Madison INVESTMENTS

CLIENT COMMUNICATION

Madison Commentary Report - December 31, 2022

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EQUITY MARKETS REBOUND IN THE FOURTH QUARTER

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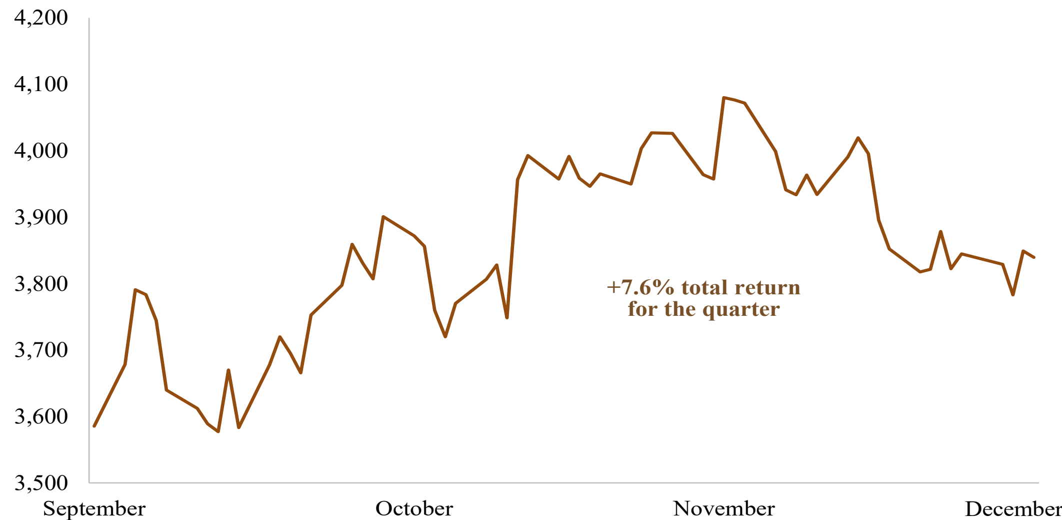
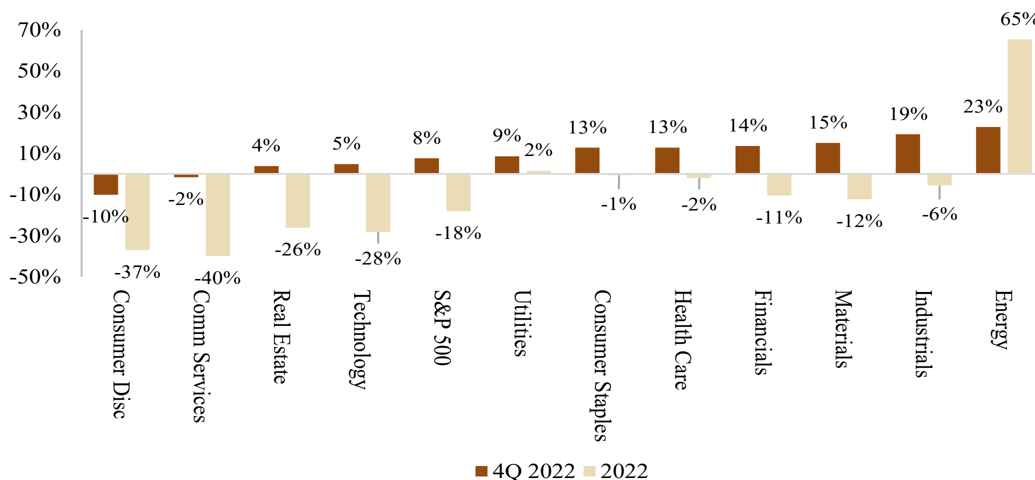


Fourth Quarter Highlights

- The S&P 500 rebounded in the fourth quarter, rising 7.6% and bringing the full year return to -18.1%.
- Signs that inflation is beginning to moderate and a view that the Federal Reserve is nearing the end of its aggressive monetary tightening cycle resulted in a fourth quarter rally.
- Headline inflation moderated to 7.1% in November after peaking at 9.1% in June 2022. Consensus estimates are for 4.0% headline inflation for 2023.
- Third quarter real GDP increased by 3.2%. Fourth quarter real GDP growth is expected to moderate to +1.1% growth with a further slowing in 2023 to just 0.3%.



Sector Snapshot

- Most sectors experienced positve returns during the fourth quarter. Consumer Discretionary and Communications Services were the two sectors with negative returns during the fourth quarter.
- For the full year, Energy and Utilities were the only sectors with positive returns with Utilities up 2% while Energy surged, up 65%.
- For the full year, Communcation Services, Consumer Discretionary and Information Technology were the worst performing sectors down -40%, -37% and -28%, respectively.
- High interest rates, high inflation, the war in Ukraine, China lockdowns and supply chain issues have all acted as headwinds for both the equity and fixed income markets.

Source: FactSet, Bloomberg

2022 WAS A CHALLENGING YEAR— STOCKS AND BONDS IMPACTED BY HIGHER RATES

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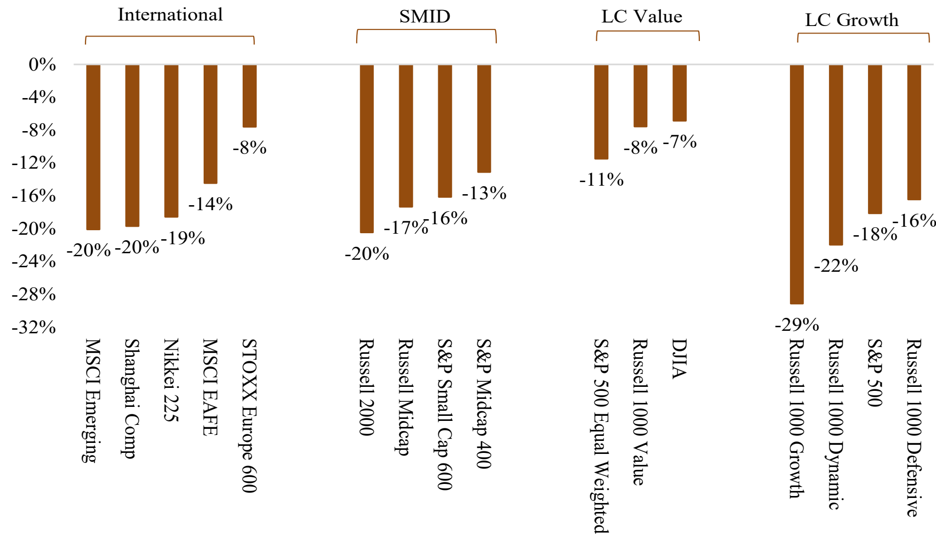
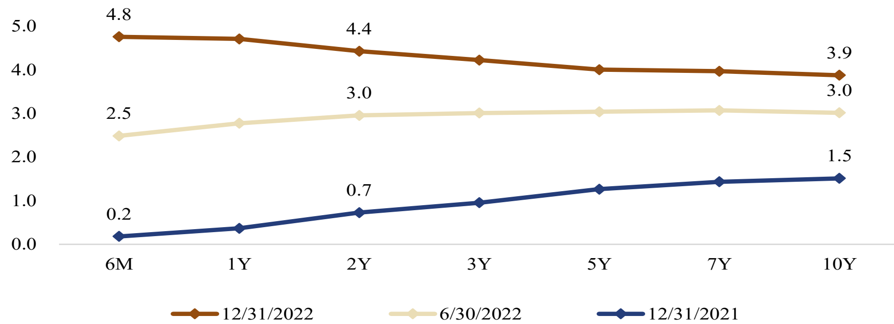
2022 Equity Market Returns: Size and Geographies



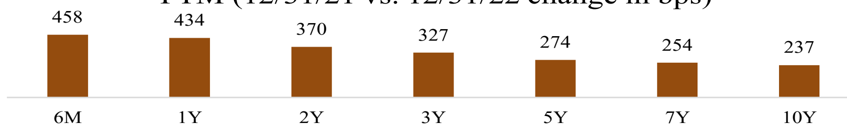
Note: Returns in USD

- **(Top Left)** Equity market returns were weak in 2022 across all regions, style and size. Growth, Small Cap and Emerging Markets were the worst performing parts of the market. Value, Midcap and Europe (suprisingly) were the better performing areas of the market. The tight monetary policy as a result of elevated inflation had the most impact on the growth sectors of the market. Emerging markets were disrupted by weak currencies, high oil prices, and Covid-19 disruptions in China. The broader European market has much less exposure to the Technology sector (8% of the Stoxx 600 Index) compared to 26% of the S&P 500 Index, partially explaining its better relative performance.
- **(Bottom Left)** The Federal Reserve raised rates aggressively in 2022 ending the year at an effective rate of 4.33% after starting the year at close to zero. The chart in the lower left shows the shift in the yield curve over the course of 2022 which resulted in both weak equity and fixed income markets. The tightening cycle was the most severe we have seen in over 40 years. We expect a few more rate hikes by the Federal Reserve in 2023 but nothing of the magnitude seen in 2022.
- **(Bottom Right)** Oil prices ended the year at roughly the same price as the beginning of the year but increased by 50% in the first half of the year which not only stoked inflation but was an additional burden on consumers' wallets. As a result, volatility moved higher in the first part of the year along with higher oil prices and inflation (not shown). Oil prices have since come back down due to the slowdown in China and slower global growth - this is expected to further moderate inflation levels. The market has reacted positively to these events as they translate to less monetary tightening going forward and relief on gross margin pressure that companies experienced throughout 2022.

2022 Yield Curve - Shifted Higher and Inverted

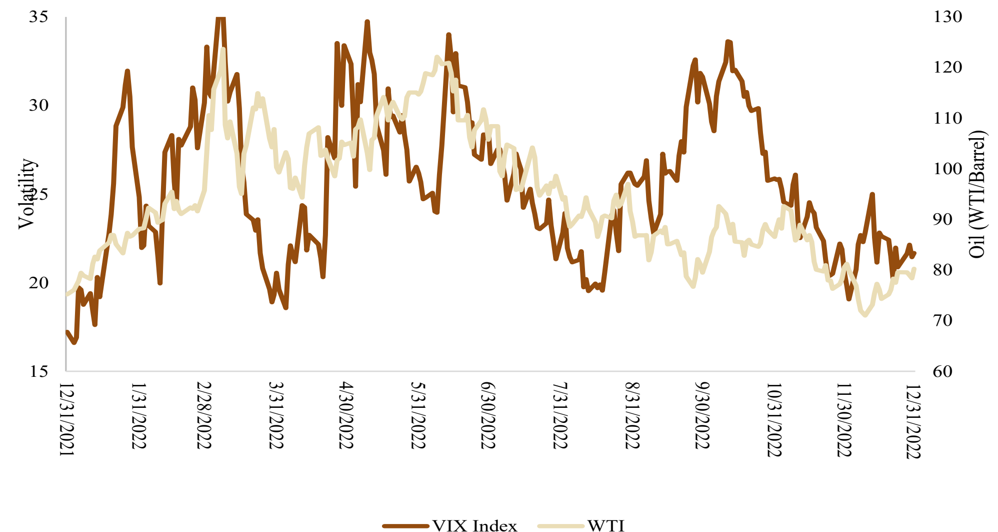


YTM (12/31/21 vs. 12/31/22 change in bps)



Sources: Bloomberg, Factset

Volatility and Oil Prices Were Closely Linked in 2022



CYCLICAL VS STRUCTURAL INFLATION

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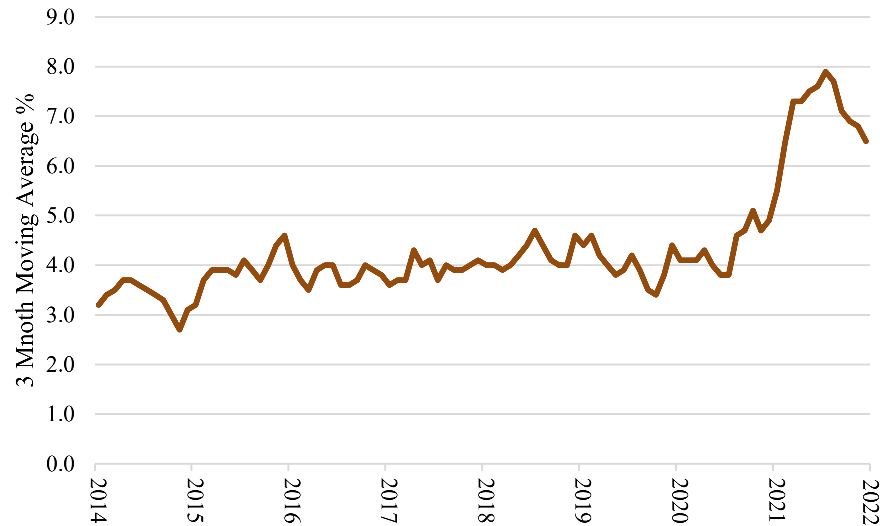

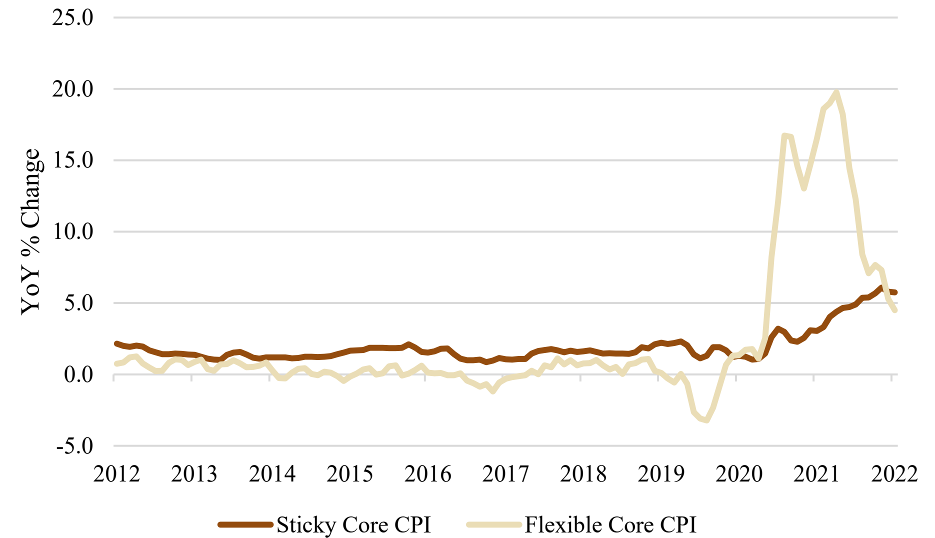

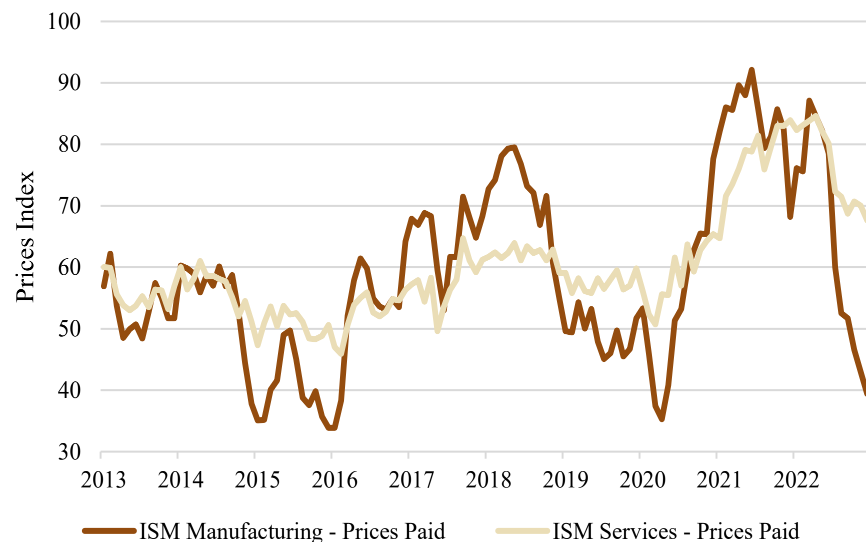

- **(Top Left)** Wage growth is showing signs of slowing, which should help lower cyclical inflation.
- **(Bottom Left)** Prices of both goods and services are falling, but goods significantly more due to excessive Covid stimulus and demand for goods slowing down. Demand post-Covid has decidedly shifted back from goods to services, with services such as elective health care procedures and travel now increasing back to pre -Covid levels.
- **(Top Right)** Certain aspects of inflation should continue to rapidly decelerate throughout 2023, such as prices of discretionary consumer items and durable goods that were artificially inflated during Covid. However, there are structural aspects of "sticky" core CPI which represent over 60% of core CPI and consists of many service based categories (e.g. medical services, education, personal care services), which may be here to stay for the foreseeable future, regardless of Fed action.

Source: Factset, Federal Reserve Bank of Atlanta, Federal Reserve Bank of St. Louis,

RECESSION IMMINENT?

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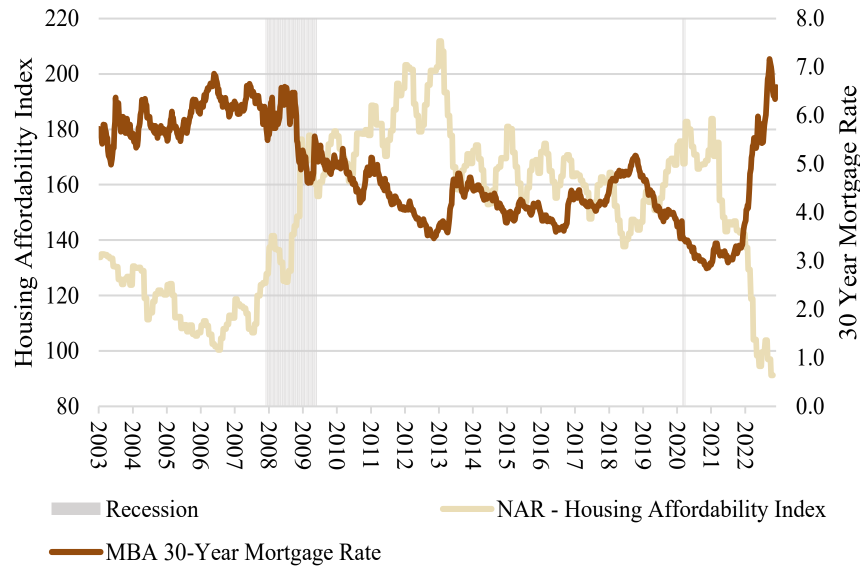
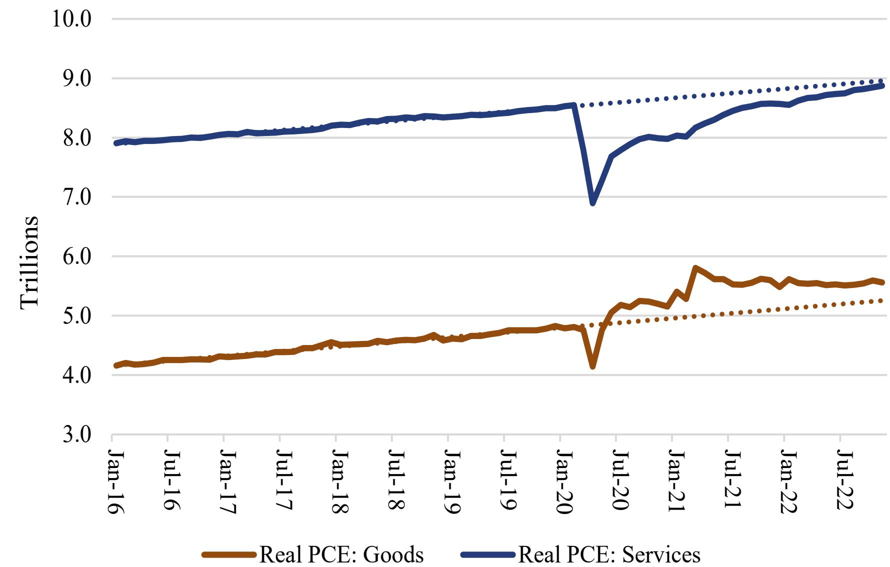
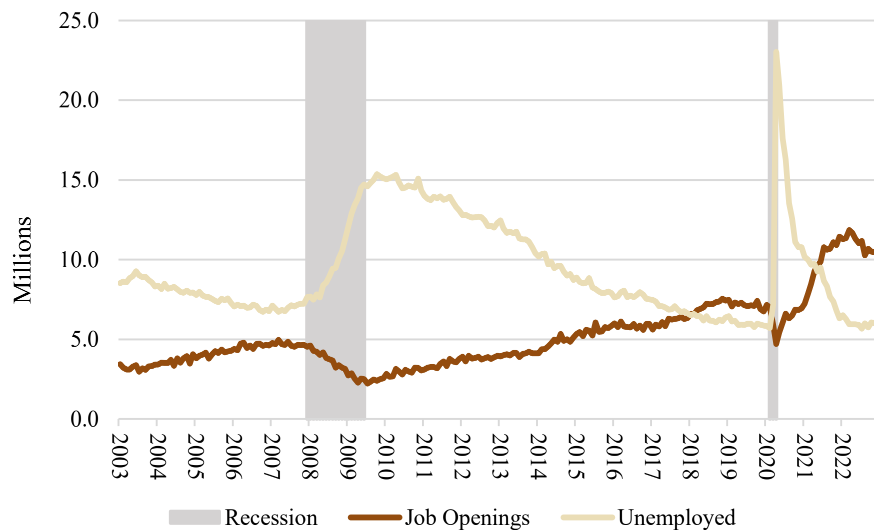
Housing Affordability Plummeting



Consumers Continue to Spend



Labor Market Remains Strong



- **(Top Left)** The combination of record housing prices and mortgage rates increasing over four percent in the calendar year resulted in record-low housing affordability, pushing new mortgage applications to multi-decade lows. Freezing this part of the economy will contribute towards negative GDP in 2023 and help the Fed with its inflation battle.
- **(Bottom Left)** In contrast to housing, however, there remains a structural labor supply problem that the Fed cannot fix with almost two job openings for each person unemployed. So far, the Fed has achieved a "white collar" recession of sorts in which the first rounds of announced layoffs have included technology sector workers hit by the pullback in consumer discretionary and advertising spending.
- **(Top Right)** Consumer spending on goods and services is normalizing back to pre-Covid trendlines with goods spending coming back down and services recovering to trendline.

Source: Factset, Federal Reserve Bank of St. Louis

EARNINGS HAVE STARTED TO DECLINE, HOW MUCH FURTHER WILL THEY GO?

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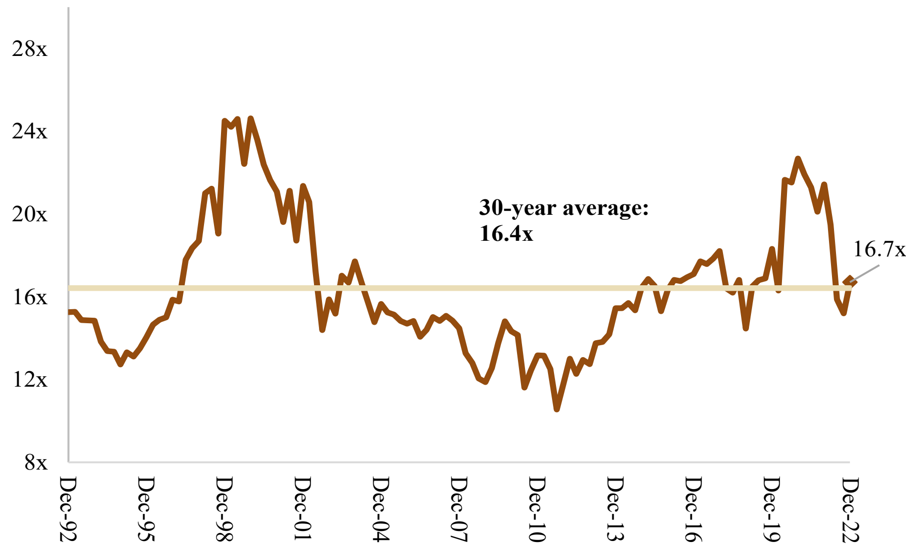
S&P 500 Index Forward P/E Multiple



- **(Top Left)** Earnings estimates began to fall during the fourth quarter resulting in a higher price earnings ratio. The S&P 500 P/E multiple rose to 16.7x from 16.0x at the end of the third quarter, and is now slightly above the long-term average. As we have been messaging, we expect earnings estimates to decline further. Much of the bad news has been priced in but we may see more downside in the near term as earnings may decline along with a slowing economy in 2023.
- **(Bottom Left**) Earnings estimates are still showing earnings growth for the S&P 500 in 2023 at $231 or 6% growth and $253 in 2024, 10% growth. Consensus estimates moved lower during the fourth quarter and we expect further revisions lower as fourth quarter earnings are reported in late January and early February. We expect companies to provide cautious outlooks for 2023 with lower economic growth anticipated. Longer-term, we remain constructive on stocks as they will follow earnings and earnings growth.
- **(Bottom Right)** Using current pricing, equities and fixed income look equally attractive, however, with the expected lower earnings, we believe bonds are more attractive. With the higher yields that we have seen as a result of much tighter monetary policy, fixed income has become much more attractive and has resumed a prominent position in many portfolios.

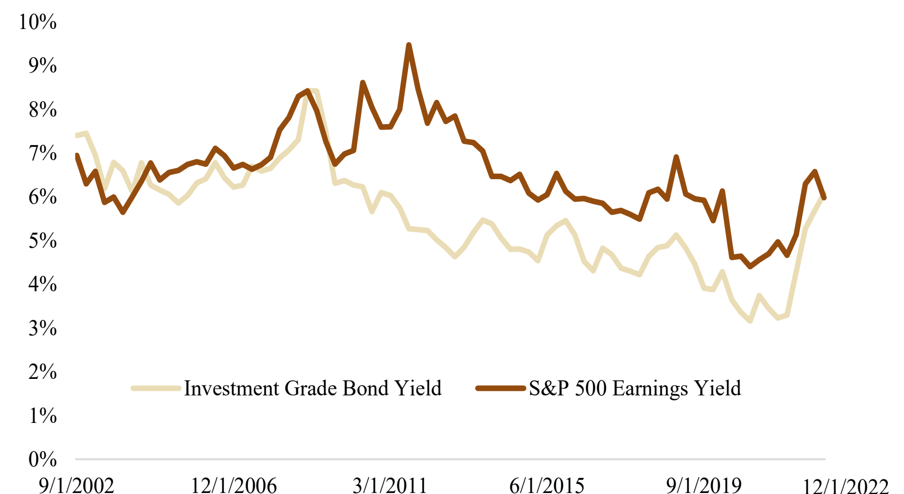
S&P 500 Level Implied by Price to Earnings Combinations

			Price/Earnings Multiple				
			14x	16x	18x	20x	22x
	$	260	3,640	4,160	4,680	5,200	5,720
	$	250	3,500	4,000	4,500	5,000	5,500
	$	240	3,360	3,840	4,320	4,800	5,280
S&P 500	$	230	3,220	3,680	4,140	4,600	5,060
Earnings	$	220	3,080	3,520	3,960	4,400	4,840
per Share	$	210	2,940	3,360	3,780	4,200	4,620
	$	200	2,800	3,200	3,600	4,000	4,400

S&P 500 Top Down Estimates			
		Mean	Growth
2020A	$	140.45	-14%
2021A	$	208.49	48%
2022E	$	220.50	6%
2023E	$	230.61	5%
2024E	$	253.48	10%

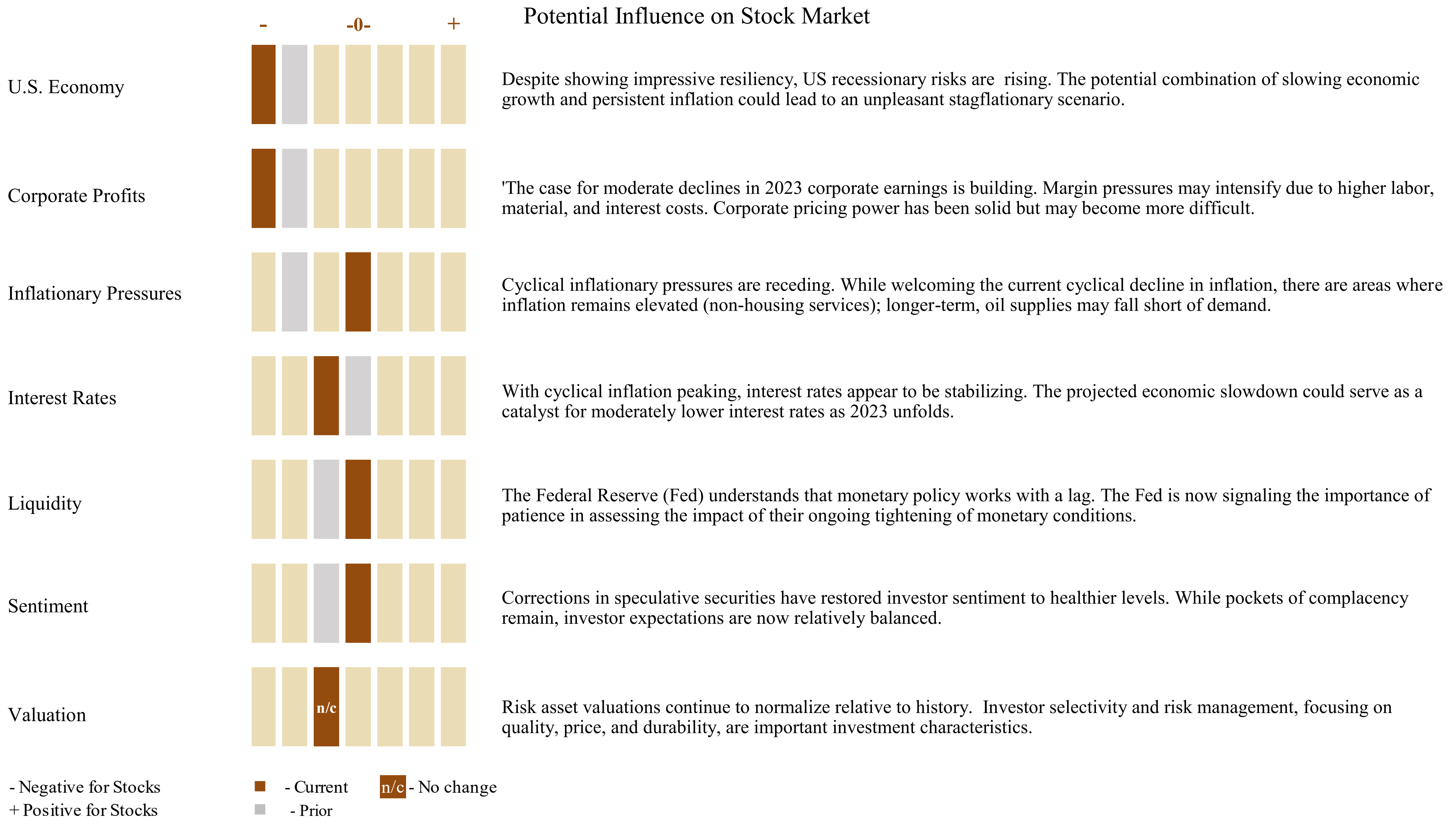
Source: Factset, Bloomberg, Moody's

Bond Yields Now Competing with Equity Earnings Yield



MACROECONOMIC SCORECARD: DECEMBER 31, 2022

Russia's full-scale invasion of Ukraine in February proved to be the tipping point for here-to-fore "transitory" inflation. As 2022 progressed, inflationary impulses became more entrenched. Global central banks responded in-kind with rapid and persistent interest rate hikes. Financial conditions tightened materially. Accordingly, there were few places to hide for global investors.



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Madison Investments Outlook & Strategy

We expect rates to remain range bound over the first quarter until Fed policy and market expectations converge. As the Fed and market viewpoints come together, we anticipate the inverted yield curve will re-steepen. Currently, we favor a shorter duration position while recognizing entry points for extending maturities could quickly change.

Over the near-term, 1-to-2-year maturities offer the highest yields, but opportunistically adding 7- to 10-year holdings will be necessary to enhance future returns. We believe the Fed will conclude its tightening cycle sometime during 2023, although fixed income markets are apt to be volatile in the interim.

Fixed Income Scorecard

	Potential Impact on Bond Returns: -			-0-			+	Madison Perspective
U.S. Macroeconomics								
Economic Growth				n/c				Economic growth will likely slow with increased unemployment. Inflation should gradually fall.
Employment				n/c				
Inflationary Pressures			n/c					
U.S. Policy								
Monetary (Fed)			n/c					The Fed will move short-term rates upward until inflation declines to tolerable levels. A split Congress will limit fiscal and regulatory changes.
Fiscal (Congress)			n/c					
Regulatory / Tax			n/c					
Global								
Foreign Economics			n/c					Global growth should slow as central banks raise rates to fight inflation. China's pandemic reopening could impact commodity prices.
Geopolitical tensions				n/c				
Central Bank Policies			n/c					
U.S. Corporates								
Credit Fundamentals			Current	Prior				Corporate balance sheets remain healthy, although economic uncertainties threaten profitability and the ability to borrow.
Risk Premiums			n/c					
Liquidity			n/c					
U.S. Treasury Market								
Interest Rates			n/c					Longer-term interest rates appear too low given persistent inflation and prospects for a soft landing.
Sentiment			n/c					

- Negative for Bonds ■ - Current n/c - No change
+ Positive for Bonds ■ - Prior

Source: Madison, Bloomberg

Factors Affecting Return Prospects

Potentially Positive for Bond Returns:

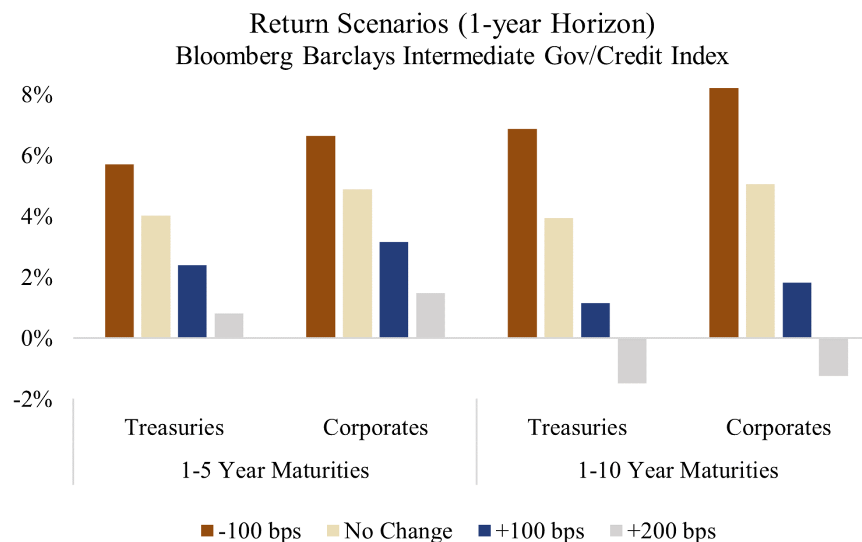
+ A significant yield curve inversion continues to signal concerns of recession and a peak in interest rates.
+ Rate sensitive sectors like housing are slowing as the lag impact of 2022 rate increases weigh on growth and pressure longer-term rates lower.
+ Bond valuations are much improved and reallocation to the sector from cash and riskier assets could support current or lower yields.

Potentially Negative for Bond Returns:

– Market expectations for the Fed to pivot on monetary policy (reduce rates) in the second half of 2023 may prove premature.

– A stalling of the initial improvement in goods inflation could be offset by stickier/higher service sector inflation measures.

– China's reopening and a resilient U.S. labor market could pressure prices and interest rates higher.



LEADING ECONOMIC INDICATORS POINT TOWARDS A RECESSION

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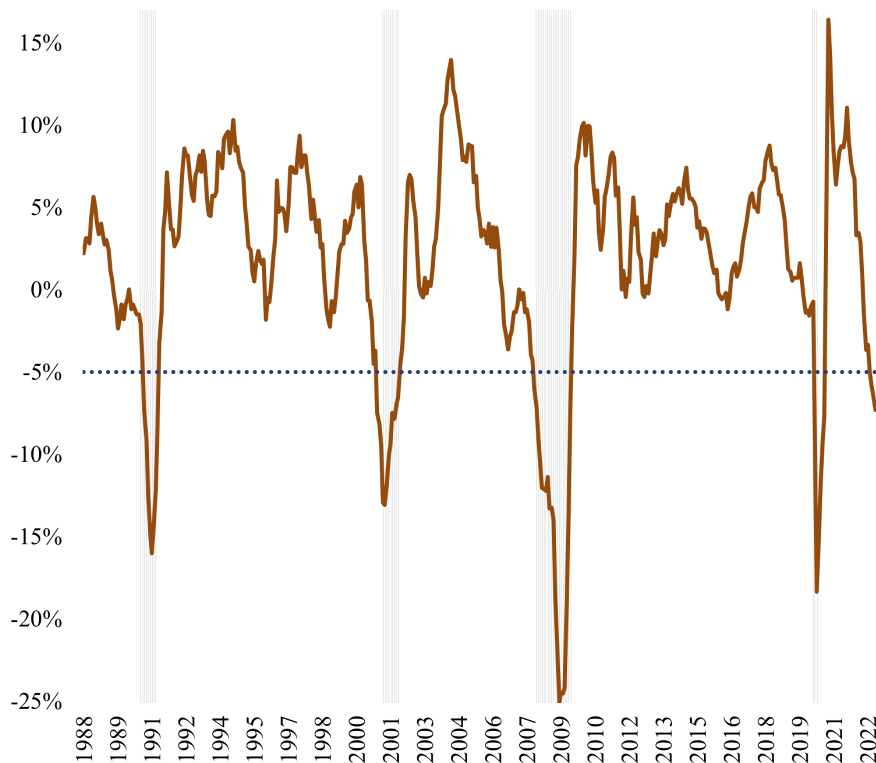

Many LEI Components Show Declines

	2022 Monthly Reading					
	Jun	Jul	Aug	Sep	Oct	Nov
1) Average Weekly Hours, Manufacturing	▼	▲	▼	▲	▼	▼
2) Average Weekly Initial Claims for Unemployment Insurance	▼	▼	▲	▲	▼	▼
3) Manufacturers' New Orders, Consumer Goods and Materials	▲	▼	▲	▲	▲	▲
4) ISM Index of New Orders	▼	▼	▼	▼	▼	▼
5) Manufacturers' New Orders, Nondefense Capital Goods Excluding Aircraft Orders	▲	▲	▲	▼	▲	▲
6) Building Permits, New Private Housing Units	▬	▼	▼	▲	▼	▼
7) Stock Prices, 500 Common Stocks	▼	▲	▲	▼	▼	▲
8) Leading Credit Index™	▼	▲	▼	▼	▼	▼
9) Interest Rate Spread, 10-Year Treasury Bonds Less Federal Funds	▲	▲	▲	▲	▲	▲
10) Average Consumer Expectations for Business Conditions	▼	▼	▼	▼	▼	▼
Net Contributions to Leading Index	▼	▼	▼	▼	▼	▼

- The Conference Board's Leading Economic Indicators Index (LEI) continues to show a negative trend.
- In the past, declines of at least –5% have foreshadowed the onset of a recession.
- We believe an economic slowdown is likely sometime during the next 12 to 18 months.

- Despite the LEI's negative path, positive economic signs do exist.
- Components including manufacturers' new orders, stock prices, and interest rate spread all provide a ray of hope the U.S. economy will avoid a major recession.
- From our vantage point, sidestepping an economic downturn or experiencing a soft landing.(i.e. mild recession) are definite possibilities.

Source: Madison, Bloomberg, Conference Board

THE TIGHT LABOR MARKET HAS PRESSURED WAGES HIGHER, A HEADWIND FOR LOWER INFLATION

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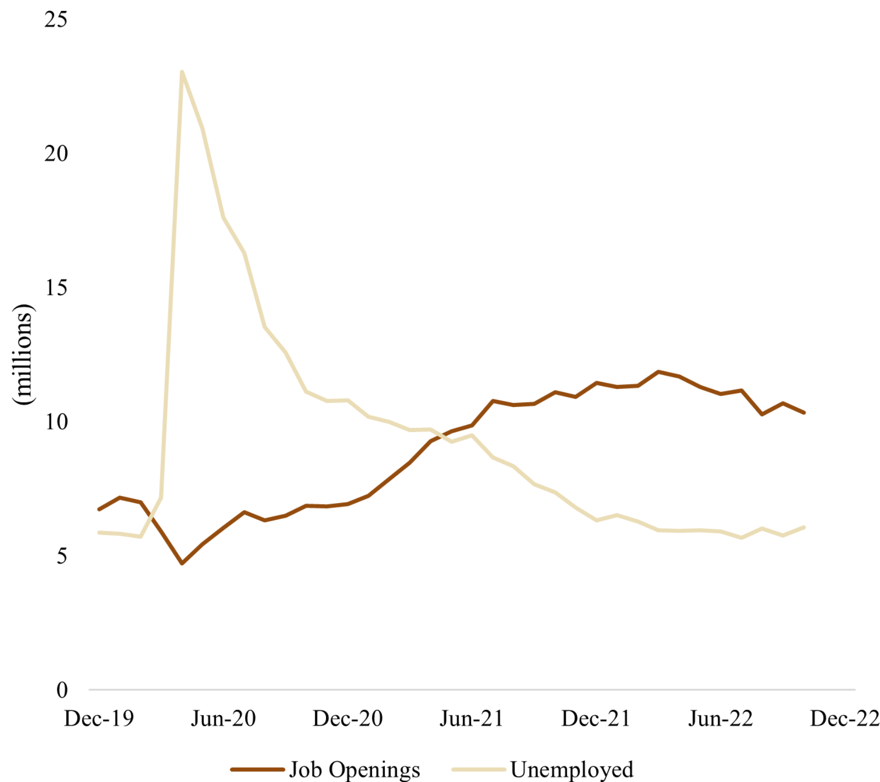

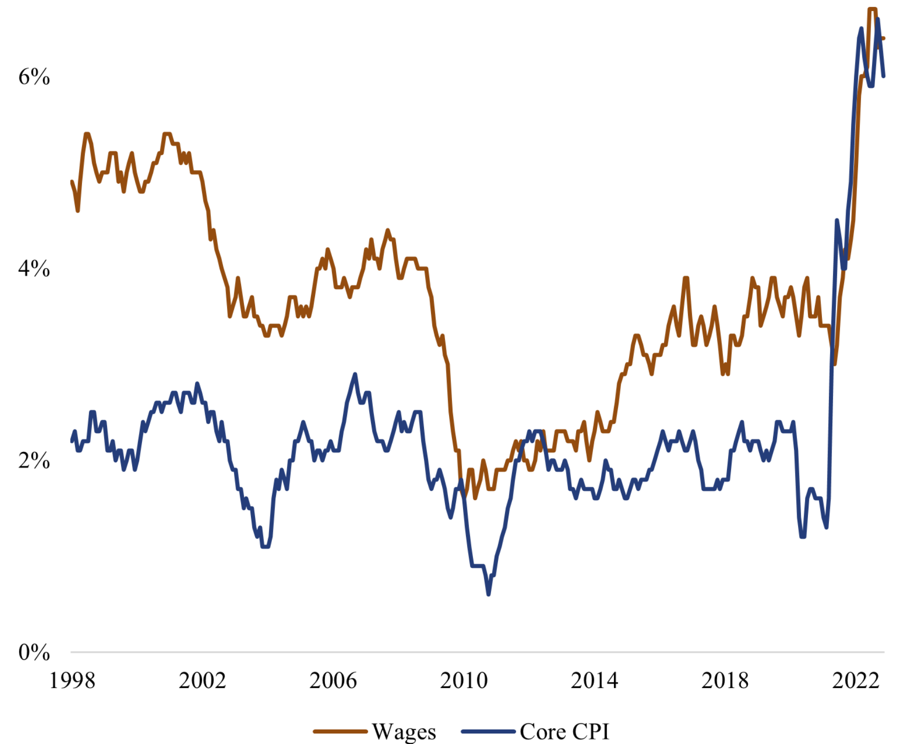

- The number of job vacancies is over 10 million with 1.7 job openings for every unemployed person.
- Although many companies laid off employees during the fourth quarter, most of the newly unemployed have successfully found new jobs.
- We believe the unemployment rate will move above 4%, especially if the Fed continues to raise rates.

- During the past six months, wages have mirrored the rise in core consumer prices which exclude the volatile food and energy components.
- Wage growth above 3.5% could complicate the Fed's efforts aimed at reducing inflation towards its 2% target.
- We foresee consumer prices falling towards 4%, although meaningful improvement beyond that level could take many quarters.

Source: Madison, Bloomberg, Atlanta Federal Reserve Bank

THE PROBABILITY OF RECESSION HAS INCREASED, ALTHOUGH RISK PREMIUMS DO NOT REFLECT THIS POSSBILITY

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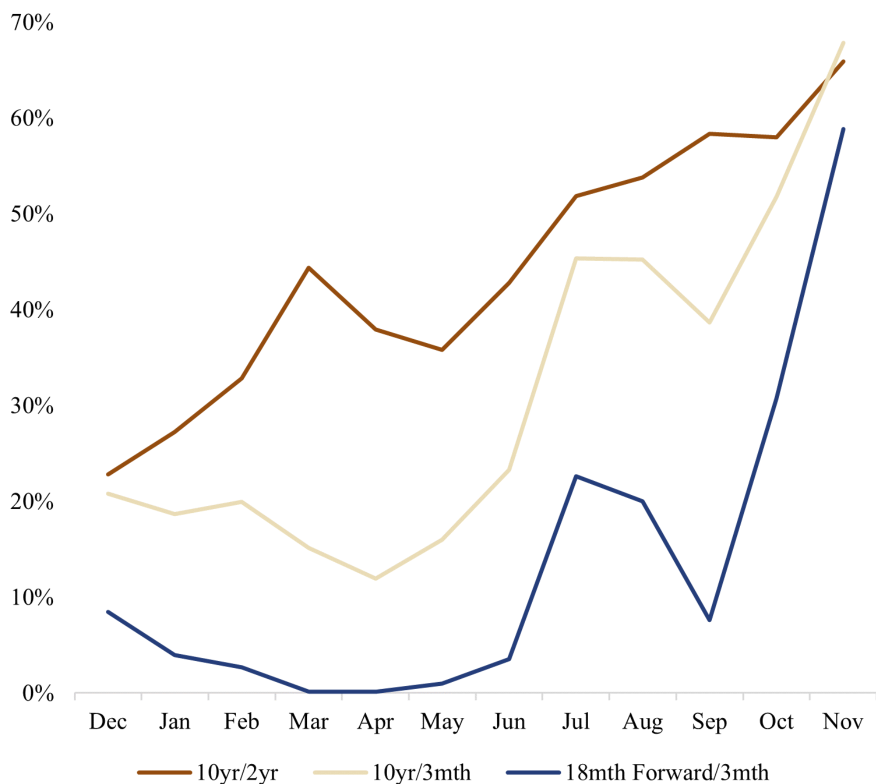

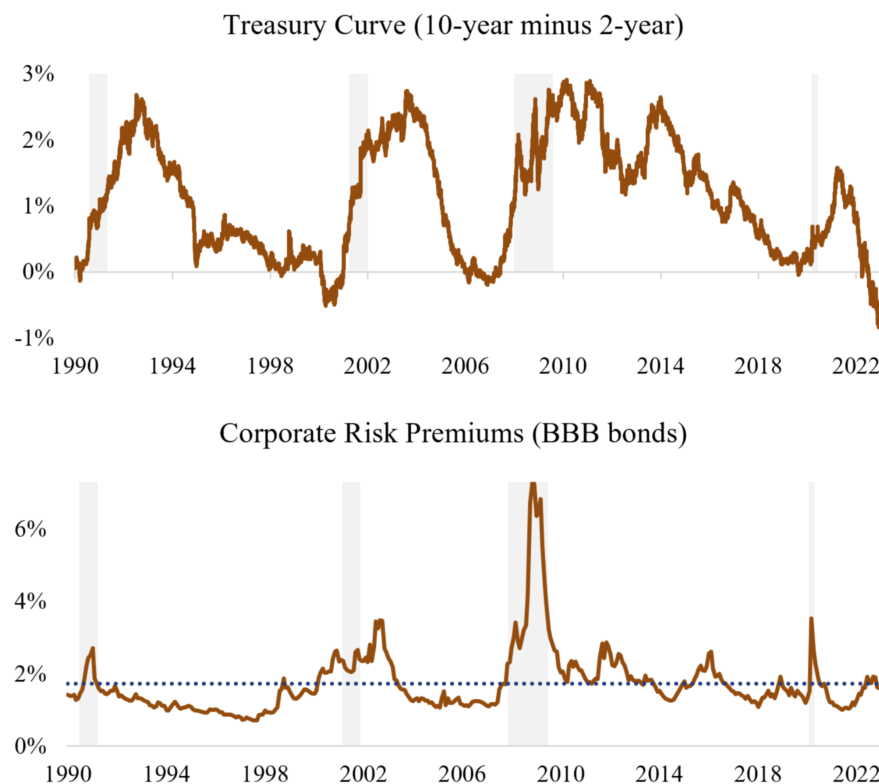

- Various Treasury curve measures all indicate a greater than 50% probability the U.S. economy will fall into recession.
- During the fourth quarter, the 18-month forward rate (i.e. market expectations for the 3-month T-bill yield in 18-months) fell below the current 3-month T-bill yield.
- According to the Fed, inversion of the 18-month forward yield versus the current 3-month T-bill is the best indicator of an upcoming recession.

- The inverted Treasury curve indicates an increased likelihood of economic stagnation.
- In contrast, corporate bond spreads are lingering near long-term averages and remain below levels suggestive of an impending recession.
- In our opinion, corporate bond valuations are expensive given we are in the latter stage of the credit cycle. We anticipate an opportunity to position corporate bonds at better prices should the economy inch towards recession.

Source: Madison, Bloomberg, ICE Global Indices

THE FEDERAL RESERVE AND FIXED INCOME INVESTORS HAVE DIFFERENT VIEWS ABOUT THE PATH OF SHORT-TERM RATES

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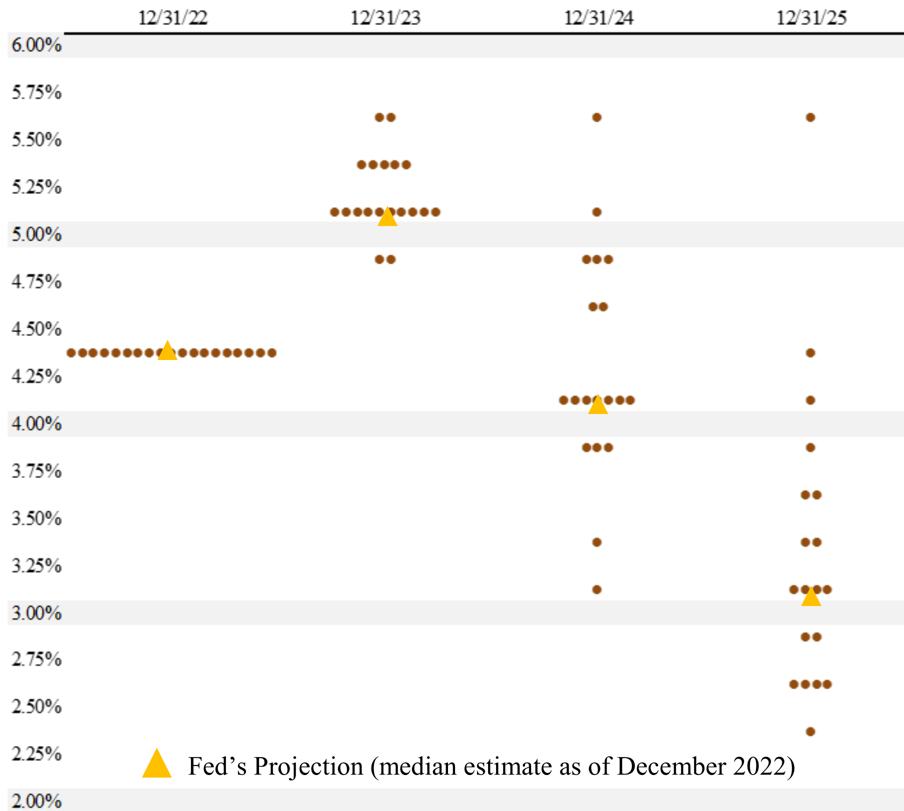

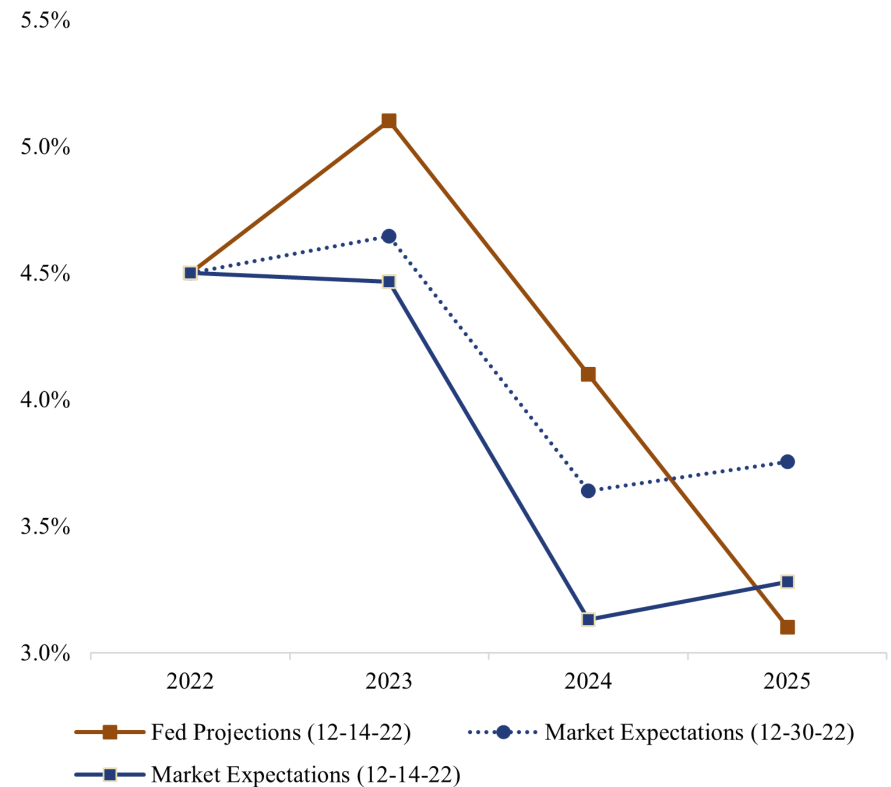

- In December, the Fed refreshed their Summary of Economic Projections.
- The Fed's projected policy path indicates a year-end federal funds rate of 5.1% in 2023, 4.1% in 2024, and 3.1% in 2025.
- As seen in the above graphic, there is immense dispersion among individual forecasts, especially in 2024 and 2025.

- The Fed expects short-term rates to reach 5.1% in 2023 before reversing course and dropping rates towards 4.0% in 2024.
- In comparison, the bond market anticipates the Fed will cease raising rates near 4.5% with rates falling towards 3.5% in 2024.
- This difference is due to vast uncertainty about the Fed's ability to lower inflation without hampering economic growth. We anticipate volatility to ensue until ample clarity is gained in the coming quarters.

Source: Madison, Bloomberg, Federal Reserve

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Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only, and do not represent the performance of any specific investment. Index returns do not include any expenses, fees or sales charges, which would lower performance.

All investments contain risk and may lose value. Equities may decline in value due to both real and perceived general market, economic and industry conditions. Investing in foreign-denominated and/or -domiciled securities may involve heightened risk due to currency fluctuations, and economic and political risks, which may be enhanced in emerging markets.

The S&P 500® is an unmanaged index of large companies, and is widely regarded as a standard for measuring large-cap and mid-cap U.S. stock-market performance. Results assume the reinvestment of all capital gain and dividend distributions. An investment cannot be made directly into an index.

The Dow Jones Industrial Average® (The Dow®), is a price-weighted measure of 30 U.S. blue-chip companies. The index covers all industries except transportation and utilities.

The MSCI Emerging Markets Index captures large and mid cap representation across 24 Emerging Markets (EM) countries. With 1,138 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

The MSCI EAFE (Europe, Australasia & Far East) Index is a free-float adjusted market capitalization index that is designed to measure developed market equity performance, excluding the U.S. and Canada. These indices are unmanaged. They are shown for illustrative purposes only, and do not represent the performance of any specific investment. Index returns do not include any expenses, fees or sales charges, which would lower performance.

The Bloomberg U.S. Municipal Index covers the USD-denominated long-term tax exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds and prefunded bonds.

The Bloomberg Emerging Markets Local Currency Government Index measures the performance of local currency Emerging Markets (EM) debt.

Bloomberg U.S. Government/Credit Bond Index includes securities in the Government and Corporate Indices. Specifically, the Government Index includes treasuries (i.e., public obligations of the U.S. Treasury that have remaining maturities of more than one year) and agencies (i.e., publicly issued debt of U.S. Government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. Government).

The Bloomberg U.S. Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, mortgage backed securities, asset-backed securities and corporate securities, with maturities greater than one year.

The Bloomberg Global Aggregate Bond Index is a flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

The Bloomberg Intermediate Govt/Credit Bond Unmanaged index that tracks the performance of intermediate term US government and corporate bonds.

The Bloomberg US Treasury Inflation-Linked Bond Index measures the performance of the US Treasury Inflation Protected Securities (TIPS) market.

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The Russell Midcap® Index measures the performance of the mid-cap segment of the U.S. equity universe. The Russell Midcap® Index is a subset of the Russell 1000® Index. It includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership.

RUSSELL MIDCAP® GROWTH: The Russell MidCap® Growth Index is designed to track those securities within the broader Russell MidCap Index that FTSE Russell has determined exhibit growth characteristics.

RUSSELL MIDCAP® VALUE: The Russell MidCap® Value Index is designed to track those securities within the broader Russell MidCap Index that FTSE Russell has determined exhibit value characteristics.

RUSSELL 2000®: Russell 2000®Index measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represents approximately 11% of the total market capitalization of the Russell 3000® Index.

The Russell 3000 Index measures the performance of the largest 3,000 U.S. companies representing approximately 98% of the investable U.S. equity market. The Russell 3000 Index is constructed to provide a comprehensive, unbiased and stable barometer of the broad market and is completely reconstituted annually to ensure new and growing equities are reflected.

RUSSELL 1000®: Russell 1000® Index measures the performance of the 1,000 largest companies in the Russell 3000® Index, which represents approximately 89% of the total market capitalization of the Russell 3000 Index.

RUSSELL 1000® GROWTH: Russell 1000® Growth Index is designed to track those securities within the broader Russell 1000 Index that FTSE Russell has determined exhibit growth characteristics.

RUSSELL 1000® VALUE: Russell 1000® Value Index is designed to track those securities within the broader Russell 1000 Index that FTSE Russell has determined exhibit value

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Bloomberg US Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market.

The VIX Index is a calculation designed to produce a measure of constant, 30-day expected volatility of the U.S. stock market, derived from real-time, mid-quote prices of S&P 500® Index (SPXSM) call and put options.

The Russell 2000® Value Index is designed to track those securities within the broader Russell 2000 Index that FTSE Russell has determined exhibit value characteristics.

The Russell 2000®Index measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represents approximately 11% of the total market capitalization of the Russell 3000® Index.

Russell Defensive Indexes® Index measure the performance of companies that have relatively stable business conditions which are less sensitive to economic cycles, credit cycles and market volatility based on their stability indicators.

The S&P 500® Equal Weight Index (EWI) is the equal-weight version of the widely-used S&P 500. The index includes the same constituents as the capitalization weighted S&P 500, but each company in the S&P 500 EWI is allocated a fixed weight - or 0.2% of the index total at each quarterly rebalance.

The Shanghai Stock Exchange Composite Index is a capitalization-weighted index. The index tracks the daily price performance of all A-shares and B-shares listed on the Shanghai Stock Exchange.

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