Market Review and Outlook
Q4 2022

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Market Environment

December 31, 2022

- Interest rates rose significantly in 2022, causing record losses in the bond market. Equity markets also suffered significantly, particularly in growth stocks. Short and intermediate term interest rates have hit their highest levels since 2007.

Index	Q4 2022 Return	Year 2022 Return
Aggregate Bond	+ 1.8%	-13.3%
S&P 500	+ 7.5%	-18.1%
Dow Industrials	+16.0%	- 7.0%
NASDAQ	- 0.8%	-32.8%

- Stock and bond markets were quite volatile, but on net staged a bit of a recovery in Q4 on moderating inflation.
- The equal weighted S&P 500 outperformed the market weighted index by 4% in Q4, and by about 7% for 2022.
- Inflation, interest rates, and prospects for Monetary Policy were the main drivers of market sentiment for the year. We saw significant volatility throughout 2022, caused by persistent false hopes of a Fed pivot from tightening to easing.
- The Fed raised rates 7 times from 0% to 4.375% and stated they will move above 5% in 2023 and hold until at least 2024.
- Short term Treasury rates now offer investors 4.5% yield, providing ample competition to higher risk assets.
- The Fed is also putting less liquidity in the market by winding down Quantitative Easing.
- Equity risk premiums continue to be inflated from the effects of years of excess stimulus that still needs to be extracted. The still high equity market valuations reflect high implied expectations for growth in corporate earnings.
- While economic activity is moderating in some sectors, the economy is not in the recession it is believed to be. The excessive stimulus of the past few years continues to provide a solid nominal level of activity.
- Q3 GDP was a strong 3.2%, made up of 7.6% nominal growth and 4.4% GDP price inflation (4.7% core).
- The jobs market continues to be strong, with historically low unemployment (3.5%), 10+million job openings, minimal layoffs, and strong wage gains. This strength has supported to the inflationary environment, however at a lower rate.
- Energy and other "goods" prices have moderated with demand. Meanwhile, demand and costs for "services" remain robust.
- Input costs (commodities, raw materials, freight, transportation) have come off their highs recently, but are still high. Companies are passing these costs, along with higher employment costs, to final prices.
- Geopolitical risks are rising rapidly with economic conditions being challenged in many major countries.
- Market expectations for 2023 include a high probability of recession, with a significant decline in inflation, and a Fed ease.

Market Environment

December 31, 2022

- **Policy**
  - The Fed tightened rates 7 times for 425 basis points, including four consecutive 75bp moves before downshifting the latest incremental hike to a still significant 50bp in December. This is a year long effort to catch up after falling so far behind the inflation curve.
  - At the December meeting, the Fed Funds rate mid-point was moved to 4.375%, (highest since 2007), revealing that 17 of 19 Fed members see the rate mid-point at 5.125% by the end of 2023. This implies 2-3 more hikes totaling 75bp.
  - The Fed has also made the point they will continue to unwind their Quantitative Easing by letting MBS and Treasuries roll off.
  - After more Fiscal stimulus packages were passed again in 2022, Congress passed a $1.7 trillion budget for 2023, representing significant increases in spending. Meanwhile, spending from previously passed packages is beginning to be deployed.
  - The dynamics of Energy policy, conflicting fossil fuels and alternative energy, will be exacerbated in 2023 as aggressive goals for transition begin to get tested. Recently, inadequate alternative capacity has stressed systems and led to increased use of coal, oil and gas, while buildout of alternative energy sources are seeing increased cost pressures and supply chain issues.
- **Markets**
  - Equity markets posted a strong rebound in Q4 amid decelerating inflation and false hopes for the Fed to stall and/or reverse policy.
  - Market valuations imply inflation reverting to the Feds 2% inflation target with corporate earnings growth of around 6+%.
  - Market Expectations also incorporate a relatively high probability of recession, which contributes to the argument for lower inflation and Fed easing. However, this is contradicted by high current market valuations for equities.
  - Value stocks such as Energy, Utilities, Healthcare and Industrials have fared well given higher dividends and relative stability. Bank and finance stocks lagged in Q4 on fears of recession induced loan losses and an inverted yield curve.
  - Growth stocks remain under pressure amid higher interest rates and declining earnings, with the NASDAQ finishing near its lows.
  - Market interest rates have been fighting the Fed, with short-term rates holding near current Fed Funds rates and rates on longer maturities remaining lower. Market expectations of the Fed policy rate are well below the Fed's own outlook for the rate in 2023.
  - Mixed messages from Fed Chair Powell increased uncertainty and created significant market volatility through hope of a "pivot".
  - Market and economic headwinds and tailwinds are still coming together as the Fed accelerates rate hikes well above previous market expectations and inflation seeps deeper into the economy. The Feds own rate targets are again higher than in the previous quarter.
  - To date, those companies that have increased prices, and have product to sell, have been rewarded. However, overall volumes are declining due to higher prices. This could limit additional price rises and potentially reduce earnings growth.
  - Equity markets will be very focused on corporate earnings growth, looking for pre-announcements on guidance.
  - Short-term fixed income securities are now yielding more than they have 15 years, providing a high level of income that may significantly offset price volatility. Some Mortgage-Backed Securities and Corporate bonds may add to that yield.
  - Longer term fixed income securities may still be vulnerable to rising rates and falling prices.

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Market Outlook

December 31, 2022

- Inflation, economic growth, interest rates, corporate earnings, global trade and geopolitics will drive markets in 2023.
- While the market and the Fed are currently in a shouting match over the level of interest rates should be, the market will be less preoccupied with Fed policy by mid-year, and no new Fiscal policy moves are likely.
- Inflation is decelerating in interest-sensitive sectors amid reduced demand for higher-priced goods. Services, which make up 66% of the US economy, continue to see upward pressure on prices due to still tight labor markets and rising wages.
- Overall economic growth continues to show broad strength as nominal GDP ran at 7.6% in Q3 2022, and will likely continue at a high rate, but largely offset by high inflation. Strong nominal activity will likely support continued strength in employment and inflation.
- We may see a significant decline in "open jobs" caused by a general deceleration in trends of robust production and sales of goods, along with service jobs being filled. However, this doesn't necessarily signal a large swing to higher unemployment.
- Global trade is shifting with an attempt at onshoring production. With exports from China receding, imports are growing from other countries. Reshoring and nearshoring production requires significant investment and political relationship building that will be unfolding going forward but will take much longer to implement than may be expected.
- The massive amount of Fiscal stimulus passed for infrastructure, semiconductors, alternative energy, electric vehicles, etc. will begin to be deployed, however the push to accelerate these efforts will be challenged by higher costs and supply chain challenges.
- Earnings growth will be a central focus for equity markets. However, inflation and borrowing needs will drive interest rates and bond prices, thus influencing equity markets. Fed policy will become less of a focus as much of their job is done.
- We feel that corporate earnings growth expectations remain too high and will weigh on the broad market, while some sectors of the market remain, or have become undervalued.
- Volatility will surely continue amid rising rates with the 10-year Treasury reaching above 4% and a real risk of S&P 500 reaching 3200 or below due to reduced forward earnings growth and declining P/E ratios.
- Short-term interest rates have reached a level consistent with what we feel is close to an appropriate target of Fed Funds, while longer term interest rates may still have further to rise. Short-term, high quality securities over 4.5% yield present good value.
- Financial and risk assets have been the beneficiary of excess stimulus in the system for many years and are now faced with its removal. A secular shift is occurring, and it is important to view the markets and economy in a 40 year window rather than a 3 year window.
- We have begun to see substantial stress and declines in unprofitable companies living off free capital that is going away.
- Geopolitics is evolving in dramatic fashion, and will surely impact global economics, markets, and society.

Investment Strategy

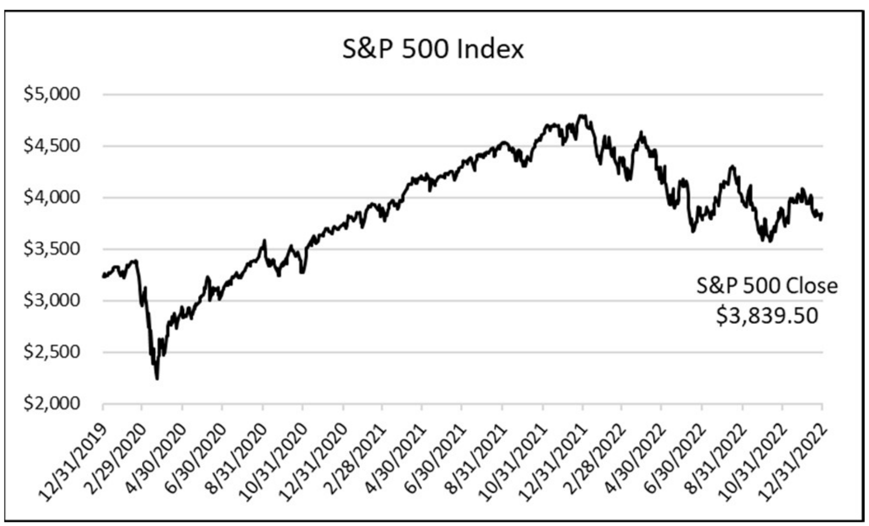
December 31, 2022

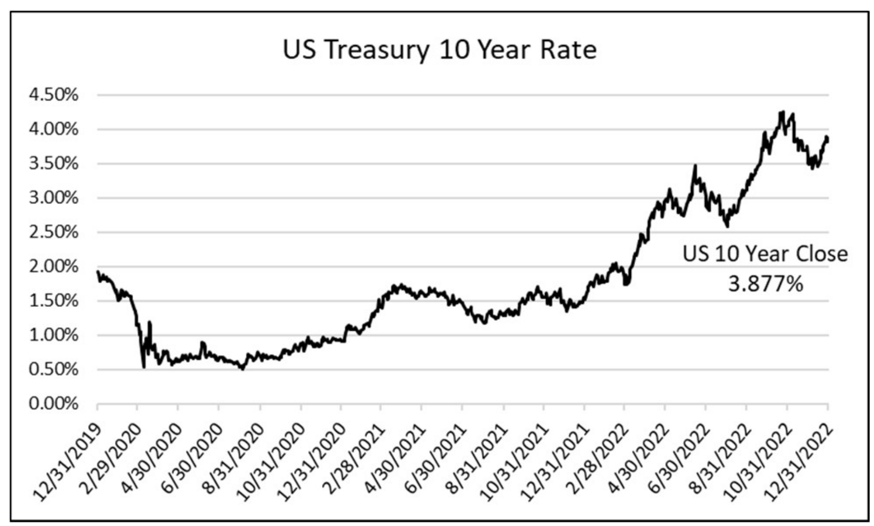
- We remain defensive in both equity and fixed income markets amid growing earnings pressures and rising interest rates.
- Investment strategy continues to maintain a more significant underweight to equities at -15% relative to neutral strategic asset allocation in favor of fixed income assets. There is no allocation to cash, given higher yielding short-term fixed income.
- The fixed income allocation is focused on short term US Treasuries at now over 4.5% yield while also adding high coupon GNMA Mortgage-Backed securities (full faith and credit of US Government) near 5.5% yield.
- We continue to maintain corporate credit exposure, but also short term in nature given risk of significant spread widening. Where appropriate, we incorporate a short duration High Yield allocation as those yields have risen significantly relative to their risk.
- Maintain Treasury Inflation Protected Securities (TIPS) as implied inflation remains well below reality and our expectations.
- Equity investment strategy has maintained a reduced overall equity allocation, particularly in Growth sectors and maintaining positions in high quality dividend paying Value stocks and short-term fixed income.
- Within equities, Utilities, Energy, Banks, Healthcare, and Industrials are primary areas of focus. We continue to implement an "equal weight" strategy to minimize "FAANG+" exposure.
- Inflation pressures have diminished in interest rate sensitive and goods sectors, but overall inflation remains high as input costs such as wages continue to move higher. Profit margins may contract as consumers begin to reject higher prices.
- We will be watching inflation's impact on demand for elastic and inelastic consumption for clues on changing consumer behavior and the resulting implications across industries and companies.
- As we move into 2023, higher interest rates, inflation, energy costs, and a growing debt burden will increase the risk of decelerating economic activity and earnings. Earnings growth expectations and P/E ratios remain too high.
- Geopolitical risks have increased recently and may have consequences on the global economy.
- Significant economic activity remains in the system that should mitigate risk of deep recession. However, continued high inflation pressures increases uncertainty on corporate profits. Company specific management will be a differentiator.
- Higher prices themselves have and may continue to reduce aggregate demand.

Market Review

December 31st, 2022

- Equity markets remain volatile as the S&P 500 regained 14% early in the quarter, before falling back almost -6% coming into the close of the year for a net Q4 return of +7.5%.
- For the year 2022, the S&P 500 total return was down a little more than -18%. The losses were led by Growth oriented companies, while Value stocks performed better.
- Inflation and aggressive Fed tightening policy drove interest rates higher all year, generating record losses in the bond market.
- While inflation has decelerated, providing markets with hopes of a pause, or even reversal of Fed policy, it remains high and broad enough to keep the Fed on course.
- The Fed has committed to even higher rates, while both equity and fixed income markets are pricing in a reversal of policy, in a disagreement with the Fed.

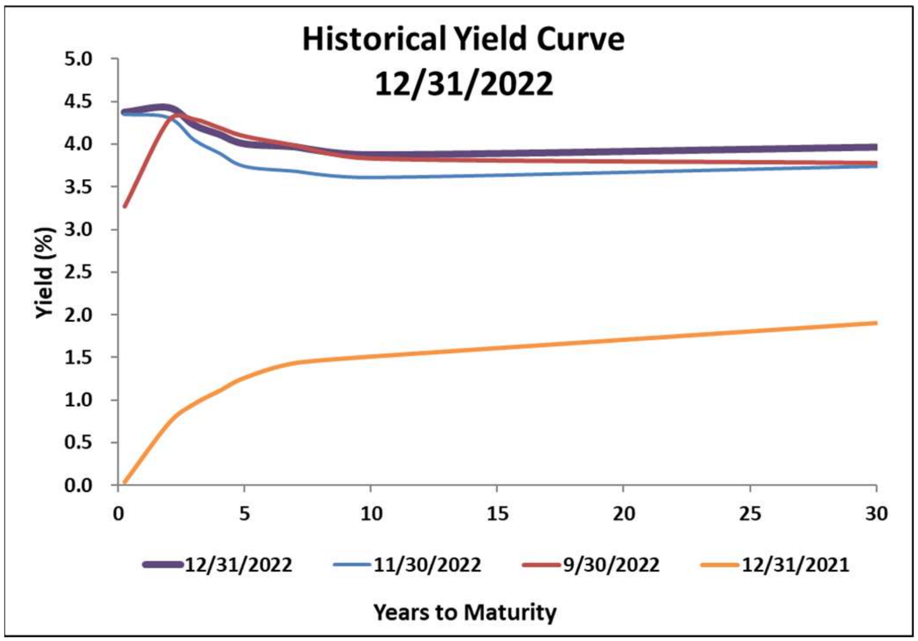


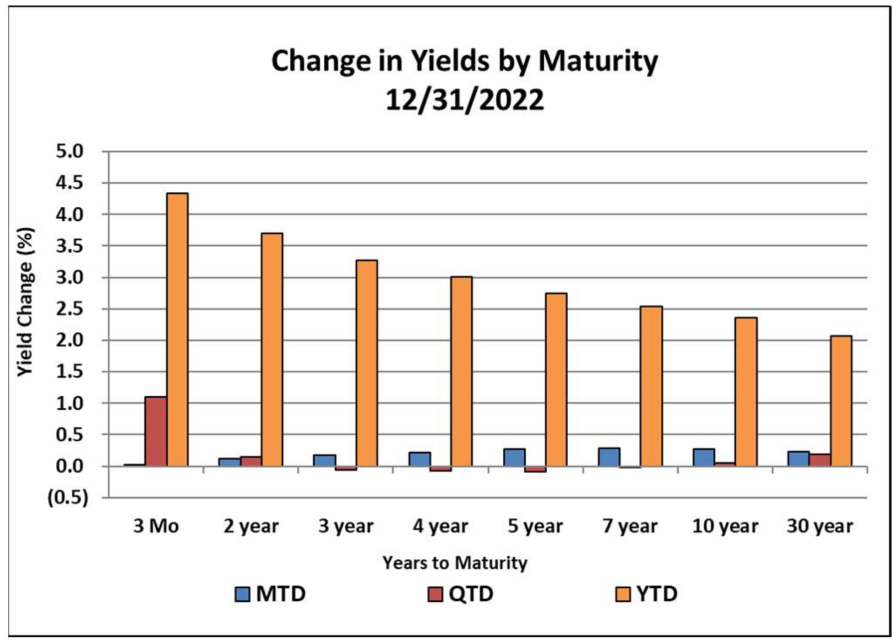


Market Review

Yield Curve – December 31st, 2022

- Interest rates were mixed in Q4 after another very volatile quarter with interest rates trading in an 80 basis point range. Short term rates settled in up around the 4.5% current Fed rate, while long term rates rose.
- For all of 2022 interest rates rose dramatically, led by short term rates that reflect Fed policy expectations, but with long term rates also rising significantly, reflecting higher growth and inflation rates.
- The markets are over reacting to any information that may potentially influence Fed policy, which promises higher rates for longer than the market is currently pricing in, suggesting continued volatility..
- The Fed has increased their own expectations of where rates would go, above 5%, and hold there, while also continuing to unwind Quantitative Easing.

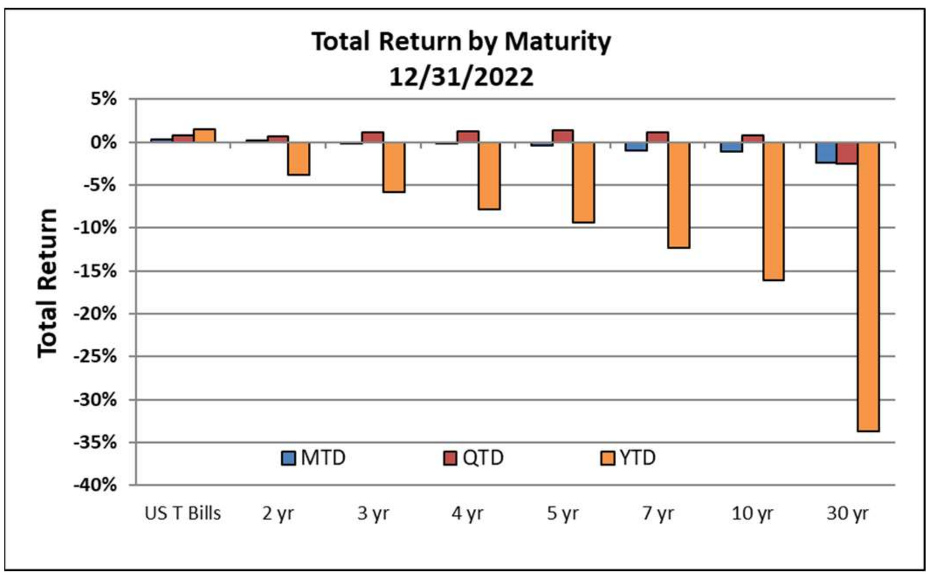


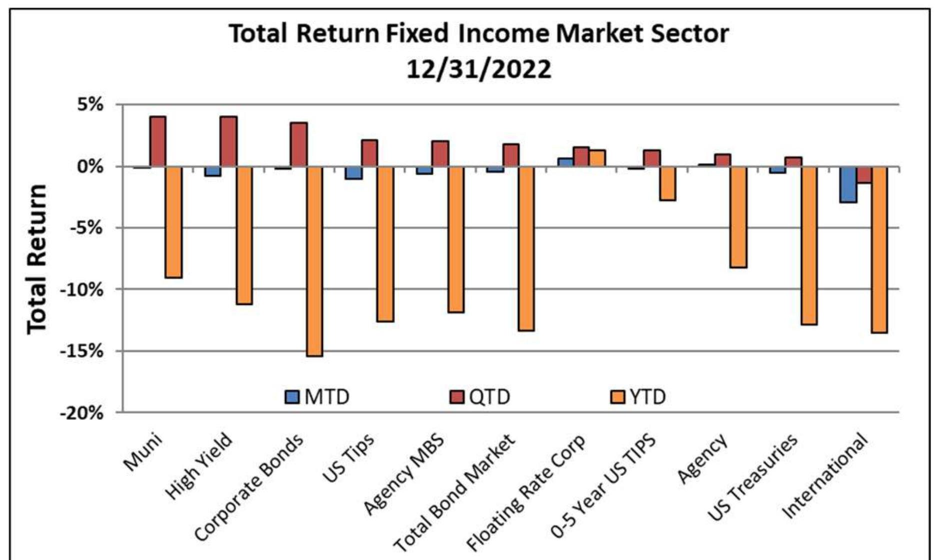


Market Review

Yield Curve and Sector Returns – December 31st, 2022

- The slight change in rates in Q4 enabled short and intermediate bonds to generate some positive returns through income, while the longest maturities suffered some losses on higher long rates.
- For all of 2022, the bond market generated the worst total returns in history at down -13.3%, led by the most interest rate sensitive long term maturities; however. Only the shortest T-Bills were positive.
- Aside from international bonds, US Treasuries as a whole were the worst performers for the quarter, and among the worst for the year given the almost -35% negative return for the long 30 year bond.
- Income oriented sectors such as Corporate bonds and Mortgages performed well in Q4, but were otherwise punished in 2022 as yield spreads widened in addition to rising rates.
- Longer term securities are still vulnerable with inflation high and the Fed still unwinding Quantitative easing. Short term rates may now have sufficient income to offset further price volatility.

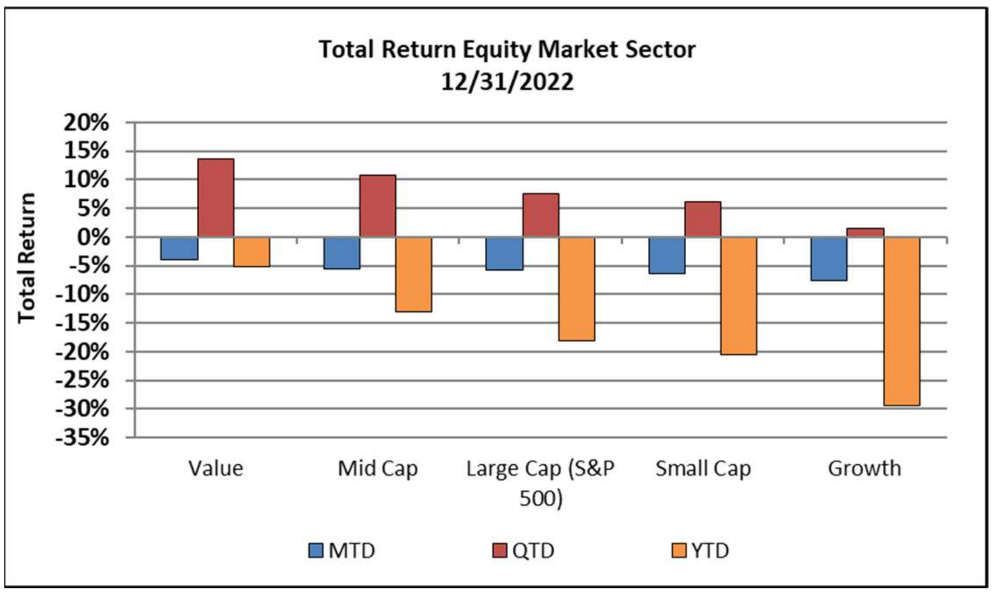


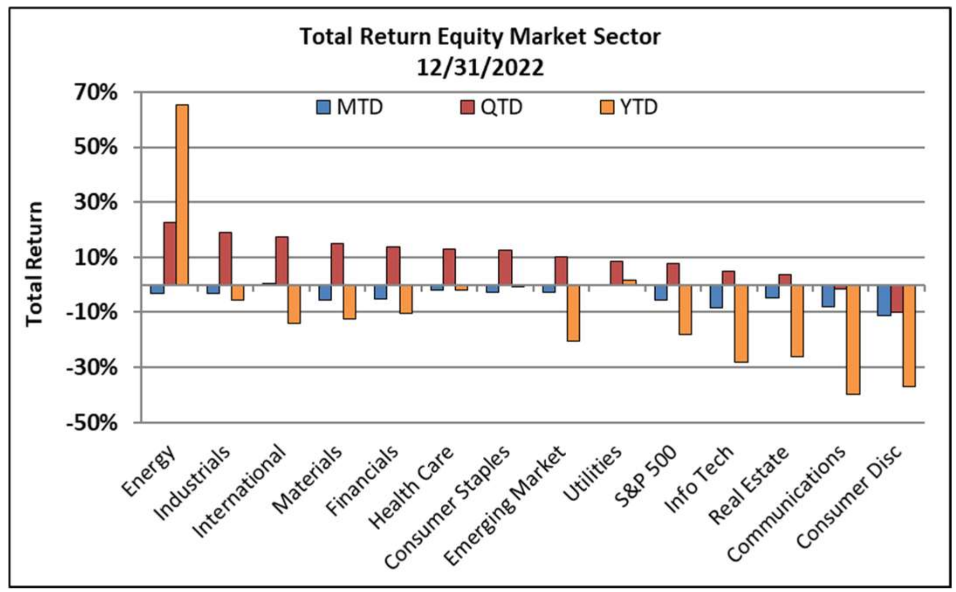


Market Review

Equity Market Returns – December 31st, 2022

- Equity markets were also volatile amid persistent hope of the Fed pivoting on interest rate policy.
- Amid decelerating inflation equities staged a significant early Q4 rebound, gaining 14%, before given half of that back in December amid still strong jobs market and a determined Fed to keep raising rates higher.
- Value stocks put in a strong performance relative to Growth in Q4, and for the year 2022. The equal weighted S&P beat the market weighted by a large margin in Q4 and for the year 2022.
- Energy was again the top performer for Q4, and was by far the best performing sector for all of 2022.
- Consumer discretionary and communication stocks turned back down in Q4 and were the worst performing sector in 2022.
- The "FAANG" stocks were under significant pressure in Q4 after being resilient for much of the year.





Market Scoreboard

December 31st, 2022

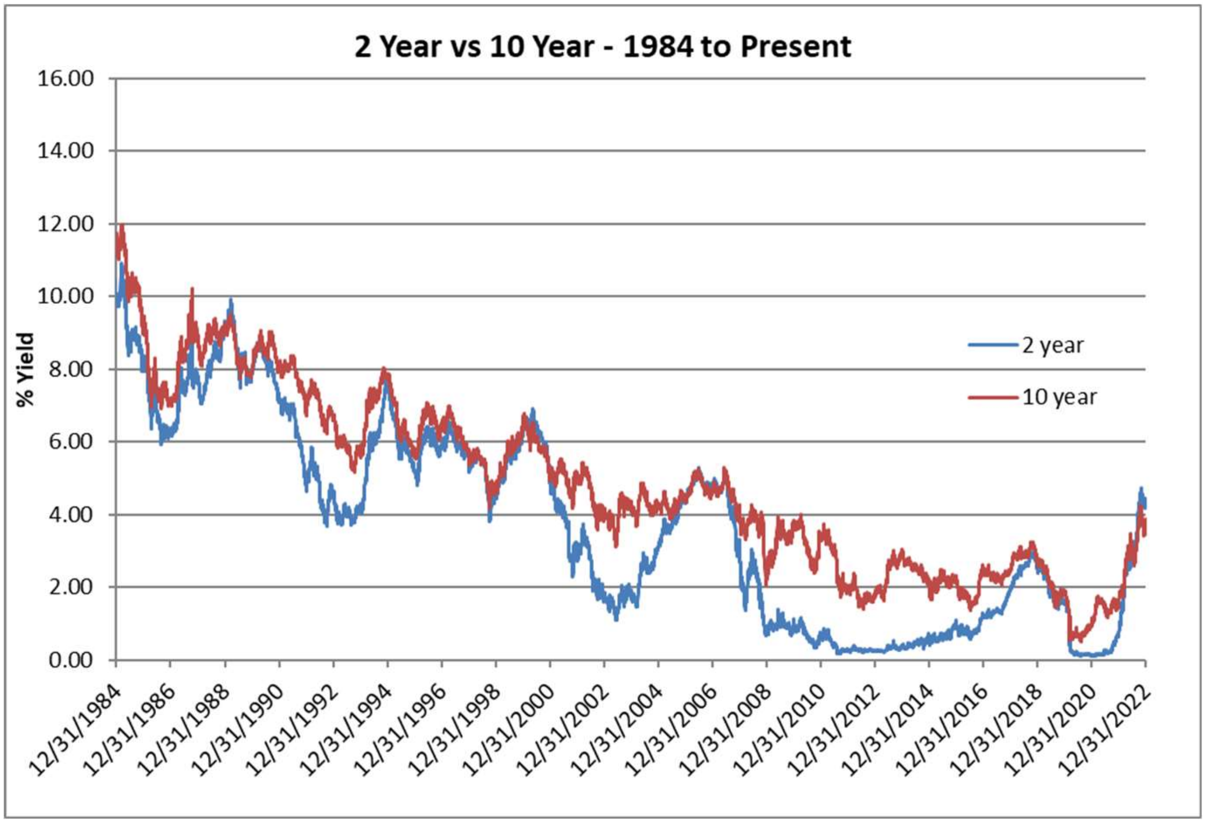
Market Summary - December 31, 2022				
Bond Market	**MTD**	**QTD**	**YTD**	**Yield**
Total Bond Market	-0.4%	1.8%	-13.3%	4.7%
US Treasuries	-0.5%	0.7%	-12.9%	4.2%
US TIPS (Inflation Prot.)	-1.0%	2.1%	-12.6%	1.9%
Corporate Bonds	-0.2%	3.5%	-15.4%	5.5%
Floating Rate Corp	0.6%	1.5%	1.3%	4.1%
US MBS Index	-0.6%	2.1%	-11.9%	4.7%
High Yield Corporates	-0.8%	4.0%	-11.2%	8.9%
Merrill Muni Index	-0.1%	4.0%	-9.0%	3.1%
International Bonds	-2.9%	-1.4%	-13.5%	2.2%
Commodities/Other	**MTD**	**QTD**	**YTD**	**End Value**
Oil (WTI)	-0.5%	4.7%	16.7%	80
Gold	3.1%	9.8%	-0.3%	1,824
Dollar Index	-2.3%	-7.7%	8.2%	104

Market Summary - December 31, 2022				
Stock Market Indices	**MTD**	**QTD**	**YTD**	**End Value**
DOW Jones Avg.	-4.1%	16.0%	-6.9%	33,147
NASDAQ Composite	-8.7%	-0.8%	-32.5%	10,466
Large Cap Core (S&P 500)	-5.8%	7.5%	-18.1%	3,840
Large Cap Growth	-7.6%	1.4%	-29.4%	2,361
Large Cap Value	-3.9%	13.6%	-5.3%	1,435
Mid Cap Core	-5.5%	10.8%	-13.1%	2,430
Mid Cap Growth	-6.0%	8.7%	-19.0%	1,110
Mid Cap Value	-5.0%	12.7%	-7.0%	810
Small Cap Core	-6.5%	6.2%	-20.5%	1,761
Small Cap Growth	-6.4%	4.1%	-26.4%	7,894
Small Cap Value	-6.6%	8.4%	-14.5%	14,183
Europe	0.4%	23.5%	-16.7%	410
England	-0.2%	18.1%	-6.5%	7,452
Japan	-0.6%	11.3%	-18.6%	28,792
Shanghi 300	3.5%	5.2%	-26.1%	3,872
International	0.1%	17.4%	-14.1%	1,944
MSCI China	5.2%	13.5%	-21.9%	479
Emerging Markets	-2.6%	10.3%	-20.6%	38

Market Review

Yield Curve Scenario Analysis – December 31st, 2022

- Short term rates have finally moved in similar magnitude as past tightening cycles with two year notes rising 400 basis points. With that said, rates remain relatively low by long term historical norms.
- Longer term yields have also moved in similar significant fashion, yet are also still low on an absolute basis.
- Although moderating, the rise in inflation currently dwarfs anything seen since 1984, so further upward rate moves are possible.

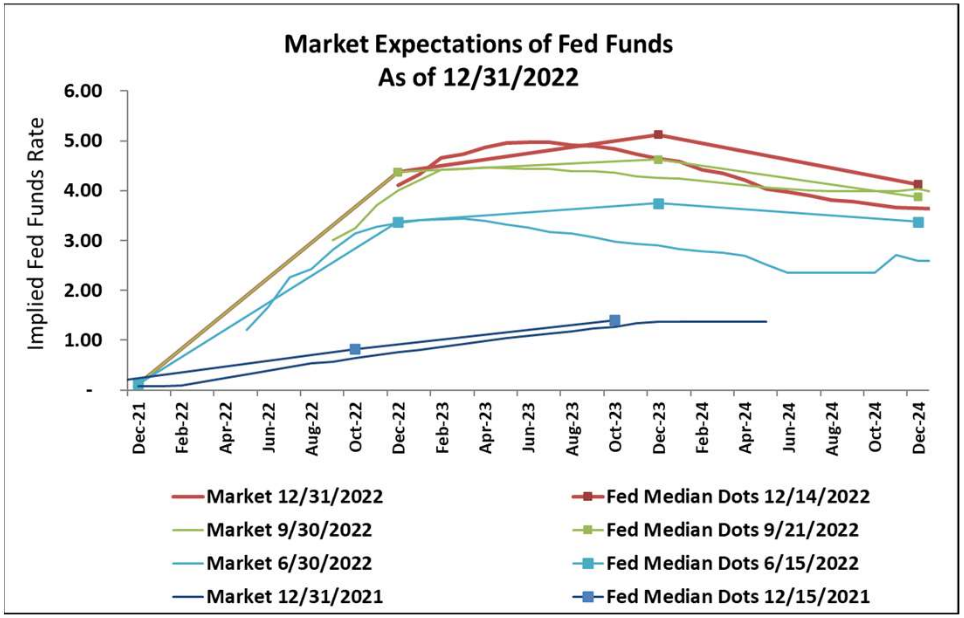


Market Review

Monetary/Fed Policy – December 2022

Federal Reserve Median Economic Projections As of 12/31/2022						
Change in GDP	**Actual**	**2022**	**2023**	**2024**	**2025**	**Longer Run**
December 2022 Projection		0.5	0.5	1.6	1.8	1.8
September 2022 Projection		0.2	1.2	1.7	1.8	1.8
June 2022 Projection		1.7	1.7	1.9		1.8
Actual Q3 2022 yoy/qoq	**1.9%/3.2%**					
Unemployment Rate						
December 2022 Projection		3.7	4.6	4.6	4.5	4.0
September 2022 Projection		3.8	4.4	4.4	4.3	4.0
June 2022 Projection		3.7	3.9	4.1		4.0
Actual September 2022	**3.5%**					
PCE Inflation						
December 2022 Projection		5.6	3.1	2.5	2.1	2.0
September 2022 Projection		5.4	2.8	2.3	2.0	2.0
June 2022 Projection		5.2	2.6	2.2		2.0
Actual November 2022	**5.5%**					
Core PCE Inflation						
December 2022 Projection		4.8	3.5	2.5	2.1	
September 2022 Projection		4.5	3.1	2.3	2.1	
June 2022 Projection		4.3	2.7	2.3		
Actual November 2022	**4.7%**					
Projected Policy Path- Fed Funds						
December 2022 Projection		4.4	5.1	4.1	3.1	2.5
September 2022 Projection		4.4	4.6	3.9	2.9	2.5
Actual December 2022	4.5					

- The Fed hiked interest rates to a range of 4.25 – 4.5% in its December Meeting and stated an objective of over 5%.
- The Fed continues to chase reality in their economic projections and reacting by shifting policy rate expectations accordingly. As they have all year, the Fed raised their rate projections by another 50bp at the December meeting.
- The markets continue to discount the Fed's resolve, and maintain a lower funds rate than Fed expectations and continue to carry hope and expectations of a "Fed Pivot".



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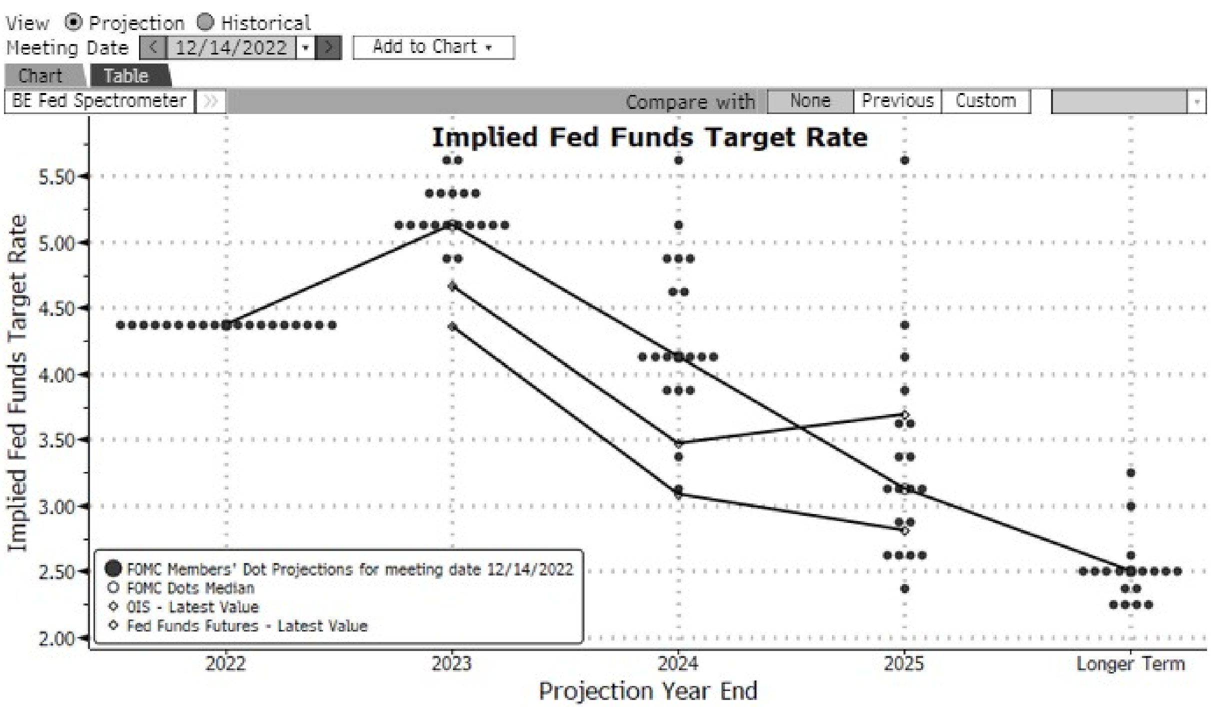
Market Review

Monetary Policy – December 2022

- The Feds Dot Plot shows all Fed Governors thoughts on where rates will be at each time period, with the median suggesting a rate just over 5% by year end 2023, an increase from their previous meeting.
- All Governors agreed with the decision to raise interest rates by a reduced but still significant 50bp in December, and 17 of 19 Fed members declared expectations of the Funds rate to be over 5% at year end 2023, at odds with the market.
- Inflation expectations remain extremely low as implied by TIPS at just over 2% for the next 2, 5, and 10 years, and remains well below actual inflation and our expectations.



Current Fed Funds Rate
4.33

10 Year Tip	10 Year UST	Implied Inflation Premium
1.57	3.87	**2.31**

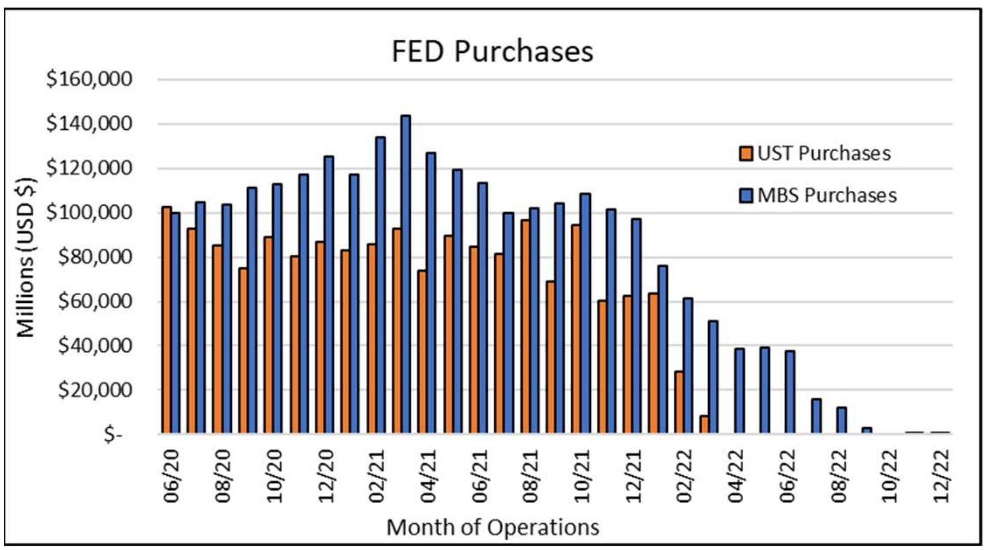
5 Year Tip	5 Year UST	Implied Inflation Premium
1.64	4.00	**2.37**

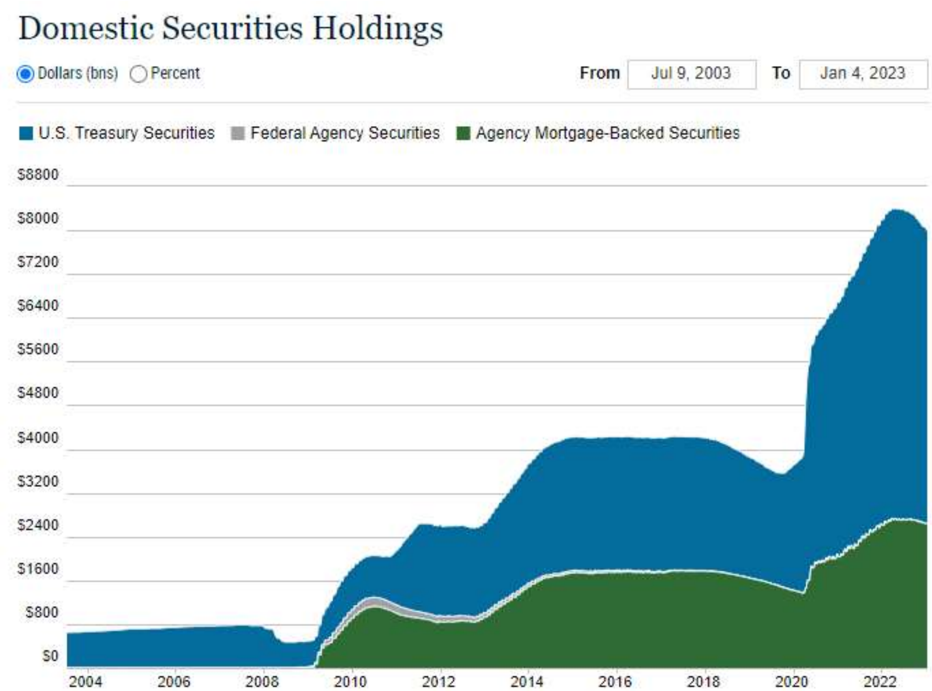
2 Year Tip	2 Year UST	Implied Inflation Premium
2.16	4.43	**2.27**

Market Review

Fed Purchases – December 2022

- The FED stopped purchasing additional US Treasuries in March of 2022 and brought its Mortgage Purchasing operations to a close in September 2022 and has started to wind down its balance sheet.
- Since then, the Fed has conducted several "small dollar" operations. Reinvesting bonds in excess of their monthly cap, to help facilitate the wind down of their balance sheet as bonds mature and roll off.
- In sum since 6/1/2020 the Fed has purchased: $1.684 Trillion in US Treasuries and $2.477 Trillion in Mortgage-Backed Securities to "maintain liquidity" and further stimulate the economy, which is currently running with inflation accelerating through 40-year highs.





Market Review

Fiscal Policy – December 2022

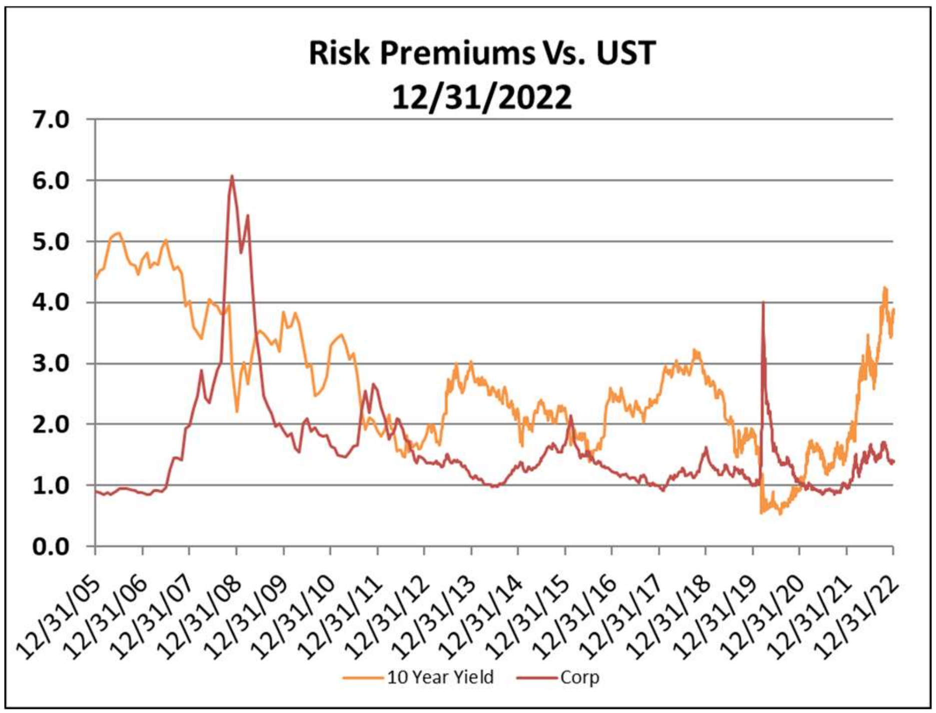
- Since the start of the Covid-19 Pandemic, more than 7 Trillion dollars in fiscal spending to help support and inflate the U.S. and Global Economy.
- Much of the initial programs included single use transactions (i.e., one-time checks to individuals). However, much of the later plans include infrastructure and other investment spending.
- The packages passed since the Virus related include significant infrastructure spending that will now be deployed and will work to keep a base level of economic activity as we move through 2023.
- In December, Congress passed a $1.7 Trillion fiscal year 2023 omnibus (discretionary) spending bill, a significant increase over the lofty $1.5 Trillion from fiscal 2022.

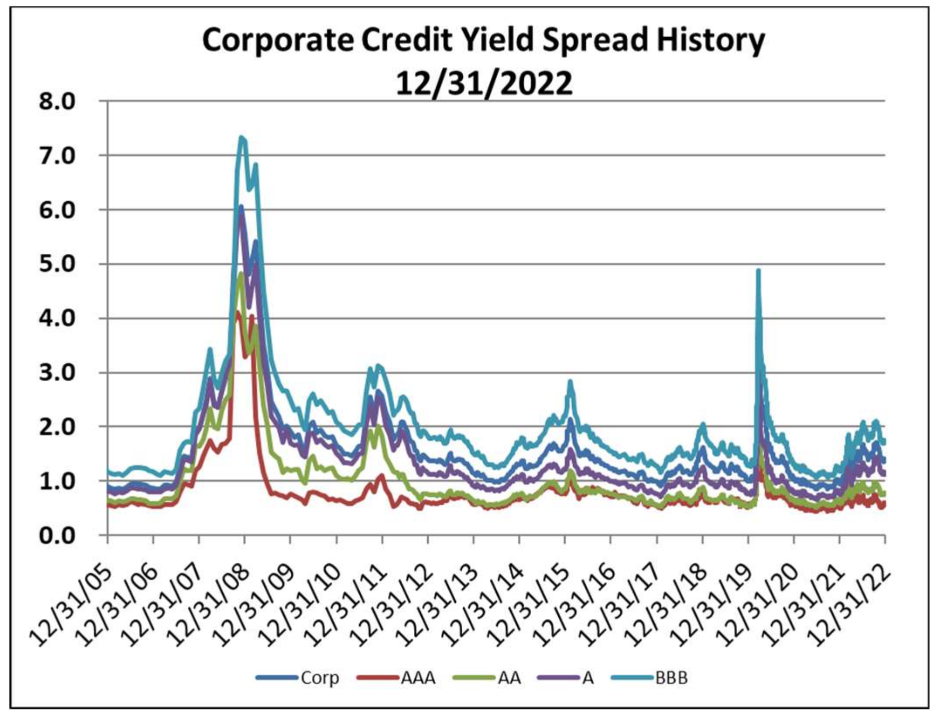
Date	Congressional Act	Estimated Cost
Mar-20	Coronavirus Preparedness and Response Supplemental Appropriations Act	$ 8,300,000,000
Mar-20	Families First Coronavirus Response Act	$ 192,000,000,000
Mar-20	The Coronavirus Aid, Relief, and Economic Security (CARES) Act	$ 2,000,000,000,000
Apr-20	Paycheck Protection Program and Health Care Enhancement Act	$ 483,000,000,000
Dec-20	Consolidated Appropriations Act, 2021	$ 868,000,000,000
Mar-21	American Rescue Plan	$ 1,900,000,000,000
Nov-21	Infrastructure Investment and Jobs Act	$ 1,200,000,000,000
Aug-22	CHIPS and Science Act	$ 280,000,000,000
Aug-22	Inflation Reduction Act	$ 773,000,000,000
Total		$ 7,704,300,000,000

Market Review

Yield Spreads – December 2022

- Risk premiums in Corporate, Muni & MBS stabilized in Q4 after widening from extremely tight levels earlier in the year.
- Corporate credit conditions have been strong; however, rising rates and slower overall economic activity may begin to put pressure on companies with higher debt levels.
- Corporate bonds may still be vulnerable in an economic downturn, while Mortgage backed securities, whose spreads have widened, may be more stable given lack of credit risk.

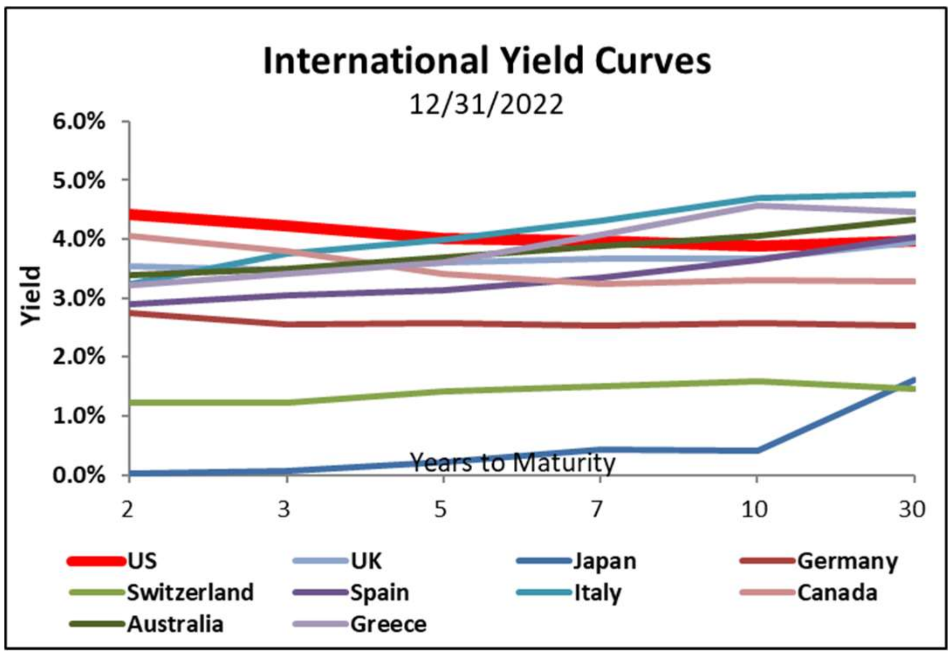


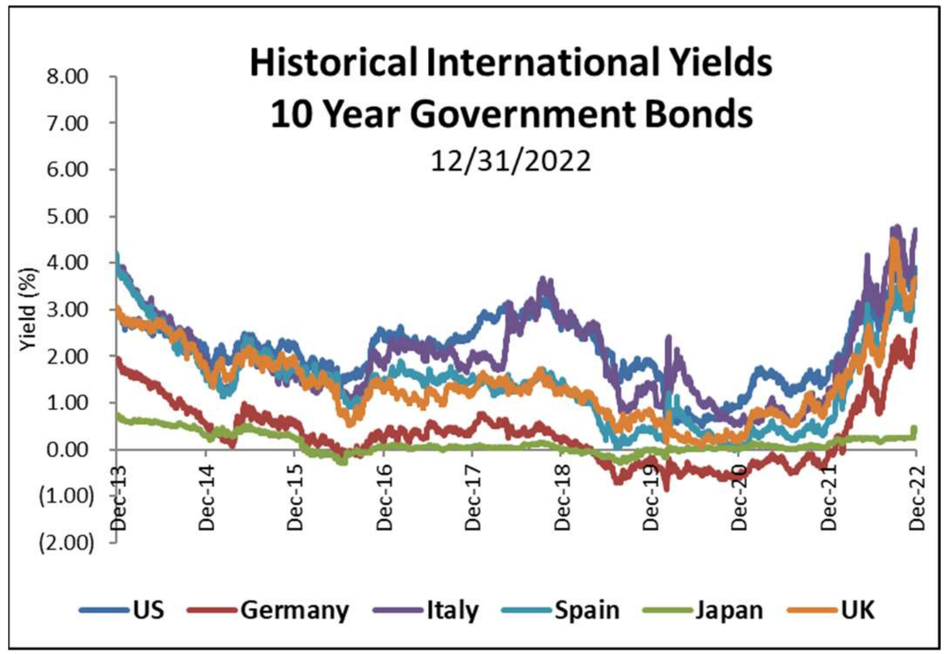


Market Review

International Yield Curves – December 2022

- Inflation has become a global phenomenon and interest rates are rising globally.
- Central banks all moved toward a tightening bias including Europe and Japan.
- The US continues as one of the highest yielding developed countries, however longer term rates in peripheral Europe have risen above the US.
- These short term interest rate differentials also have contributed to a strengthening dollar, however recent rate moves by other central banks has reversed some of the currency trends.

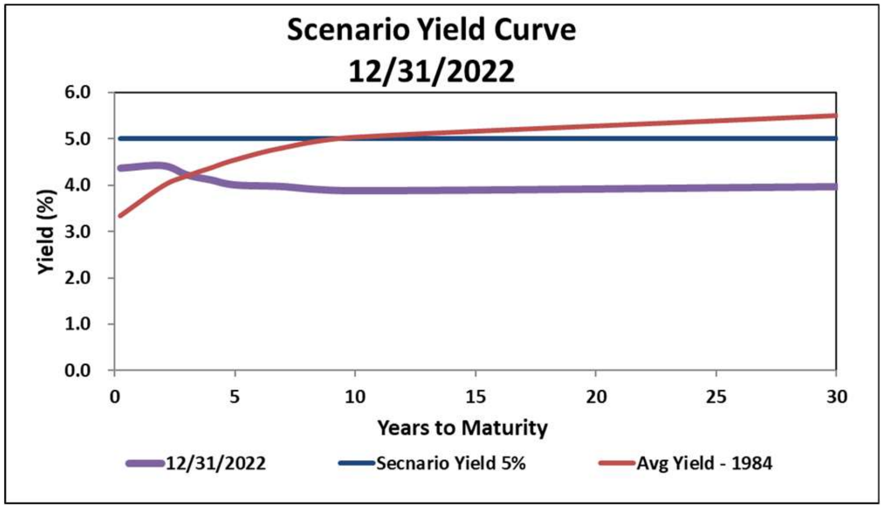


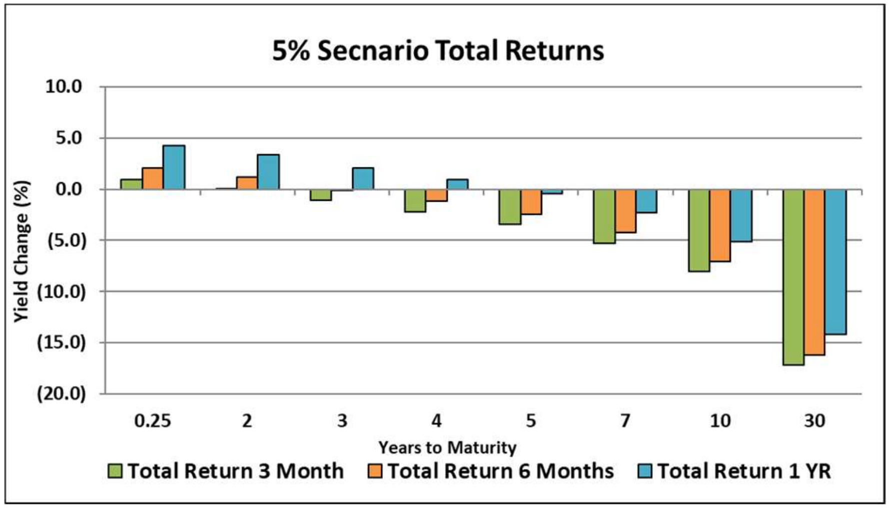


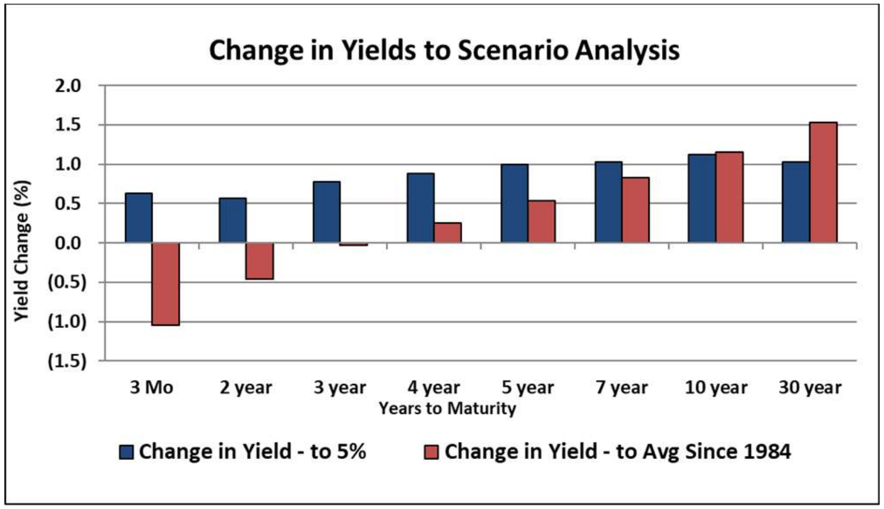
Market Review

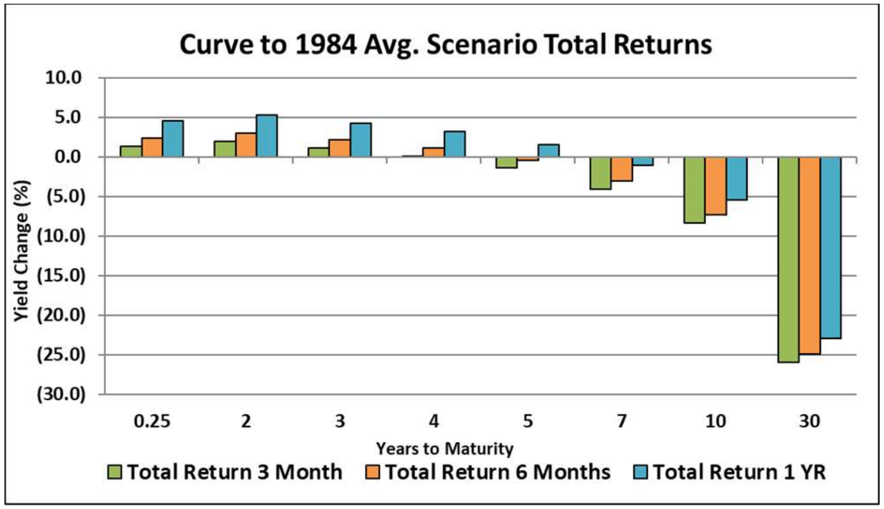
Yield Curve Scenario Analysis – December 31st, 2022

- Given the recent rise in rates above 4%, the higher current level of income in shorter term maturities is better able to offset a decline in price from further rate increases. In scenarios moving rates to 5.0% and to their average yield curve since 1984, shorter term maturities still generate positive returns, where longer term maturities remain vulnerable.









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S&P 500 Earnings and Valuation

- At year end 2021, EPS growth estimates for 2022 were 18.4%, implying a 22 P/E at its close of 4,766.
- The S&P 500 had lower actual Earnings Per Share growth of 13.5% in 2022, implying a P/E of 18.6 based on a close price of $3,840, resulting in a market price decline of -19.4% for the year.
- Valuations and growth expectations at the end of 2021 were too high, and estimates for the end of 2022 may be following a similar trend.
- The 2022 closing price of 3,840 implies a forward PE of 17.2 and 8.29% earnings growth. The average forward PE of the index since 1990 was 16.4.

2021 Estimates 12/31/2021	
Growth Rate	18.42%
Est. EPS	$ 215.42
P/E	SPX Price
22.1	**$ 4,766**
20.0	$ 4,308
19.3	$ 4,158
16.4	$ 3,533
15.0	$ 3,231

Trailing YoY Growth 12/31/2022	
Growth Rate	13.46%
Act. EPS	$206.40
P/E	SPX Price
20.0	$ 4,128
19.3	$ 3,977
18.6	$ 3,840
16.4	$ 3,385
15.0	$ 3,096

2022 Estimates 12/31/2022	
Growth Rate	8.29%
Est. EPS	$ 223.51
P/E	SPX Price
20.0	$ 4,470
19.3	$ 4,314
17.2	$ 3,840
16.4	$ 3,666
15.0	$ 3,353

S&P 500 Index
Earnings Growth Sensitivity

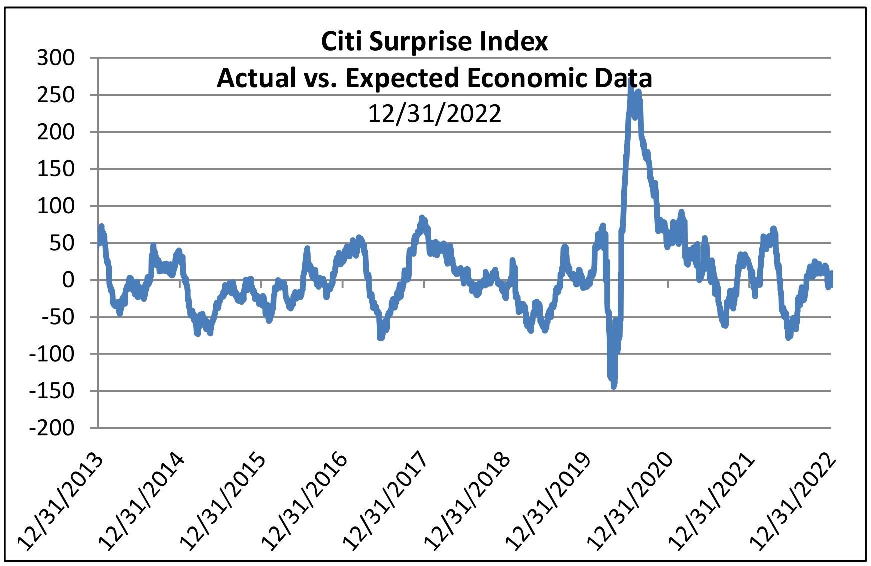
- The SPX has come closer to a more normal valuation multiple at 17.2 but earnings estimates for the index are still high at an estimate of 8.3% growth rate.
- Below the matrix looks at different possible combinations of 2023 EPS for the S&P 500 Index.
- P/E ratio scenarios ranging from the upper bound of 20 to the lower bound of 15, with the current forward P/E on 12/31/2022 (17.2), and average forward P/E since 1990 (16.4).
- EPS growth estimates shown range from about +12% growth to -12% decline, reflective of the current range of high-profile market expectations.
- This sensitivity analysis implies high market volatility potential, with theoretical SPX prices ranging from $2,700, to $4,610.
- Our view is for relatively flat earnings growth with forward PE moving lower toward the 15 level.

12/31/2023					
Growth Rate	11.68%	8.29%	4.70%	0.00%	-12.79%
BEst. EPS	$230.51	**$ 223.51**	$216.10	$206.40	$180.00
P/E	SPX Price				
20.0	$ 4,610	$ 4,470	$ 4,322	$ 4,128	$ 3,600
19.3	$ 4,449	$ 4,314	$ 4,171	$ 3,984	$ 3,474
17.2	$ 3,960	**$ 3,840**	$ 3,712	$ 3,546	$ 3,092
16.4	$ 3,780	$ 3,666	$ 3,544	$ 3,385	$ 2,952
15.0	$ 3,458	$ 3,353	$ 3,242	$ 3,096	$ 2,700

Economic Environment

December 2022

- Economic activity has weakened from levels seen one year ago amid higher interest rates and less fiscal stimulus. After a larger drop than expected, economic activity is running about as expected again.
- Global GDP has moved from strong growth across the globe to much more varied, with some countries being impacted more than others depending on impact of inflation and the Russian invasion of Ukraine.
- Inflation remains elevated around the globe with expectations of future inflation uncertain as significant changes in global monetary policy are set to combat the most inflationary corners of the global market. However, significant amounts of fiscal policy and supply chain issues stand in the way of completely beating inflation.



GDP YoY % Change		One Year	
	Q3 2022	Ago	Change
US	1.90	5.00	(3.10)
Eurozone	2.30	3.90	(1.60)
Germany	1.30	2.90	(1.60)
France	1.00	3.60	(2.60)
Italy	2.62	4.78	(2.16)
UK	1.90	8.50	(6.60)
Canada	3.10	4.20	(1.10)
Mexico	4.28	4.30	(0.02)
Australia	5.90	4.10	1.80
Japan	1.50	1.80	(0.30)
China	3.90	4.90	(1.00)
Russia	(3.70)	4.00	(7.70)
Brazil	3.58	4.43	(0.85)

**Canada GDP as of 10/31/2022*
**All other GDP as of 9/30/2022*

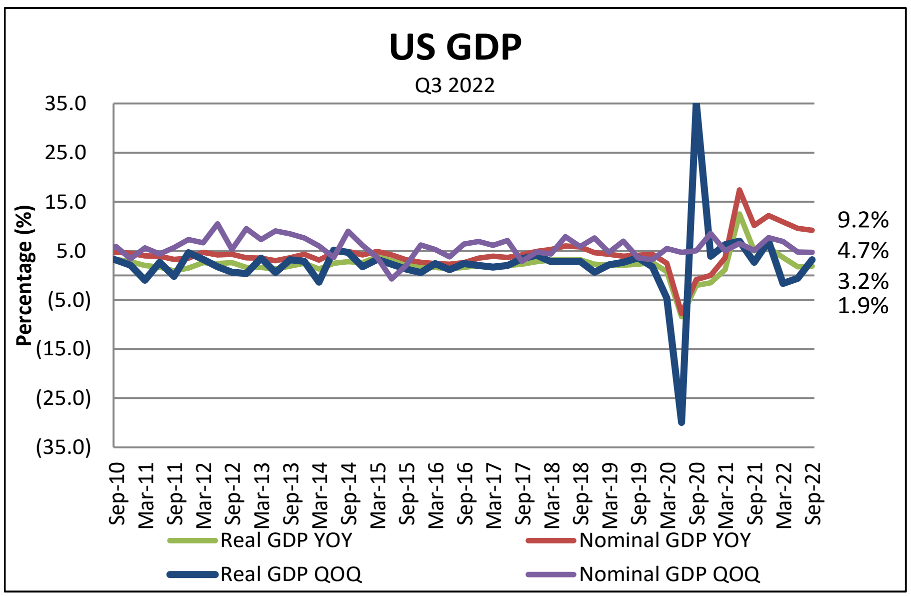
Inflation YoY % Change		One Year	
	Dec-22	Ago	Change
US	6.50	7.00	(0.50)
Eurozone	9.20	5.00	4.20
Germany	8.60	5.30	3.30
France	5.90	2.80	3.10
Italy	11.60	3.90	7.70
UK	10.70	5.10	5.60
Canada	6.80	4.70	2.10
Mexico	7.82	7.36	0.46
Australia	5.90	4.10	1.80
Japan	3.80	0.60	3.20
China	1.80	1.50	0.30
Russia	11.98	8.40	3.58
Brazil	5.79	10.06	(4.27)

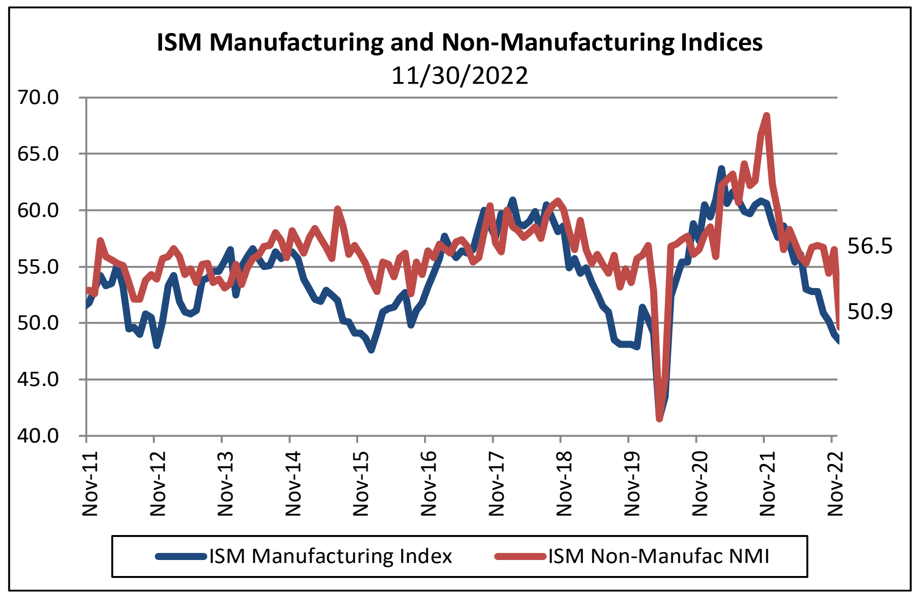
**UK, Canada, & Japan, Russia, Brazil as of 11/30/2022*
**Australia CPI as of 9/30/2022*

Economic Environment

December 2022

- US Economic activity remained historically robust in Q3 with a Nominal GDP growth rate of 7.6% and a net Real GDP of 3.2%. The average Nominal GDP growth rate since 1984 has been 5%.
- This extraordinary level of activity resulting from the excess monetary and fiscal stimulus of the past number of years has generated historically high and persistent inflation that has started to decelerate.
- Real GDP has rebounded from the two consecutive negative quarters due to netting inflation, to 3.2% showing that the economy has not begun to slow dramatically.
- While the Goods sectors of the economy have moderated as evidenced by the declining Manufacturing PMI survey below 50, the Services sectors have been robust. Recently the Services PMI turned down dramatically in a surprise, which may very well be due to weather disruptions in December.

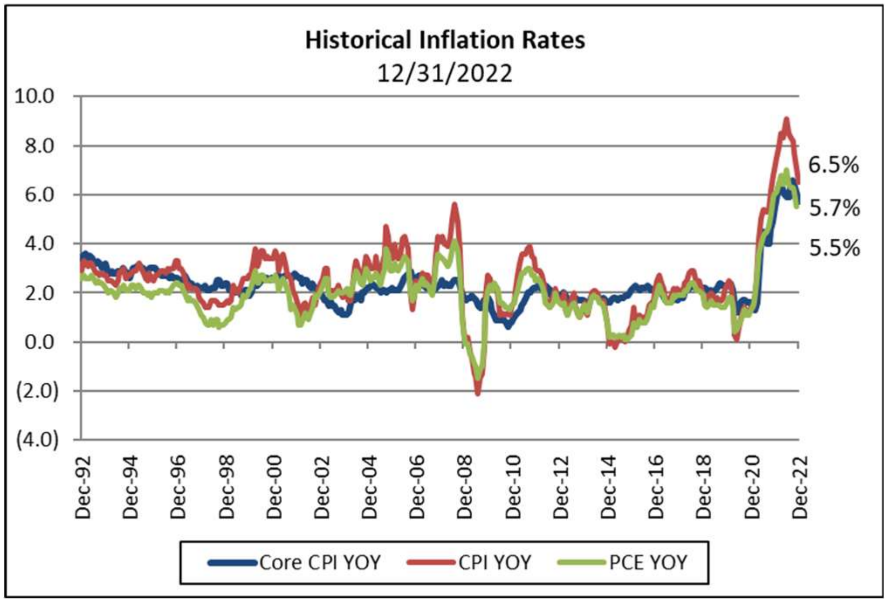


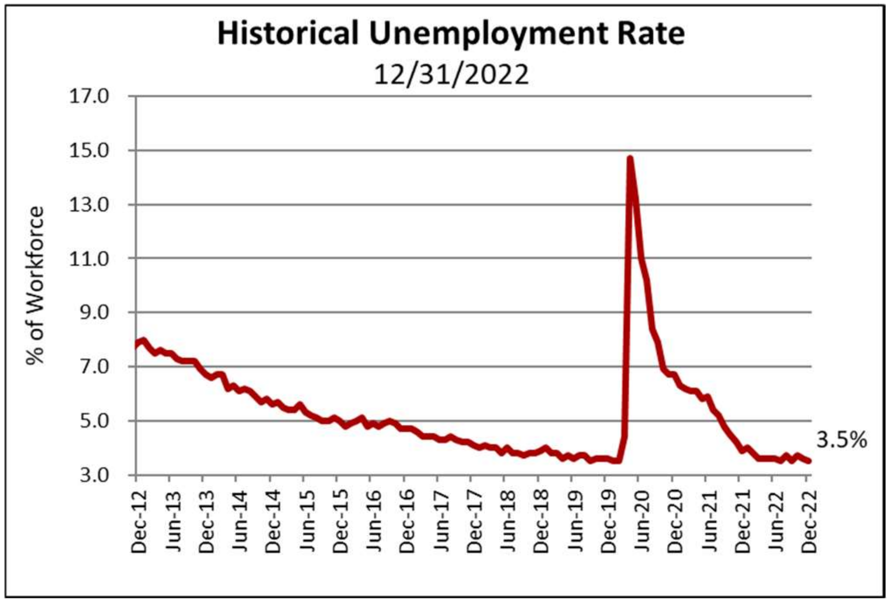


Economic Environment

Employment and Inflation – December 2022

- Inflation levels found a peak in the second quarter at 9.1%, and has decelerated to 6.5% in December, but still at historically high levels. Energy has fallen, but core inflation remains high.
- Input costs have moderated due to reduced energy and transportation costs, however remain high with wage pressures, and continue to be passed through to final demand, particularly in the services area.
- The economy has returned to around the 80% capacity utilization rate as supply chain disruptions have normalized and employees continue to return to the workforce filling in needed jobs.
- The unemployment rate has returned to its historical low of 3.5% amid continued demand for workers, suggesting continued wage pressures.

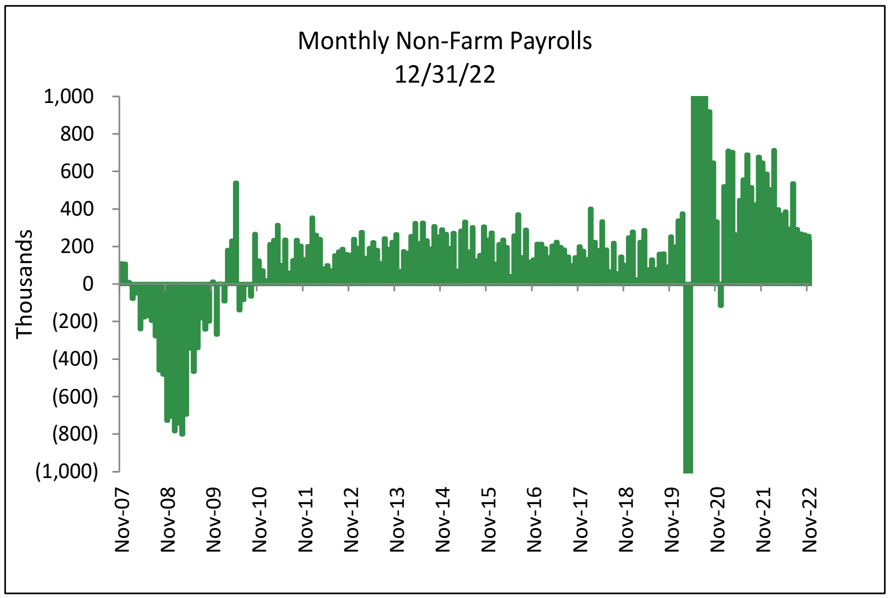


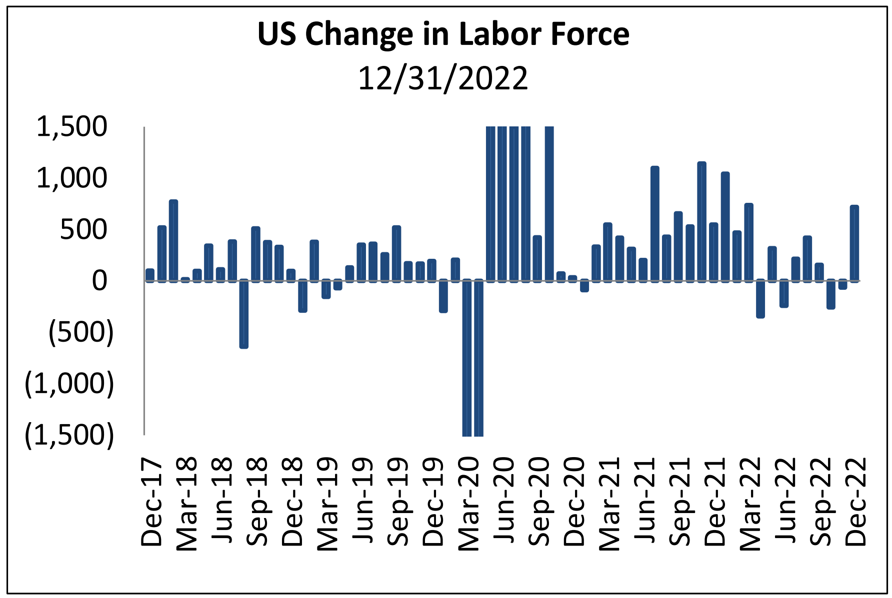


Economic Environment

Employment – Monthly Payrolls – December 2022

- Monthly payrolls additions continue at strong levels but gains are decelerating as the pool of available workers is low at 3.5% unemployment rate, and many unfilled jobs have been filled.
- Many of the added jobs are people returning to the labor force after a long absence.
- The labor force continues to grow as people continue to return to work. Much work is still needed to fill available jobs. Weekly unemployment claims remain at extremely low levels as companies are hesitant to lay off workers.
- Many high profile layoff announcements have been reducing excesses from covid buildup.





Economic Environment

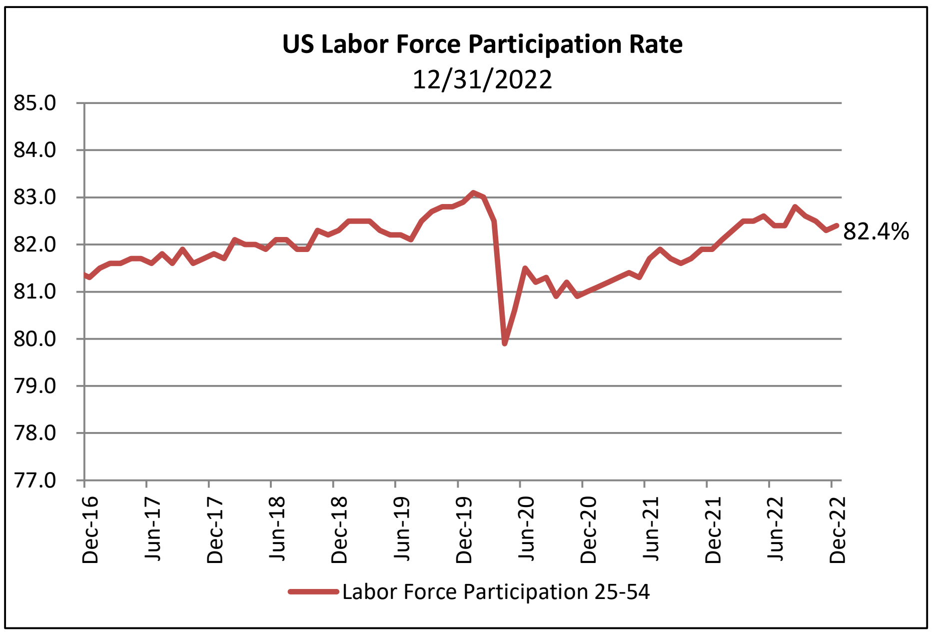
Employment – Jobs – December 2022

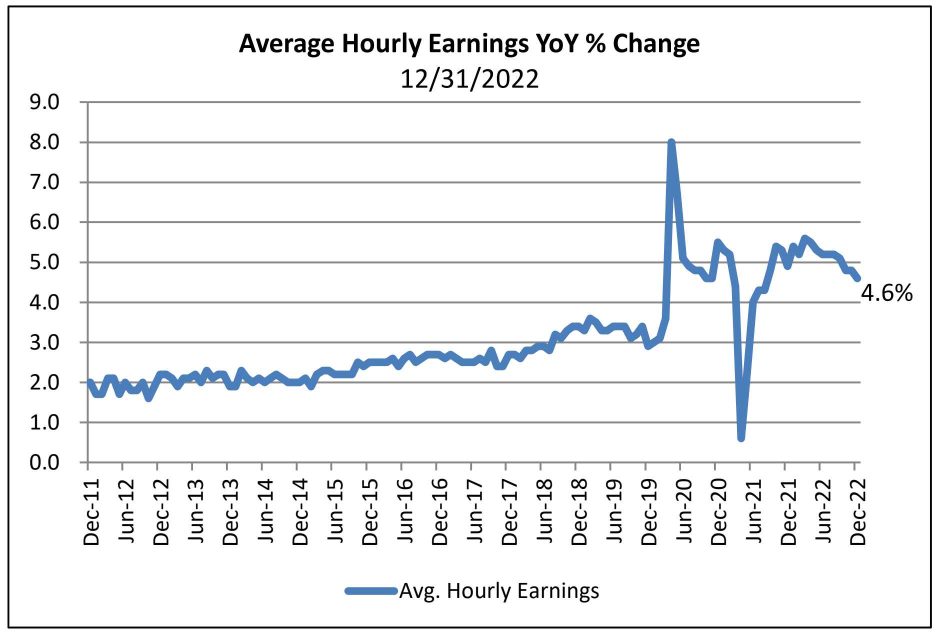
- Virtually all employment indicators suggest a very strong labor market.
- The number of jobs remains surprisingly high at over around 10.5 million, supporting the notion that companies are hesitant to lay off workers.
- Currently, there are 1.74 jobs available for every unemployed worker, showcasing the labor shortage. A decline in the jobs openings would be a leading indicator to a softening economy and overall labor market, a goal of the Fed.

Economic Environment

Employment and Inflation – December 2022

- The prime working age participation rate has been increasing and is back near pre pandemic levels.
- The demand for labor has pushed up wages and pulled workers off the sidelines. The expiration of government stimulus and an evident rise in credit card use point to further rise in participation.
- The pandemic related frictions in the labor market such as remote work, required vaccination mandates, child care and worker choices have mostly faded but still exist to various degrees.
- Average hourly earnings have recently decelerated from high levels, perhaps due to the larger contributions from additions to the lower wag service sector.

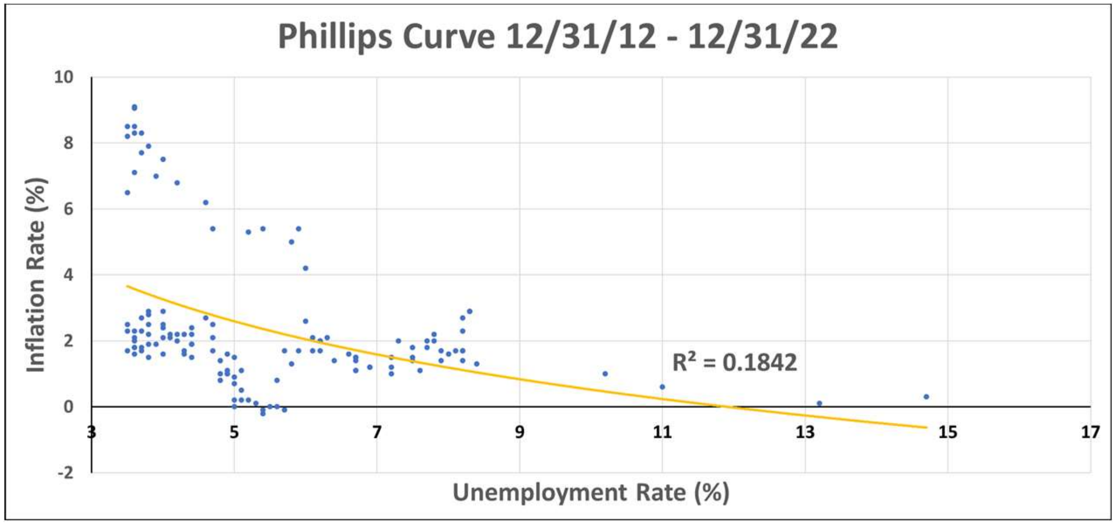


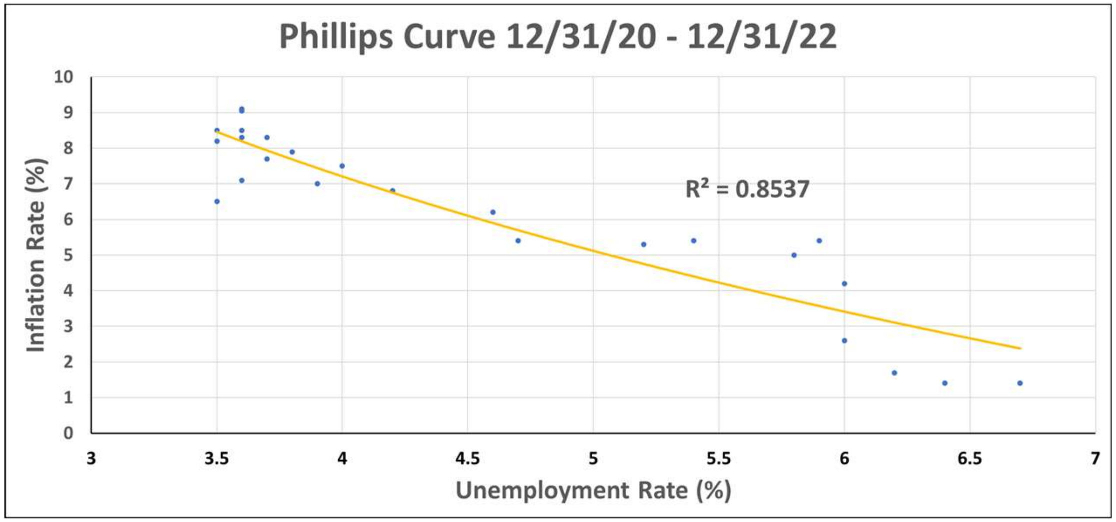


Economic Environment

Employment and Inflation – December 2022

- In the last two years, the Phillips Curve has re-emerged.
- Inflation has workers demanding higher wages, and demand for labor has employers paying more to retain and hire workers, which in turn, increases costs and the need to raise prices.
- The strong demand for labor has provided for continued job switching for higher wages, as workers seek to offset higher costs of living.
- Real wages have fallen as inflation has risen, and as prices continue to rise faster than wage growth.

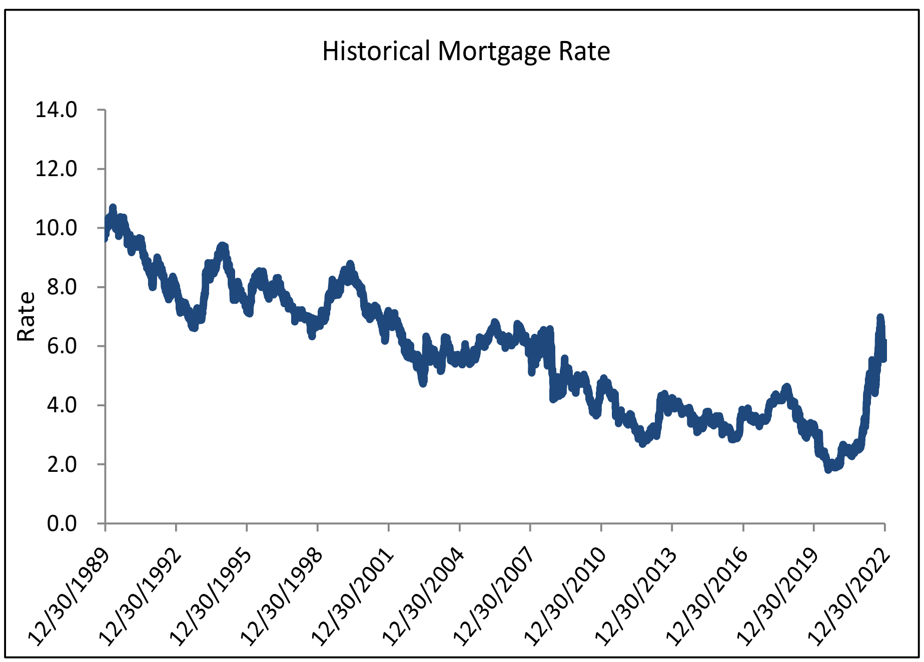


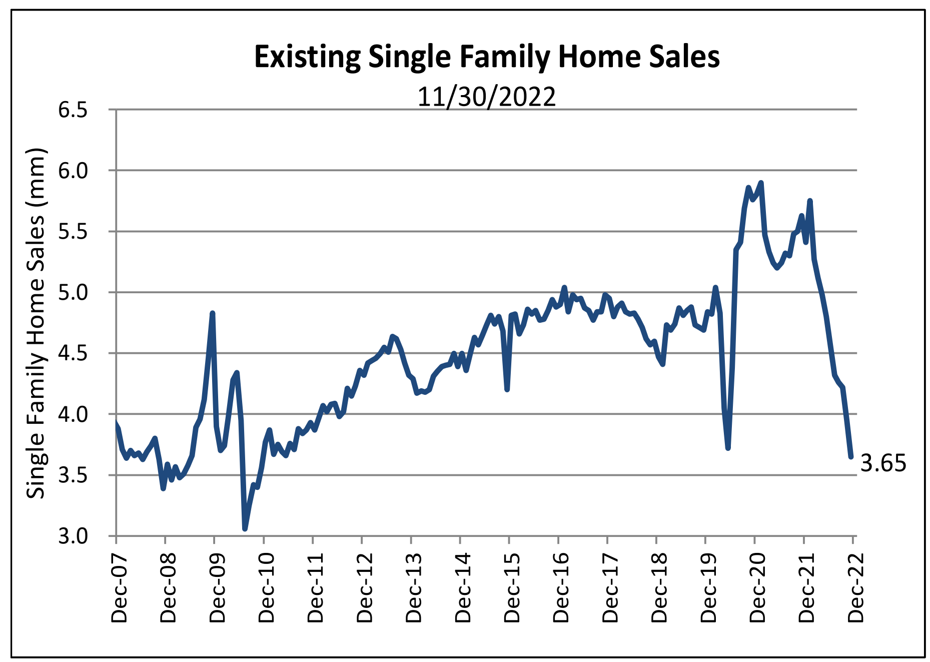


Economic Environment

Mortgage Rates and Housing – December 2022

- Mortgage rates have been rising and have returned closer to more long term historical normal levels above 6%.
- The rise in mortgage rates along with record high home prices has reduced home affordability. While demand remains high, overall home sales have been significantly reduced.
- Housing has suffered a short term price and rate shock. If the labor market remains strong, higher income levels and continued migration may generate renewed housing activity.

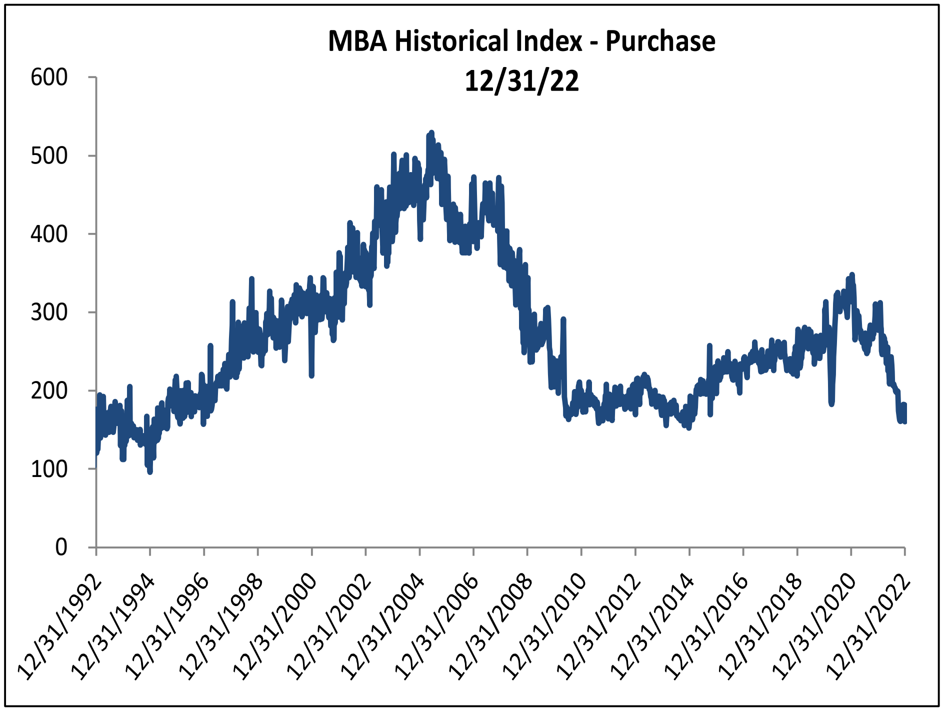


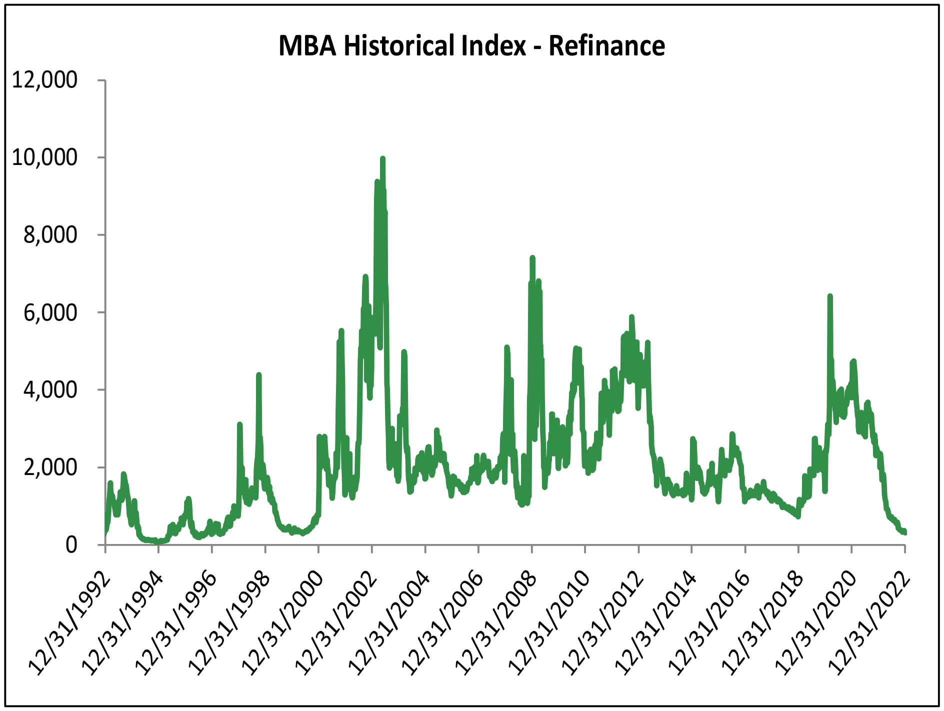


Economic Environment

Mortgage Rates and Housing – December 2022

- Mortgage Purchases have decelerated recently as a lack of inventory, rapid home price appreciation, and recently high mortgage rates has reduced demand.
- Mortgage Refinances have slowed to a standstill over the past year as higher interest rates make it less economic to refinance mortgages.
- There are few mortgages outstanding at higher interest rates that the current rate to refinance.

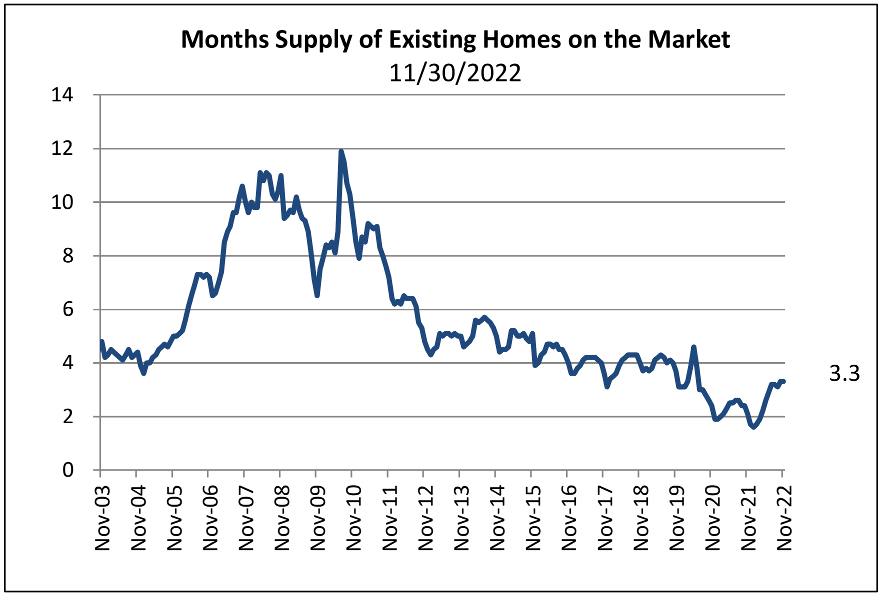


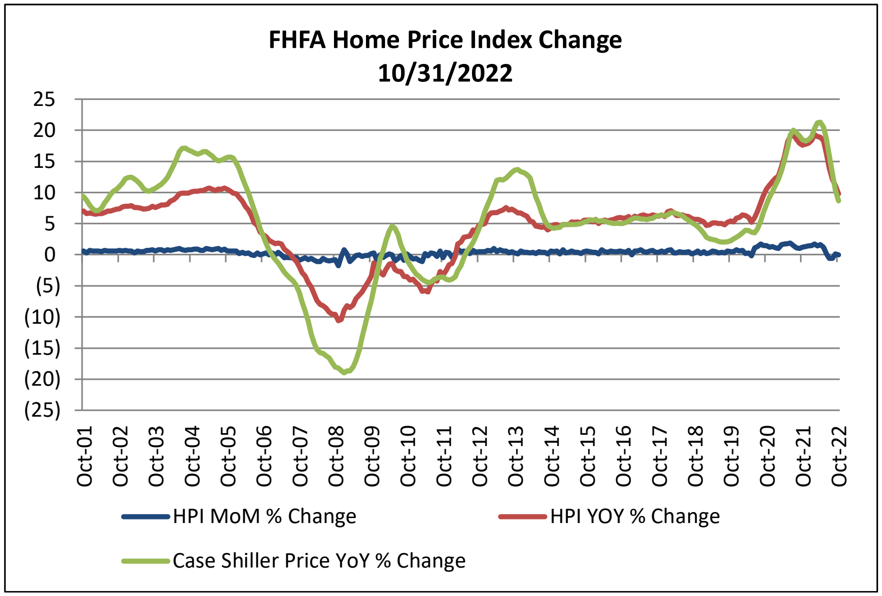


Economic Environment

Mortgage Rates and Housing – December 2022

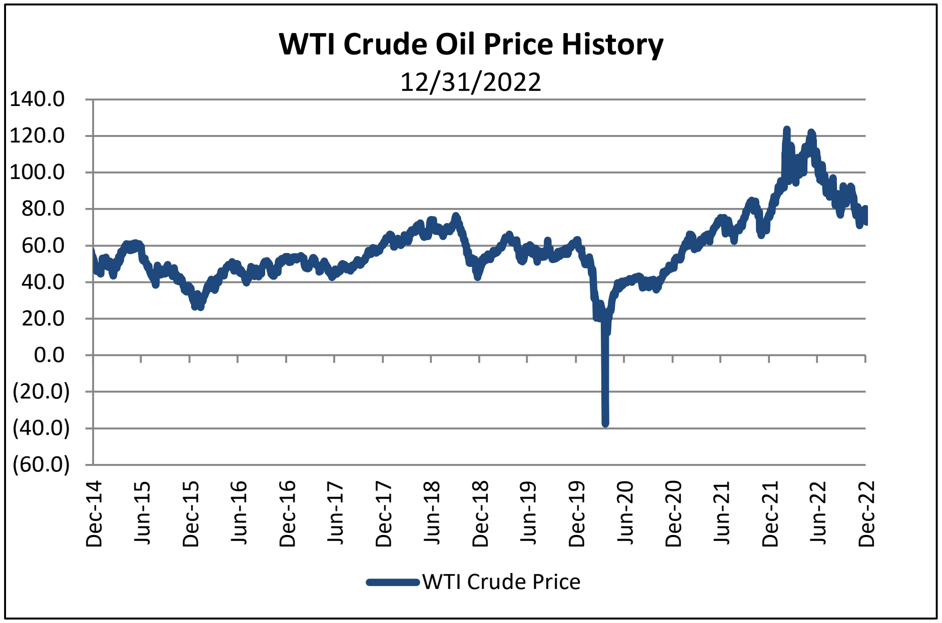
- Demand remains strong in many areas, however the slowdown in purchases due to high rates and prices has restored some inventory, increasing supply.
- Higher rates and high prices has curbed housing demand, and prices have begun to retreat from extreme, historically high levels where the median home price rose above $400,000.
- The high demand for housing had pushed home prices up over 20% vs. year ago levels. With the significant drop in home purchases, price gains have reversed and ticked down recently.
- The lagged impact of home prices in CPI has contributed to higher levels, but will soon reverse.

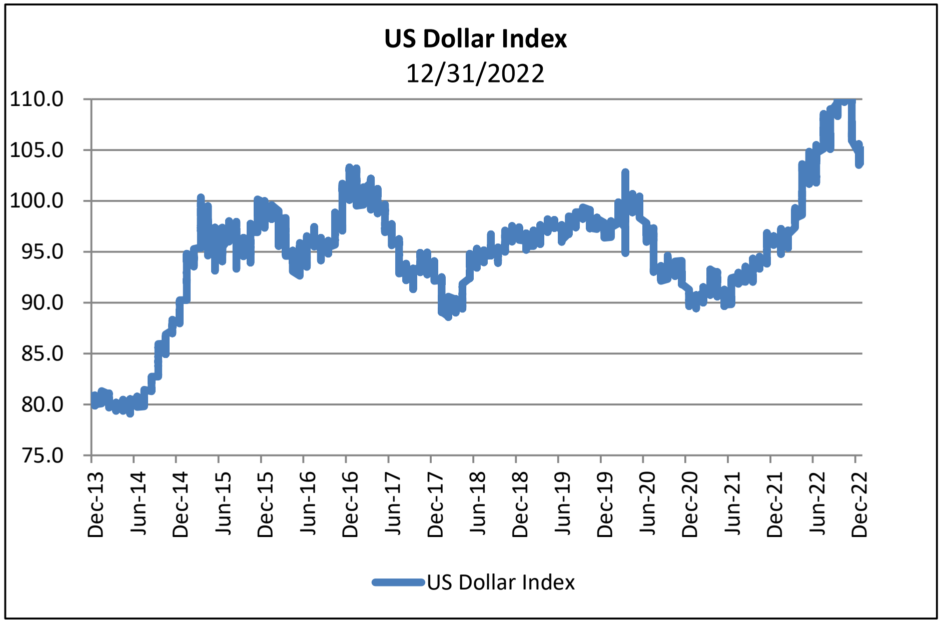




Economic Environment
December 2022

- Energy flows have shifted materially with Russian energy distribution shifting to China and India, while European supplies become sourced from the US and Middle East.
- The shift in policy to limit exploration, production, and distribution of oil and gas has led to a supply/demand imbalance and increasing energy prices, exacerbated by the Russian invasion of Ukraine.
- A spell of warm weather in Europe has eased supply concerns and brought down prices of gas and oil.
- The drive toward "green" energy is actually being hampered by supply chain disruptions and the accelerating costs for all energy, impairing investment and development.
- The Dollar strength has reversed recently as other central banks around the world have begun tightening monetary policy by raising interest rates, reducing rate differentials and strengthening their currencies.





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