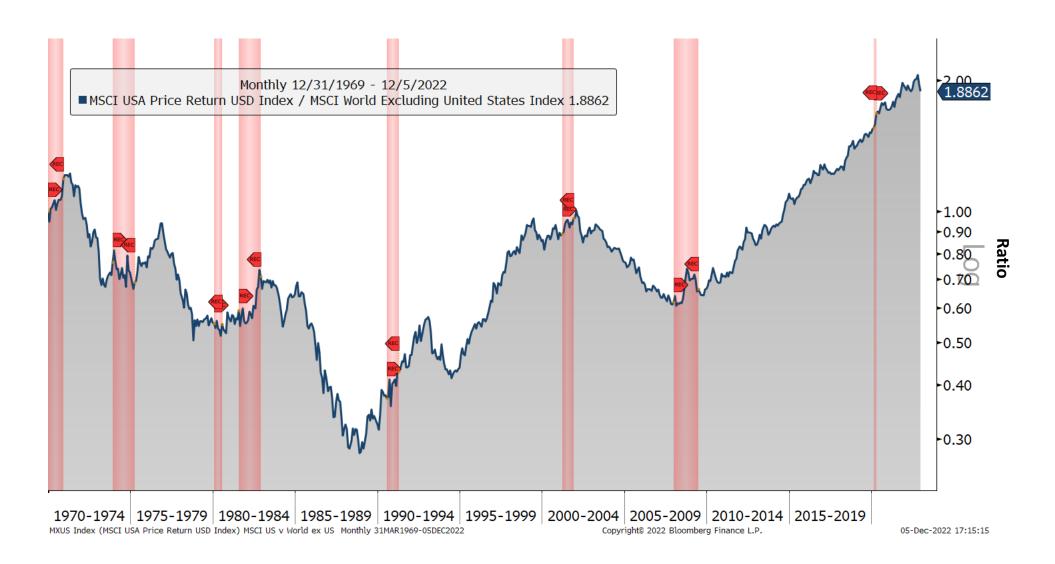
Source: Minack, MSCI, Bloomberg, NBER as of November 4, 2022.

S&P 500 Index is a market-capitalization weighted Index of the 500 largest U.S. publicly traded companies. You cannot invest directly in an index. MSCI AC Ex-US: Is a stock market index comprising of non-U.S. stocks from 23 developed markets and 26 emerging markets. DoubleLine Total Return owns 0% of Facebook, Apple, Alphabet, Amazon, Netflix or Microsoft as of December 6, 2022.

Shaded areas represent recessionary periods.

U.S. Equity Prices vs. Rest of World





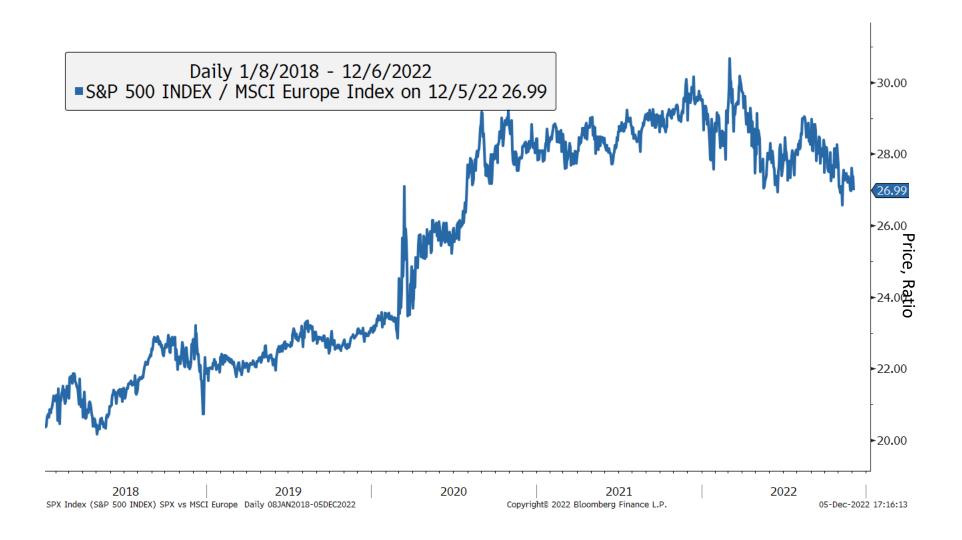
Source: Bloomberg, DoubleLine

MSCI USA Index is designed to measure the performance of the large- and mid-cap segments of the U.S. stock market. With 636 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the U.S. MSCI World Index ex-US captures large- and mid-cap representation across 23 developed markets (DM) countries. With 1,640 constituents, the index covers 85% of the free float-adjusted market capitalization in each country ex-U.S.

Red shaded areas indicate recessionary periods.

S&P 500/ MSCI Europe



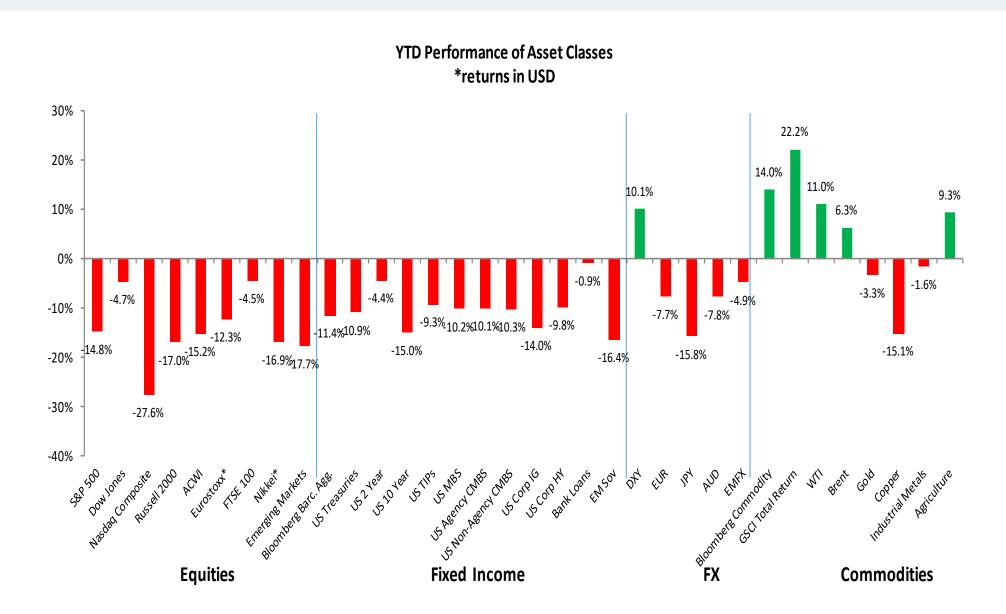


Source: Bloomberg, DoubleLine

S&P 500 is the stock market index that tracks the stocks of 500 large-cap U.S. companies. MSCI Europe Index This index is U.S. dollar denominated and represents the performance of large- and mid-cap equities across 15 developed countries in Europe. It covers approximately 85% of the free float-adjusted market capitalization in each country. You cannot invest directly in an index.

Cross Asset YTD Performance



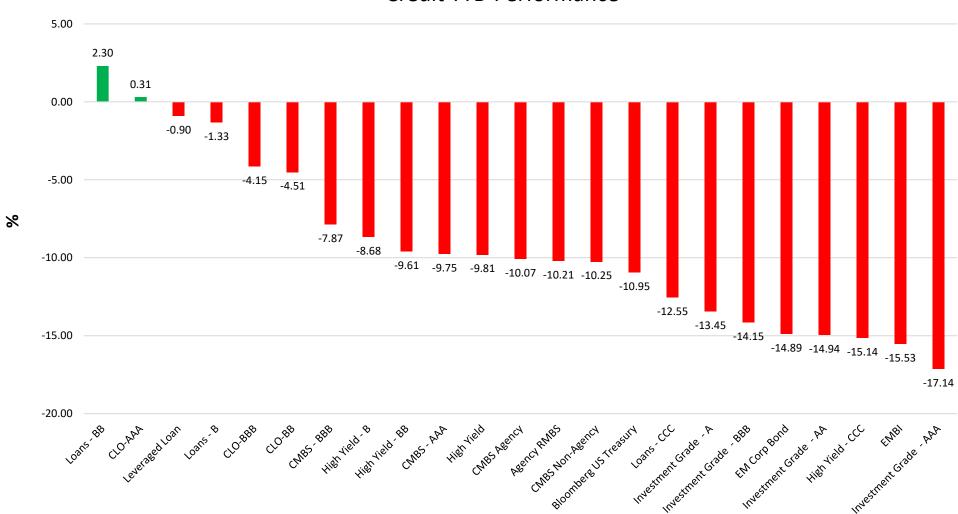


Source: Bloomberg, DoubleLine through December 5, 2022 Please see Appendix for Index definitions. You cannot invest directly in an index.

Credit Performance - YTD 2022



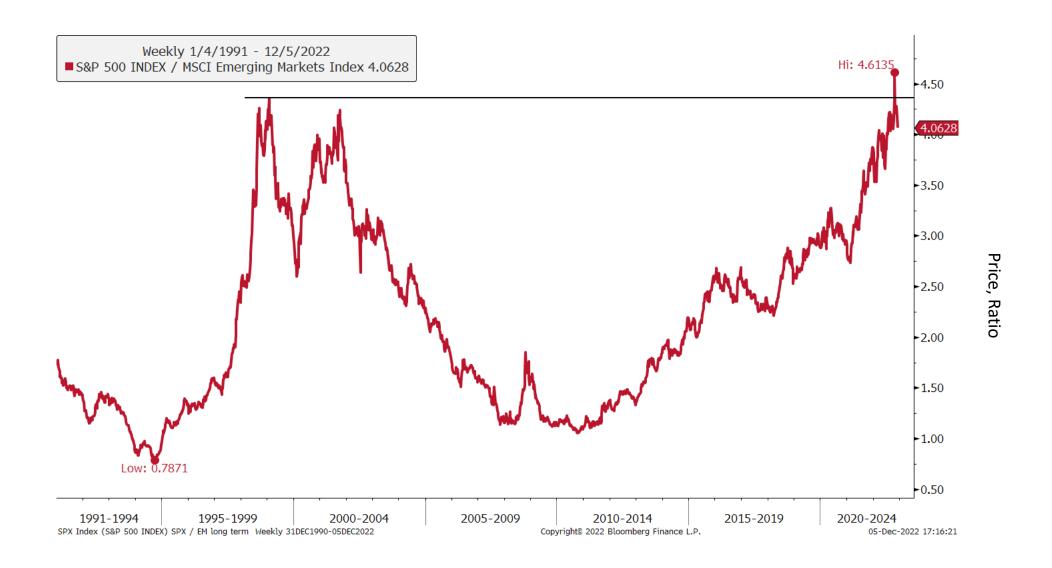




Source: Bloomberg, DoubleLine through December 2, 2022 Please see Appendix for Index definitions. You cannot invest directly in an index.

S&P 500 / MSCI Emerging Markets





Source: Bloomberg, DoubleLine

Please see the Appendix for index definitions. You cannot invest directly in an index.

JPM EMBI Global Diversified Spread and DXY

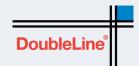


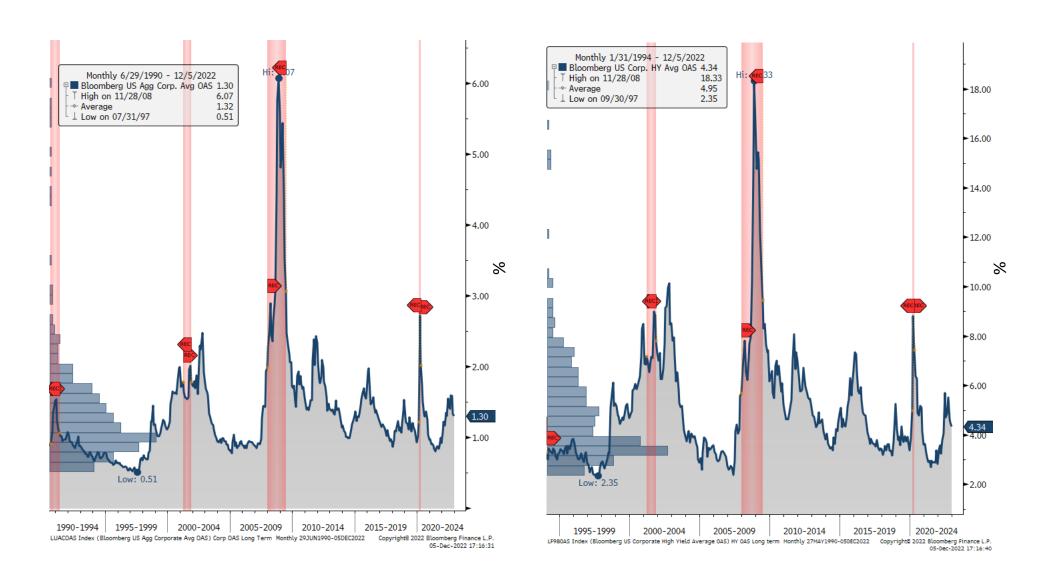


Source: Bloomberg, DoubleLine

Please see Appendix for index definitions. You cannot invest directly in an index.

U.S. Investment Grade and High Yield Spreads



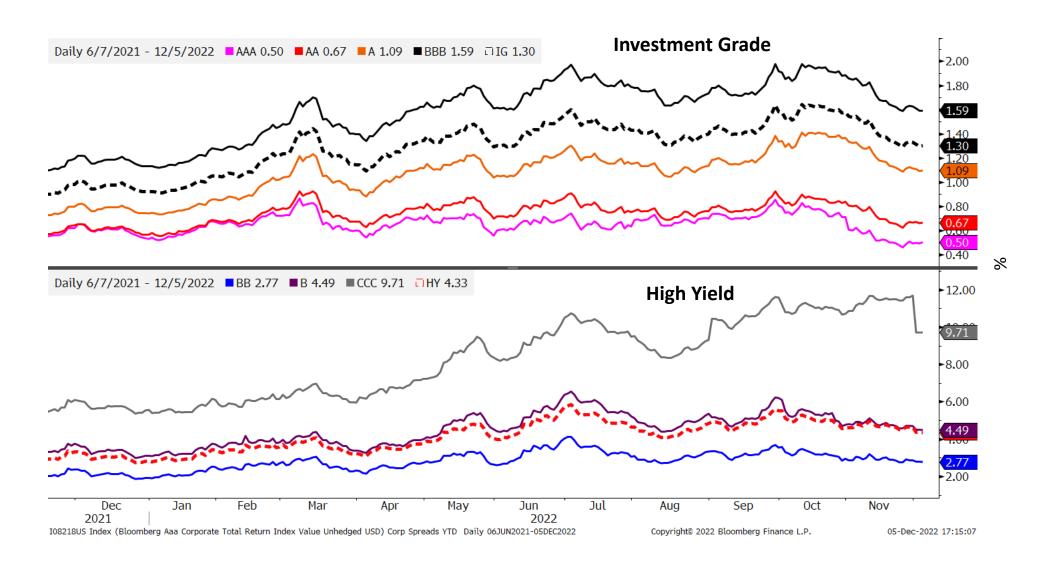


Source: Bloomberg, DoubleLine Red shaded areas indicate recessionary periods. You cannot invest directly in an index.

U.S. Corporate Credit Spreads by Rating

Bloomberg Corporate Indices



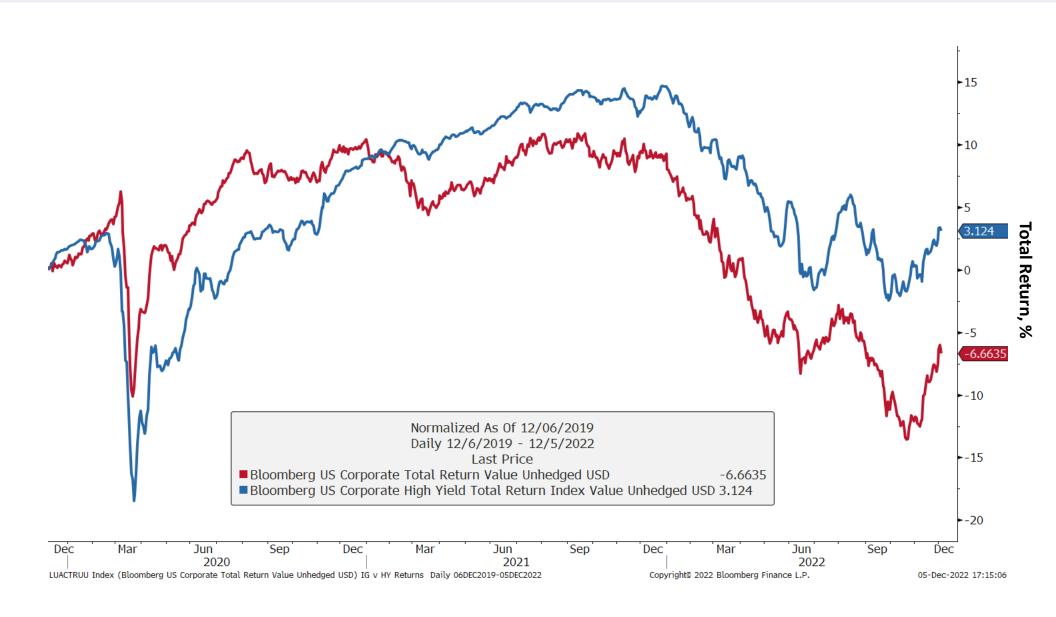


Source: Bloomberg, DoubleLine

AAA – BBB = Investment grade rating by S&P Rating agency. Anything below BBB is below Investment grade. You cannot invest directly in an index.

High Yield & Investment Grade 3-Year Returns

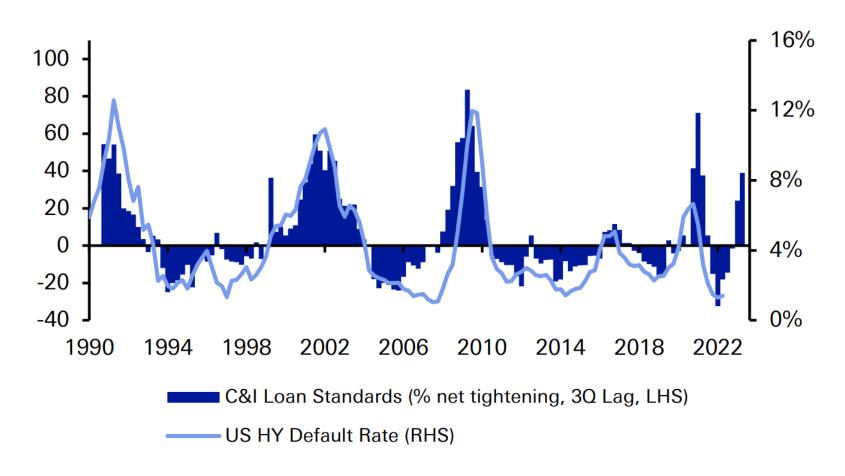




Lending vs. Default Rates



Figure 24:US lending standards lagged 3 quarters versus USD HY default rate

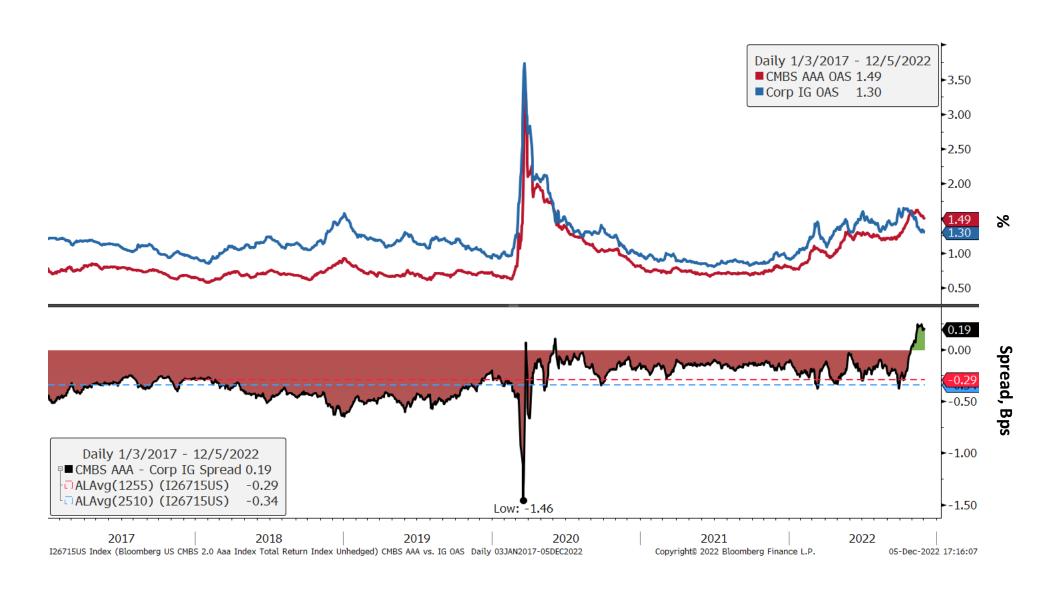


Source : Deutsche Bank, Bloomberg Finance LP

CMBS AAA vs. Corporate Investment Grade Spread

Based on Bloomberg indices



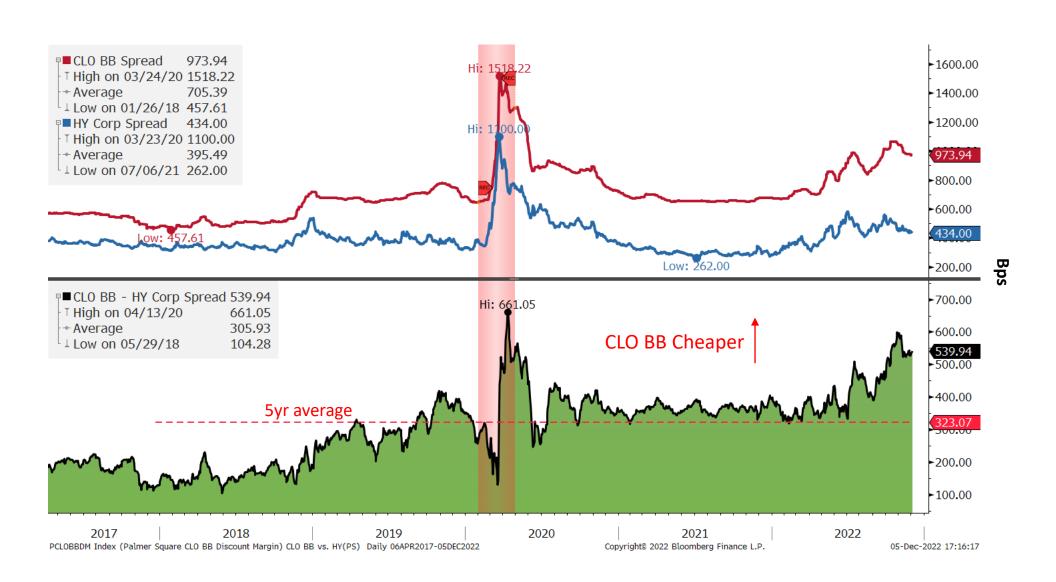


Source: Bloomberg, DoubleLine

Please see Appendix for index definitions. You cannot invest directly in an index.

CLO BB vs. Corporate High Yield Spreads





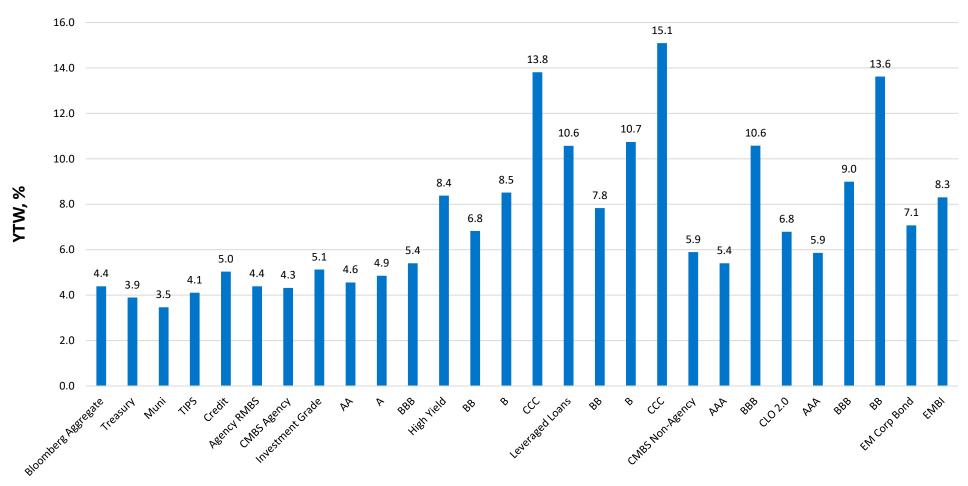
Source: Bloomberg, DoubleLine

Please see Appendix for index definitions. You cannot invest directly in an index. Red shaded area indicates recessionary period

Fixed Income Sectors Yield to Worst



Selected Fixed Income Sectors Yield to Worst



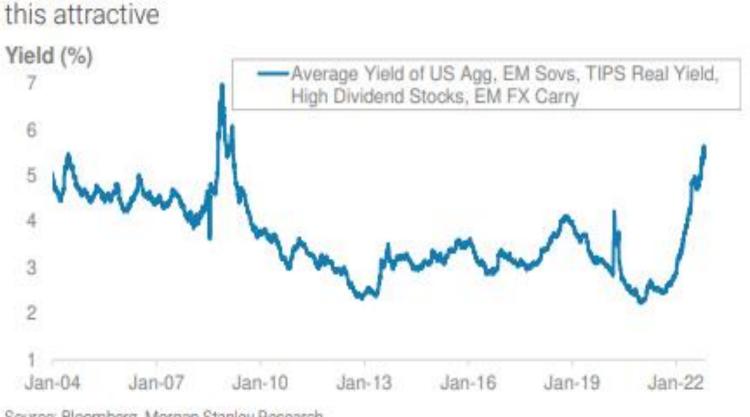
Source: Bloomberg, DoubleLine As of December 02, 2022 YTW = Yield to Worst

Please see Appendix for index definitions. You cannot invest directly in an index.

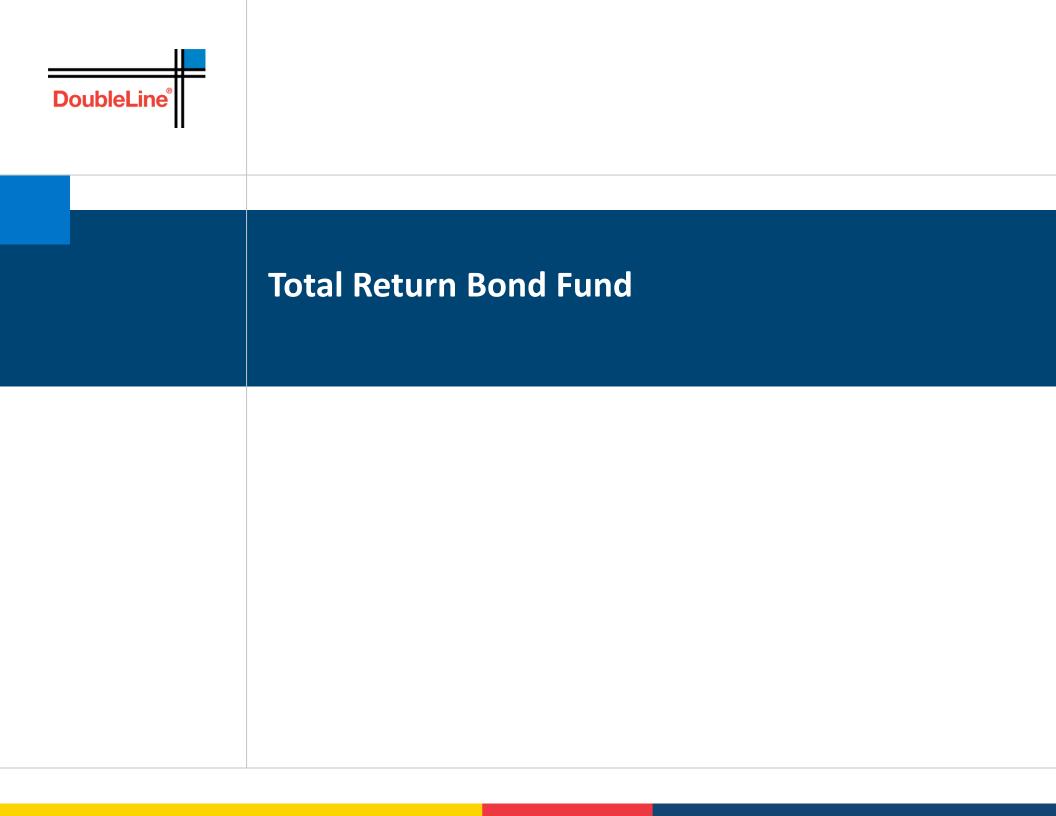
Average Yield on Multi-Asset Fixed Income Portfolio



Yield on a multi-asset income portfolio has rarely been Exhibit 7:



Source: Bloomberg, Morgan Stanley Research



DoubleLine Total Return Bond Fund Portfolio Statistics

As of November 30, 2022



	DoubleLine Total Return Bond Fund	Bloomberg US Aggregate Index
Average Price	\$88.54	\$89.46
Duration	5.96	6.22
Average Life	7.63	8.46

Source: DoubleLine

Portfolio statistics based on market weighted averages. Subject to change without notice.

Average price: A measure of the weighted average price paid for the securities calculated by taking the prices and dividing by the number of securities and does not include cash. Average price should not be confused with net asset value

Average Duration: Duration is used as a risk measure. It measures the price volatility of a security given a change in interest rate movements.

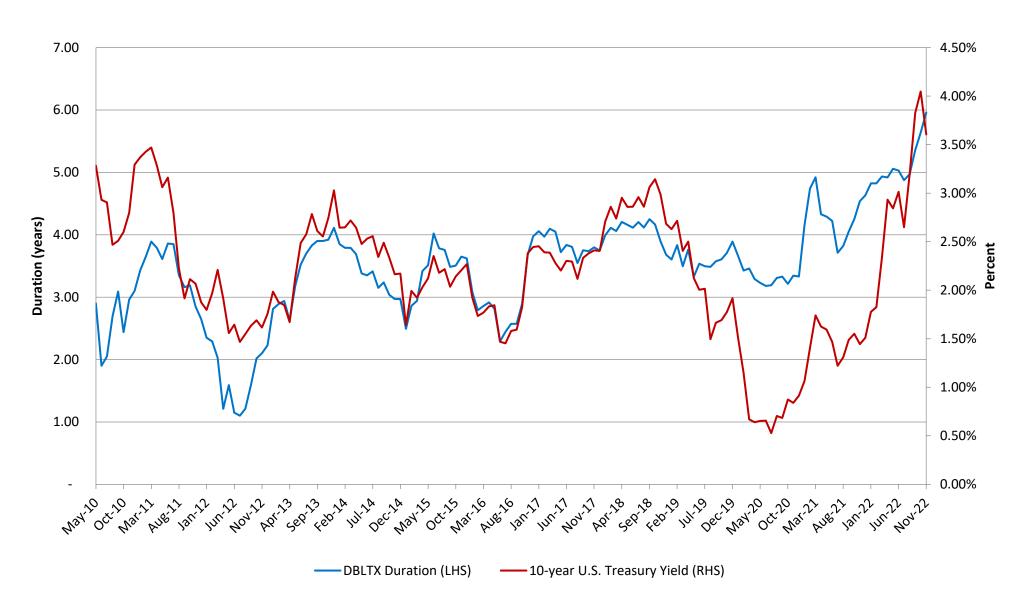
Average Life: The average number of years that each dollar of unpaid principal due on the mortgage remains outstanding. Average life is computed as the weighted average time to the receipt of all future cash flows, using as the weights the dollar amounts of the principal paydowns.

One cannot invest directly in an index. Please see index definition.

Duration: DBLTX vs. 10-Year U.S. Treasury Yield

May 31, 2010 through November 30, 2022

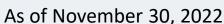




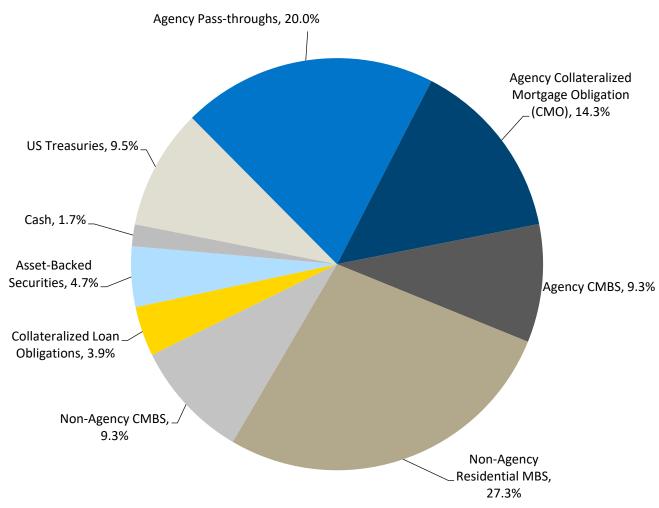
Source: DoubleLine, Bloomberg

Duration: A measure of sensitivity of the price of a fixed-income investment to a change in interest rates, expressed in years.

DoubleLine Total Return Bond Fund Portfolio Composition







Source: DoubleLine. Subject to change without notice.

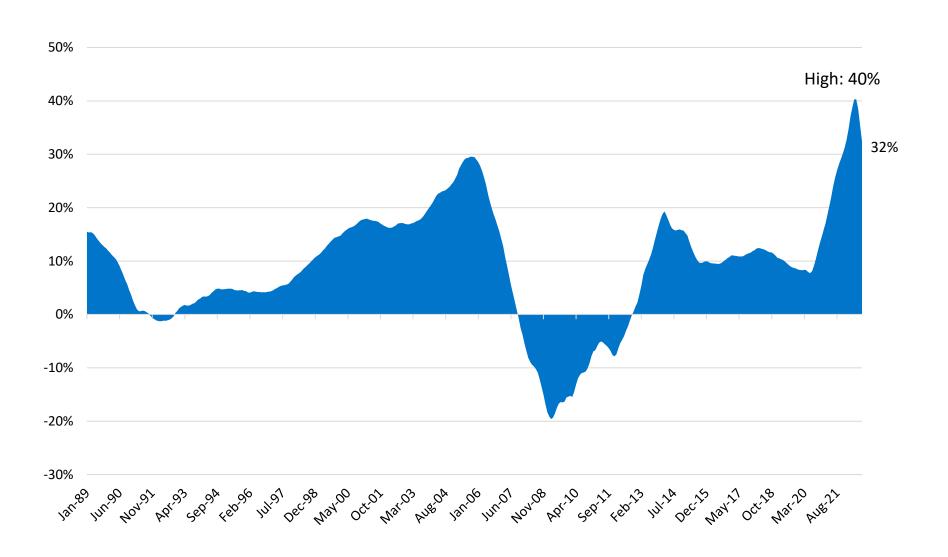
Sector allocations are subject to change and should not be considered a recommendation to buy or sell any security.

Bond ratings are grades given to bonds that indicate their credit quality as determined by a private independent rating service such as Standard & Poor's. The firm evaluates a bond issuer's financial strength, or its ability to pay a bond's principal and interest in a timely fashion. Ratings are expressed as letters ranging from "AAA," which is the highest grade, to "D," which is the lowest grade. In limited situations when the rating agency has not issued a formal rating, the Advisor will classify the security as nonrated.

Cash: The value of assets that can be converted into cash immediately. Can include marketable securities, such as government bonds, banker's acceptances, cash equivalents on balance sheets that may include securities that mature within 90 days. Government: U.S. treasury securities. Agency: Mortgage securities whose principal and interest guaranteed by the U.S. Government agency including Fannie Mae (FNMA) or Freddie Mac (FHLMC). Non-Agency: Residential Mortgages Bond Securities are a type of bond backed by residential mortgages. Non-Agency means they were issued by a private issuer. CMBS: Commercial Mortgage-Backed Securities. Securitized loans made on commercial rather than residential property. CLO: Collateralized Mortgage Obligations

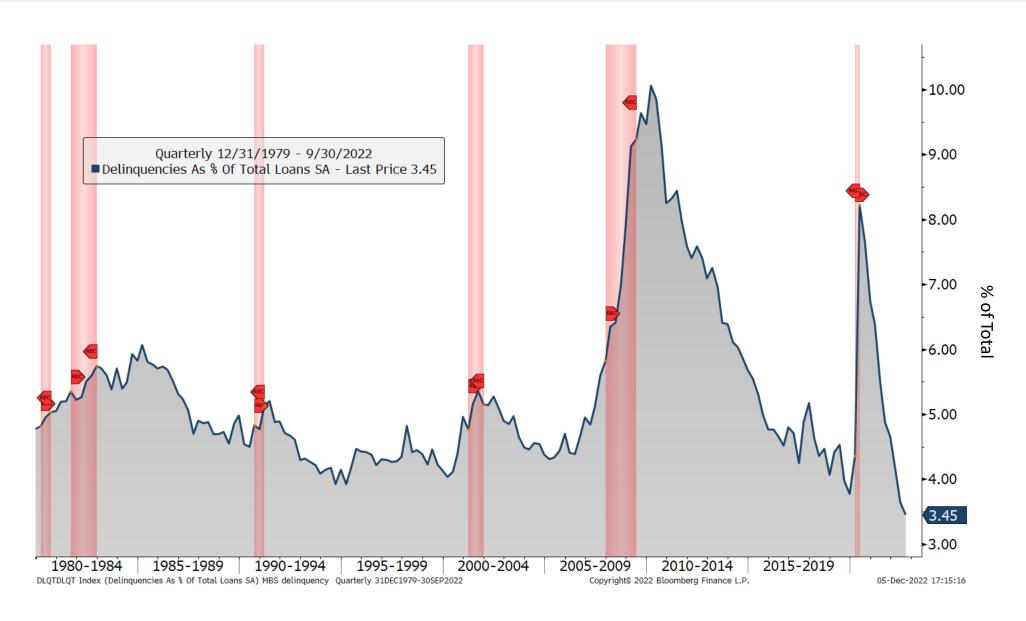
Case-Shiller U.S. National Average Home Price Index 2-Year Change





Mortgage Delinquencies Record Low





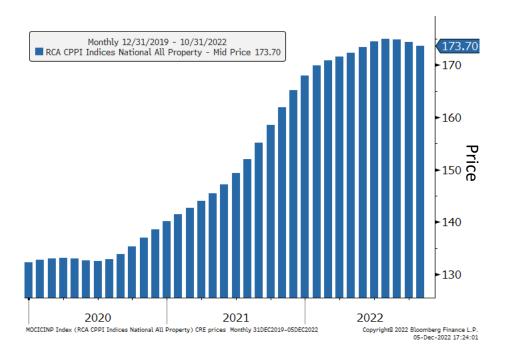
Source: DoubleLine, Bloomberg Red shaded areas indicate recessionary periods

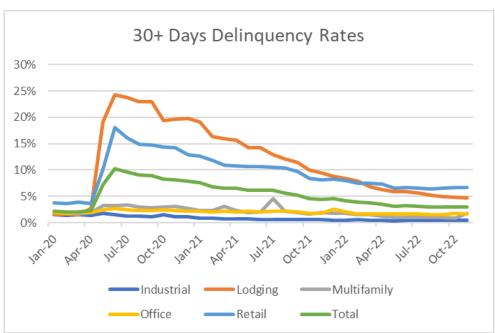
CRE Fundamentals



Commercial Real Estate (CRE) Prices – National Property Price Index

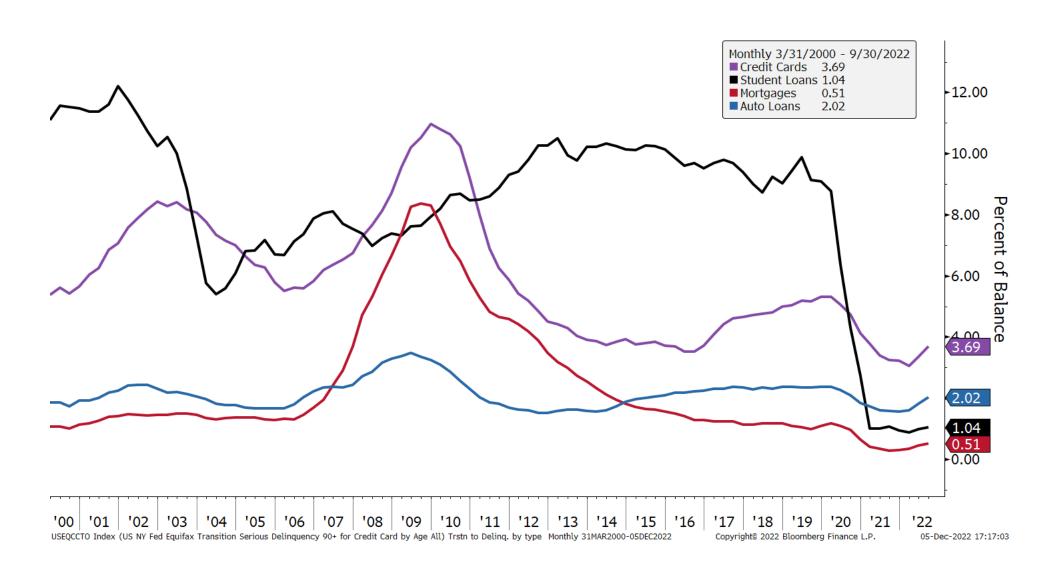
Conduit (CMBS) Delinquency Rates (30+ day delinquent)





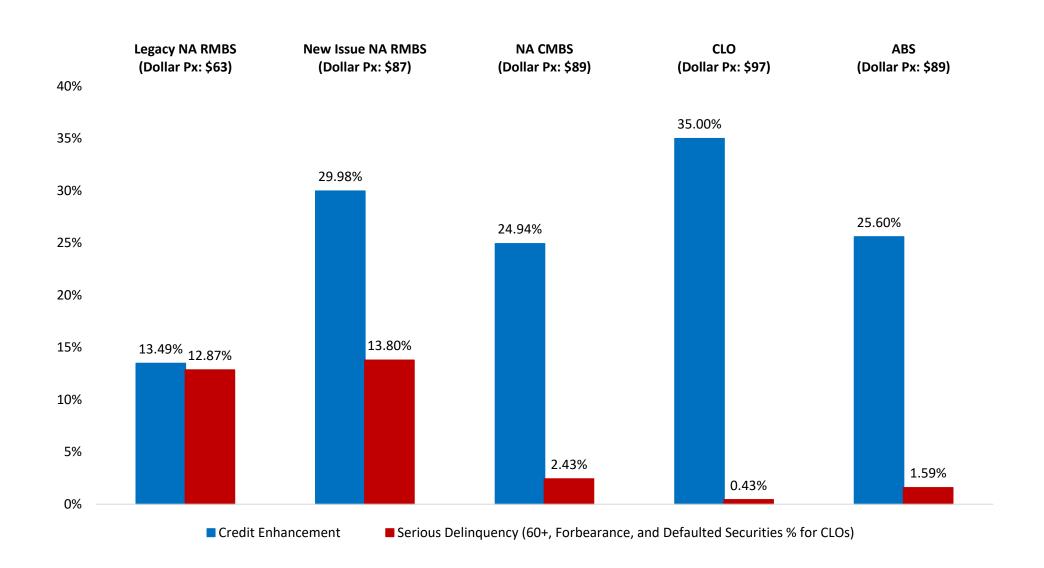
Transition Into Delinquency (90+) by Loan Type



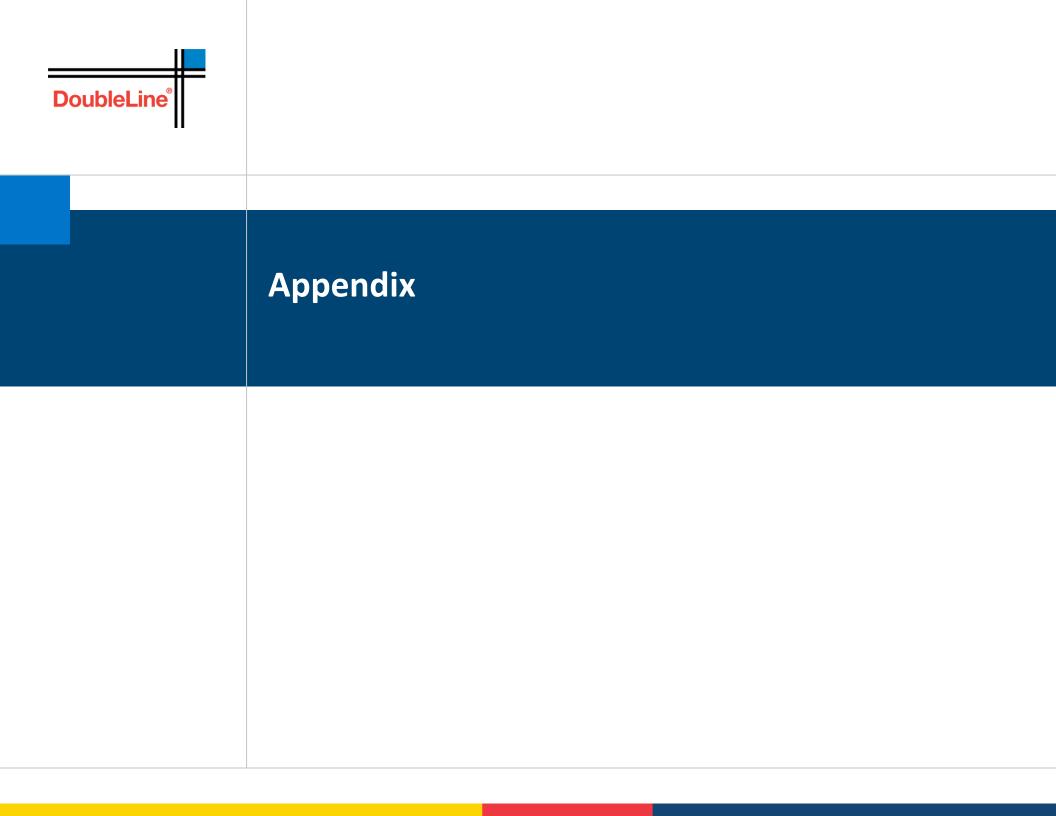


Sector Credit Enhancement vs. Serious Delinquency

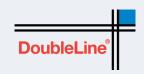




As of November 30, 2022 Source: Bloomberg, DoubleLine Certain securities are excluded due to non-applicability.



Index Definitions



ICE BofA Merrill Lynch U.S. High Yield Index (HOAO) - The Merrill Lynch High Yield Index tracks the performance of US dollar denominated below investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have a below investment grade rating (based on average of Moodys, S&P and Fitch) at least 18 months to final maturity at time of issue of issuance, a final maturity, a fixed coupon schedule and a minimum amount outstanding of \$100 MM.

ICE BofA Merrill Lynch US Corporate Index (COAO) "Investment Grade"- The Merrill Lynch Corporate Index tracks the performance of US dollar denominated investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch) and an investment grade rated country of risk (based on an average of Moody's, S&P and Fitch foreign currency long term sovereign debt ratings). Securities must have at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of \$250MM.

ICE BofA Merrill Lynch US Dollar Emerging Markets Sovereign Plus Index (IGOV) - This index tracks the performance of US dollar denominated emerging market and cross-over sovereign debt publicly issued in the eurobond or US domestic market. Qualifying countries must have a BB1 or lower foreign currency long-term sovereign debt rating (based on an average of Moody's, S&P, and Fitch).

ICE BofA Merrill Lynch US Government Index (GOAO) - The Merrill Lynch US Government Index tracks the performance of US government (i.e. securities in the Treasury and Agency indices.)

ICE BofA Merrill Lynch US Treasury Index (GOQ0) -The Merrill Lynch US Treasury Index tracks the performance of US dollar denominated sovereign debt publicly issued by the US government in its domestic market. Qualifying securities must have at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of \$1 billion.

CAC 40 – This index the most widely-used indicator of the Paris market, reflects the performance of the 40 largest equities listed in France, measured by free-float market capitalization and liquidity.

Citigroup Economic Surprise Index - The Citigroup Economic Surprise Indices are objective and quantitative measures of economic news. They are defined as weighted historical standard deviations of data surprises (actual releases vs Bloomberg survey median). A positive reading of the Economic Surprise Index suggests that economic releases have on balance beating consensus. The indices are calculated daily in a rolling three-month window. The weights of economic indicators are derived from relative high-frequency spot FX impacts of 1 standard deviation data surprises. The indices also employ a time decay function to replicate the limited memory of markets.

Conference Board Consumer Confidence Index (CCI) - This index (published the last Tuesday of every month) measures U.S. consumers' optimism in the economy based on their saving and spending activity.

CPI Shelter Index – This index tracks the shelter component of the Consumer Price Index, which measures the prices of a basket of consumer goods and services.

CRB Commodity Index (CRY) - An unweighted geometric average of some important commodities. It averages prices across 17 commodities and across time. The index tracks energy, grains, industrials,

livestock, precious metals, and agriculturals.

Credit Suisse High Yield Liquid Index - Tracks the performance of US dollar denominated below investment grade corporate debt (BBB rated and lower) publicly issued in the US domestic market.

Credit Suisse Investment Grade Index - Tracks the performance of US dollar denominated investment grade corporate debt (AAA – BBB rated) publicly issued in the US domestic market.

DAX - This index is the German Stock Index is a total return index of 30 selected German blue chip stocks traded on the Frankfurt Stock Exchange.

Dow Jones Industrial Average (DJIA) - A widely-watched benchmark index in the U.S. for blue-chip stocks. The DJIA is a price-weighted index that tracks 30 large, publicly-owned companies trading on the New York Stock Exchange and the Nasdaq.

Dow Jones UBS Commodity index - Composed of commodities traded on U.S. exchanges, with the exception of aluminum, nickel and zinc, which trade on the London Metal Exchange (LME).

DXY - U.S. dollar spot index indicates the general international value of the US dollar by averaging the exchange rates between the USD and major world currencies.

ESTX50 - EuroStoxx 50 index is Europe's leading blue-chip index for the Eurozone, provides a blue-chip representation of supersector leaders in the Eurozone.

FTSE 100 - A capitalization-weighted index of the 100 most highly capitalized companies traded on the London Stock Exchange.

DJ/STOXX 600 - A free-float weighted index of the 600 companies traded on the European stock market.

ICE Bank of America (BofA) MOVE Index - This index is a measure of U.S. interest-rate volatility that tracks the movement in U.S. Treasury yield volatility implied by current prices of one-month over-the-counter options on two-, five-, 10- and 30-year Treasuries.

ISM Manufacturing PMI Index - ISM manufacturing index, also known as the purchasing managers' index (PMI), is a monthly indicator of U.S. economic activity based on a survey of purchasing managers at more than 300 manufacturing firms. It is considered to be a key indicator of the state of the U.S. economy.

- J.P. Morgan Collateralized Loan Obligation Index (CLOIE) This market value-weighted index comprises U.S. dollar-denominated collateralized loan obligations (CLOs). Sub-indexes are divided by ratings AAA through BB and further divide between pre-and post-crisis vintages. Examples of sub-indexes are the J.P. Morgan CLO AAA, J.P. Morgan CLO AAA, J.P. Morgan BB, and J.P Morgan BB Indexes.
- **J.P. Morgan Emerging Markets Bond Index (EMBI)** This index tracks emerging markets (EM) bonds and comprises sovereign debt and EM corporate bonds.
- **J.P. Morgan Emerging Markets Currency Index (EMCI)** This index is a tradeable benchmark for emerging markets (EM) currencies vs the U.S. dollar.

KBW Nasdaq Bank Index - A benchmark stock index of the banking sector includes 24 stocks.

Index Definitions



MSCI ACWI (ex U.S.) Index - A free-float weighted equity index that includes both emerging and developed worlds markets except the U.S.

MSCI ACWI Index (ACWI) - A free-float weighted equity index that includes both emerging and developed worlds markets.

MSCI Europe Index - The MSCI Europe Index is a free-float weighted equity index designed to measure the equity market performance of the developed markets in Europe.

MSCI Emerging Markets Index – The index captures large and mid-cap representation across 27 Emerging Markets countries.

MSCI Emerging Markets Equities Index – The index captures large and mid-cap representation across 24 Emerging Markets countries.

MSCI US Small Cap Index - A free float weighted index of U.S. small cap equity stocks.

MSCI USA Large Cap Index - A free float weighted large- cap equity index.

NASDAQ 100 Index - A basket of the 100 largest, most actively traded U.S. companies listed on the NASDAQ stock exchange.

Nikkei 225 (Tokyo Stocks) - The Nikkei-225 Stock average is a price-weighted average of 225 top-rated Japanese companies listed in the First Section of the Tokyo Stock Exchange.

Palmer Square CLO Debt Index (CLODI) - A rules-based observable pricing and total return index for CLO debt for sale in the U.S. Index includes sub-indices by ratting: AAA, AA, A, BBB, BB, B, C and D.

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.

Russell 2000 – Measures the performance of the small-cap segment of the US equity universe. Russell 2000 is a subset of the Russell 3000 index representing approximately 10% of the total market capitalization of that index.

S&P 500 (SPX) - A free-float capitalization-weighted index published since 1957 of the prices of 500 large-cap common stocks actively traded in the United States.

S&P 500 Growth Index - This index includes the stocks with growth characteristics from the S&P 500 Index. If a stock does not have pure value or pure growth characteristics, its market cap is distributed between the S&P 500 Growth and Value indexes.

S&P 500 High Beta Index - Measures the performance of 100 constituents in the S&P 500 that are most sensitive to changes in market returns.

S&P 500 Value Index - This index includes the stocks with value characteristics from the S&P 500 Index. If a stock does not have pure value or pure growth characteristics, its market cap is distributed between the S&P 500 Value and Growth indexes.

S&P CoreLogic Case-Shiller National Home Price NSA Index - This index tracks the value of single-family housing within the United States and is a composite of single-family price indexes for the nine Census Bureau divisions.

S&P GSCI - A composite index of commodity sector return representing an unleveraged, long-only investment in commodity futures that is broadly diversified across the spectrum of commodities.

S&P U.S. Mortgage-Backed Securities Fixed Rate 1-10 year Index (MBS Fixed Rate 1-10 Year) – Is a rules-based, market-value-weighted index covering U.S. dollar denominated, fixed-rate mortgages 1-10 years.

S&P/Case-Shiller Composite Home Price Index - The Case-Shiller Home Price Indices, one comprised of price changes within all 20 metropolitan markets, and another comprised of price changes within the following subset of 10 metropolitan markets: Boston, Chicago, Denver, Las Vegas, Los Angeles, Miami, New York, San Diego, San Francisco and Washington DC. In addition: 10 markets, the 20-Home Price index reflects price changes for Atlanta, Charlotte, Dallas, Detroit, Minneapolis, Phoenix, Portland, Seattle and Tampa.

S&P/LSTA Leveraged Loan 100 Index - This index tracks the market-weighted performance of the 100 largest institutional leveraged loans based on market weightings, spreads and interest payments. Sub-indexes within this index are the S&P/LSTA Leveraged Loan B Index and the S&P/LSTA Leveraged Loan BB Index. These sub-indexes track loans in the B to BB rated categories.

S&P/LSTA Leveraged Loan Index - This index tracks the market-weighted performance of institutional weighted loans based on market weightings, spreads and interest payments. Subindexes of this index include the BB Loan Index and the B Loan Index which track this quality rating from the entire S&P/LSTA Leveraged Loan Index.

Shanghai Index - The Shanghai Stock Exchange Composite is a capitalization-weighted index tracking daily price performance of all A and B-shares listed on the Shanghai Stock Exchange. This index was developed December 19, 1990 with a base value of 100.

Volatility Index (VIX) - The VIX shows the market's expectation of 30-day volatility. It is constructed using the implied volatilities of a wide range of S&P 500 index options. This volatility is meant to be forward looking and is calculated from both calls and puts. The VIX is a widely used measure of market risk and is often referred to as the "investor fear gauge."

Manheim Used Car Value Index - By applying statistical analysis to its database of more than 5 million used vehicle transactions annually, Manheim has developed a measurement of used vehicle prices that is independent of underlying shifts in the characteristics of vehicles being sold.

University of Michigan Consumer Sentiment Index - This index rates the relative level of current and future economic conditions through monthly surveys of about 500 U.S. households (ex Alaska and Hawaii). There are two versions of this data released two weeks apart, preliminary and revised. The preliminary data tends to have greater impact. A higher-than-expected reading should be taken as positive/bullish for the U.S. dollar; a lower-than-expected reading should be taken as negative/bearish.

Index Definitions



Amherst Non-Agency Index - Residential Mortgages Bond Securities are a type of bond backed by residential mortgages. Non-Agency means they were issued by a private issuer.

Bloomberg Capital US 30 Year TIPS Index "TIPS"- Bloomberg Capital 30-year TIPS on-the-run index quoted in US Dollars traded intraday

Bloomberg Baa Corporate Index - Measures the Baa-rated, fixed-rate, taxable corporate bond market. It includes USD denominated securities publicly issued by US and non-US industrial, utility and financial issuers.

Bloomberg Commodities Total Return Index – "Commodities" This index (formerly the Dow Jones-UBS Commodity Index) is calculated on an excess return basis and reflects the price movements of commodity futures. It rebalances annually, weighted two-thirds by trading volume and one-third by world production, and weight caps are applied at the commodity, sector and group levels for diversification. The roll period typically occurs from the sixth to 10th business day based on the roll schedule.

Bloomberg Global Emerging Markets Index - The Bloomberg Global Emerging Markets Index represents the union of the USD-denominated US Emerging Markets index and the predominately EUR-denominated Pan Euro Emerging Markets Index, covering emerging markets in the following regions: Americas, Europe, Middle East, Africa, and Asia. As with other fixed income benchmarks provided by Bloomberg Capital, the index is rules-based, which allows for an unbiased view of the marketplace and easy replicability.

Bloomberg US Corporate Bond Index "Corporates" - This index measures the investment grade, fixed-rate taxable corporate bond market. It includes U.S. dollar-denominated securities publicly issued by U.S. and non-U.S. industrial, utility and financial issuers. Subindexes of this index are divided by corporate credit quality ratings ranging from the gamut of investment grade credit quality ratings such as AAA, AA, A, BBB) Ratings below BBB are considered below investment grade. Index includes sub-indices by rating: AAA, AA, A and BBB).

Bloomberg U.S. Corporate Index - Is a subset of the Bloomberg U.S. Aggregate index which is a broad-based flagship benchmark that measures the investment grade, U.S. dollar-denominated, fixed rate taxable bond market. IT includes Treasuries, government-related and corporate securities, MBS, ABS and CMBS. This subset represents the investment grade portion of that index.

Bloomberg U.S. Credit Index - This index is the U.S. credit component of the US Government/Credit Index. It consists of publicly issued U.S. corporate and specified foreign debentures and secured notes that meet the specified maturity, liquidity and quality requirements. To qualify, bonds must be SEC registered. The US Credit Index is the same as the former US Corporate Index.

Bloomberg US Aggregate Bond Index - Represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the US investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

Bloomberg US CMBS Non-Agency Index - Represents the Non-Agency CMBS component of the Bloomberg

US Aggregate Index including AAA-BBB.

Bloomberg US CMBS: ERISA Eligible Total Return Index - Measures the investment-grade market of US Agency and US Non-Agency conduit and fusion CMBS deals with a minimum current deal size of \$300mn that are ERISA eligible. Sub-indexes within this index are broken out by ratings such as the Bloomberg CMBS ERISA Eligible: AAA Total Return Index; Bloomberg CMBS ERISA Eligible: AA Total Return Index; and the Bloomberg CMBS ERISA Eligible: BBB Total Return Index.

Bloomberg US Corporate High Yield (HY) Index - This index measures the U.S. dollar-denominated HY fixed-rate corporate bond market. Securities are classified as HY if the respective middle ratings of Moody's, Fitch and S&P are Ba1, BB+ or BB+ or below. The Bloomberg US HY Long Index, including bonds with maturities of 10 years or greater, and the Bloomberg US HY Intermediate Index, including bonds with maturities of 1 to 9.999 years, are subindexes of the Bloomberg US Corporate HY Index.

Bloomberg US High Yield Index "High Yield" - Covers the universe of fixed rate, non-investment grade debt. (BBB rated and below) Eurobonds and debt issuer from countries designated as emerging markets (e.g. Argentina, Brazil, Venezuela, etc.) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes, step-up coupon structures, 144-As and pay-in-kind (PIK, as of October 1, 2009) are also included. Index includes sub-indices by rating: BBB, C, CCC, D.

Bloomberg US MBS Index – Represents the MBS component of the Bloomberg US Aggregate Index.

Bloomberg US Treasury 10 Year Index - This index is the 10 year component of the US Government index.

Bloomberg US Treasury 30 Year Index - This index is the 30 year component of the US Government index.

Bloomberg US Treasury Index - This index is the US Treasury component of the US Government index. Public obligations of the US Treasury with a remaining maturity of one year or more.

Bloomberg Commodity Index (BCOM) - An index calculated on an excess return basis and reflects commodity futures price movements.

BofA Merrill Lynch Current 10 year UST Index - This index is the 10 year component of the US Government index.

BofA Merrill Lynch Current 30 year UST Index - This index is the 30 year component of the US Government index.

BofA Merrill Lynch International Government Index (NOGO) - The Merrill Lynch International Index tracks the performance of Australia, Canadian, French, German, Japan, Dutch, Swiss and UK investment grade sovereign debt publicly issued and denominated in the issuer's own domestic market and currency. Qualifying securities must have at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding.

Definitions of Select Terms



Basis Point- A basis point is a unit that is equal to 1/100th of 1%, and is used to denote the change in a financial instrument.

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 over different periods of a business cycle. It is also known as the "Shiller P/E ratio" for Yale University professor Robert Shiller, who popularized its use.

Convexity- A measure of the curvature, or the degree of the curve, in the relationship between bond prices and bond yields. Convexity demonstrates how the duration of a bond changes as the interest rate changes. Portfolio managers will use convexity as a risk-management tool, to measure and manage the portfolio's exposure to interest rate risk.

"Copper"- Copper Spot Price (HGI) Copper is the world's third most used metal behind iron and aluminum primarily used in highly cyclical industries including construction and industrial machinery manufacturing. Spot price quoted in USD/lb.

Copper-Gold Ratio (CGR) - Calculated by dividing the market price of a pound of copper by the market price of an ounce of gold.

Correlation - A statistical measurement of the relationship between two variables. Possible correlations range from +1 to -1. A zero correlation indicates that there is no relationship between the variables. A correlation of -1 indicates a perfect negative correlation and +1 indicates a perfect positive correlation.

Crude Oil - Crude oil varies greatly in appearance depending on its composition. West Texas intermediate (WTI)= Texas light sweet crude is used as a benchmark in oil pricing. It's "light" because of the low density and sweet because of low sulfur. Brent crude = Is a major trading classification of sweet light crude. Brent is the oil maker also known as Brent Blend.

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 over different periods of a business cycle. It is also known as the "Shiller P/E ratio" for Yale University professor Robert Shiller, who popularized its use.

Debt-Service Coverage Ratio (DSCR) - A measurement of a firm's available cash flow to pay current debt obligations.

Drawdown- The peak-to-trough decline during a specific record period of an investment, fund or commodity. A drawdown is usually quoted as the percentage between the peak and the trough.

Duration – Duration is a commonly used measure of the potential volatility of the price of a debt security, or the aggregate market value of a portfolio of debt securities, prior to maturity. Securities with a longer duration generally have more volatile prices than securities of comparable quality with a shorter duration.

FICO - This credit score, created by the Fair Isaac Corp., is used by lenders along with other details on a borrower's credit report to assess credit risk and determine whether to extend credit.

"Gold"- Gold Spot Price (Golds) The Gold Spot price is quoted as US Dollar per Troy Ounce.

Investment Grade - Rating that signifies a municipal or corporate bond presents a relatively low risk of default. Bonds below this designation are considered to have a high risk of default and are commonly referred to as "junk bonds." The higher the bond rating the more likely the bond will return 100 cents on the U.S. dollar.

JOLTS - The job openings and labor turnover survey (JOLTS) is a survey done by the United States Bureau of Labor Statistics (BLS) within the Department of Labor to help measure job vacancies.

Market Capitalization – The market value of a company's outstanding shares. This figure is found by taking the stock price and multiplying it by the total number of shares outstanding.

Moratorium - A temporary prohibition of an activity. (plural: moratoria/moratoriums)

Nasdaq - A computerized system that facilitates trading and provides price quotations on more than 5,000 of the more actively traded over the counter stocks. Created in 1971, the Nasdaq was the world's first electronic stock market.

P/E (Price-to-Earnings) Ratio - The ratio of valuing a company that measures its current share price relative to its per-share earnings.

Producer Price Index (PPI) - This index, published by the U.S. Bureau of Economic Analysis, measures prices paid by consumers for goods and services, excluding the volatility of food and energy prices, to gauge underlying inflation trends. It is the Federal Reserve's preferred index for tracking inflation.

Quantitative Easing (QE) — An unconventional monetary policy used by central banks to stimulate the economy when standard monetary policy has become ineffective. A central bank implements quantitative easing by buying specified amounts of financial assets from commercial banks and other private institutions, thus raising the prices of those financial assets and lowering their yield, while simultaneously increasing the monetary base.

R-Squared (R^2) - A statistical measure that represents the proportion of the variance for a dependent variable that's explained by an independent variable or variables in a statistical measure that represents the proportion of the variance for a dependent variable that's explained by an independent variable or variables in a regression model.

Smart Beta – A passive weighting scheme that deviates from market capitalization.

Spread – Spread is the percentage point difference between yields of various classes of bonds compared to treasury bonds.

Standard Deviation (or Sigma) - Shows how much variation there is from the "average" (mean, or expected/budgeted value). A low standard deviation indicated that the data point tend to be very close to the mean, whereas high standard deviation indicated that the date is spread out over a large range of values.

U-3 Unemployment Rate - Officially recognized rate of unemployment, compiled and released monthly by the U.S. Bureau of Labor Statistics, measuring the number of unemployed people as a percentage of the labor force.

Upgrade-to-Downgrade Ratio - A ratio between bond upgrades (when a rating agency raises a bond's rating) and bond downgrades (when a rating agency lowers a bond's rating).

Yield Curve - Is a line that plots the interest rates, at a set point in time, of bonds having equal credit quality but differing maturity dates.

Yield-to-Worst (YTW) - The lowest yield of a bond that can be received short of default.

Z-Score - A Z-score is a numerical measurement that describes a value's relationship to the mean of a group of values. Z-score is measured in terms of standard deviations from the mean.

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"Up, Up & Away"

December 6, 2022

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