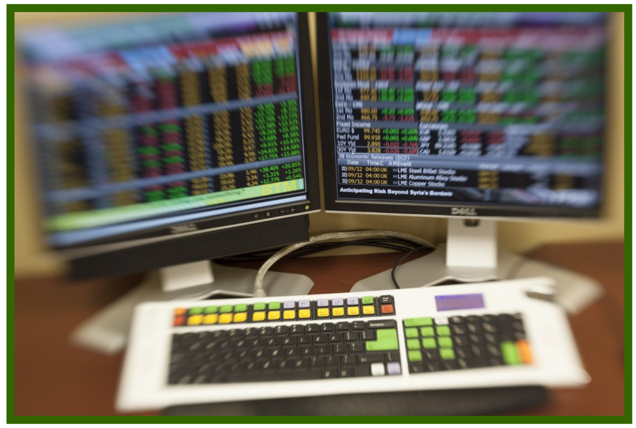
QUARTERLY NEWSLETTER

2022: FOURTH QUARTER **136TH EDITION**



"Achieving price stability is not only important in itself, it is also central to attaining the Federal Reserve's other mandate objectives of maximum sustainable employment and moderate long-term interest rates."

~ Ben Bernanke ~

Former Chair of the Federal Reserve and 2022 Nobel Memorial Prize in Economic Sciences Recipient

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CAPITAL MARKETS SCOREBOARD

Equities					
Indices	4Q22 Total Return (%)	2022 Total Return (%)	Index Characteristics		
Domestic			NTM P/E	P/B	Div. Yld. (%)
S&P 500	7.6	-18.1	16.7	3.8	1.6
DJIA	16.0	-6.9	16.6	4.3	2.0
NASDAQ	-0.8	-32.5	22.4	4.3	1.0
Russell 1000 Growth	2.2	-29.1	21.1	9.0	1.0
Russell 1000 Value	12.4	-7.5	13.9	2.4	2.2
Russell 2000	6.2	-20.4	19.1	1.9	1.4
International*					
MSCI EAFE	17.4	-14.0	12.2	1.7	2.9
MSCI Emerging Markets	9.8	-19.7	11.6	1.7	2.6
MSCI United Kingdom	17.0	-4.8	9.9	1.7	3.5
MSCI France	22.3	-12.7	11.9	1.9	2.6
MSCI Germany	24.7	-21.6	10.5	1.4	3.1
MSCI Japan	13.3	-16.3	12.3	1.4	2.3

Fixed Income		
Indices**	4Q22 Total Return (%)	2022 Total Return (%)
Domestic		
U.S. Corp - Gov (1-3 Years)	0.9	-3.8
U.S. Corp - Gov (3-5 Years)	1.7	-8.0
U.S. Corp - Gov (10+ Years)	2.2	-26.9
U.S. Treasuries Master	0.7	-12.9
U.S. Corporates Master	3.5	-15.4
U.S. Municipals Master	4.0	-9.0
U.S. High Yield Master	4.0	-11.2
International*		
Developed Markets Sov Bond	4.3	-18.0

Commodities		
Resource	4Q22 Total Return (%)	2022 Total Return (%)
Precious Metals		
Gold	9.5	-0.4
Silver	25.9	3.7
Industrial Metals		
Copper	10.6	-14.6
Aluminum	8.3	-15.9
Energy		
Brent Crude Oil	-3.4	11.2
WTI Crude Oil	0.4	6.5
Natural Gas	-33.9	20.0

Key Rates				
Rates	12/31/2022	9/30/2022	6/30/2022	12/31/2021
U.S. Target Fed Funds Rate	4.50	3.25	1.75	0.25
2-Year U.S. Treasury	4.41	4.22	2.92	0.73
10-Year U.S. Treasury	3.88	3.83	2.98	1.52
30-Year U.S. Treasury	3.97	3.79	3.14	1.90
10-Year German Bund	2.53	2.13	1.38	-0.18
10-Year Japanese Bond	0.42	0.24	0.22	0.07
30-Year Fixed Mortgage	6.36	6.11	5.52	3.10

Currencies				
Indices/ Exchange Rates	12/31/2022	9/30/2022	6/30/2022	12/31/2021
ICE U.S. Dollar Index	103.52	112.12	104.69	95.97
USD per EUR	1.07	0.98	1.05	1.14
USD per GBP	1.20	1.12	1.21	1.35
JPY per USD	131.95	144.75	135.86	115.16
CAD per USD	1.35	1.37	1.29	1.26

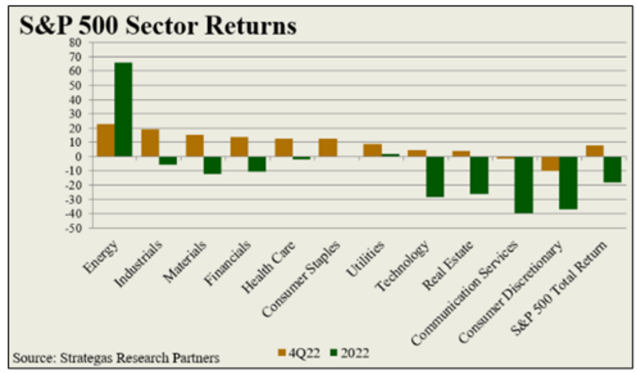
*Returns denominated in U.S. dollars

**ICE Bank of America Merrill Lynch (BofA-ML) indices

EQUITIES

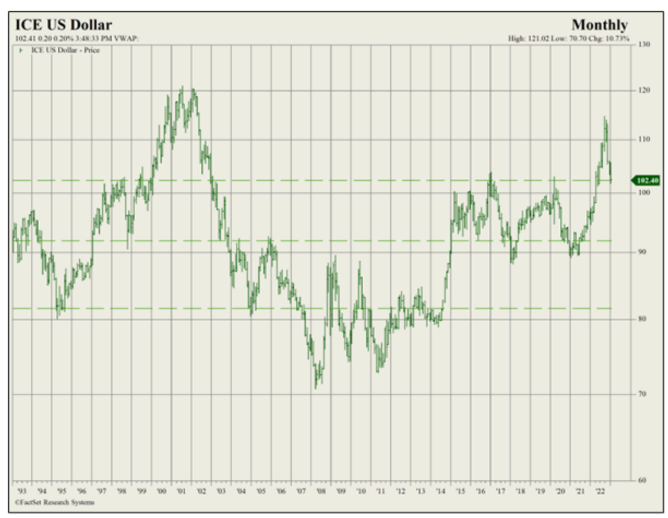
- The Standard & Poor's 500 (S&P 500) index posted a total return (price appreciation plus dividends) of 7.6% in the fourth quarter to close the year down 18.1%. According to Russell Indices, growth stocks suffered the brunt of market declines off 29.1% in 2022 versus -7.5% for value stocks. Growth stocks are more materially impacted by interest rate changes than value stocks, as analysts are willing to discount their earnings further into the future (longer duration). Despite entering bear market territory (a decline of 20% or more) this year, the S&P 500 is still up 18.8% from its pre-COVID peak in February 2020. The Russell 2000, an index of small company stocks, underperformed its large-cap counterparts. The index was up 6.2% for the quarter and down 20.4% for the year.

- The Energy Sector was the best-performing sector for the fourth quarter and the year, posting positive returns of 22.85 and 65.7%, respectively. Consumer Discretion and Communication Services Sector stocks were the worst performers of the year, returning -37.0% and -39.9%, respectively. As a result, the Dow Jones Industrial Average (DJIA), which is more heavily weighted to Energy and Financials Sectors, outpaced the S&P 500 in the fourth quarter, up 16.0%. The DJIA also outperformed the S&P 500 for the year by more than 11%, its widest outperformance since 1934.

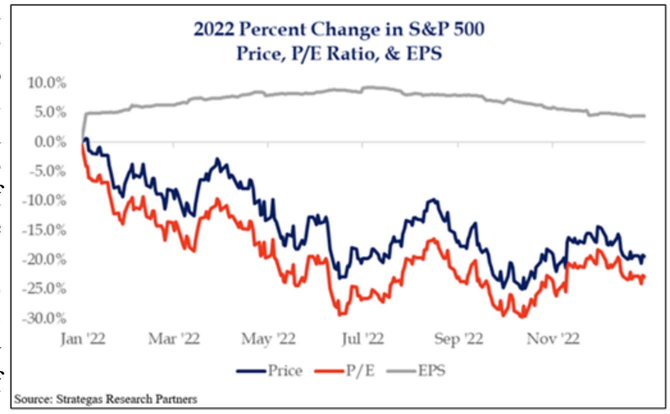


- International stocks outperformed their U.S. counterparts in the fourth quarter and for all of 2022. The MSCI Europe, Australasia, and Far East (EAFE) Index, which tracks international developed markets stocks, has a combined composition weighting to the long-duration Information Technology and Communication Services Sectors more than 15% lower than the S&P 500. It underperformed significantly in the first three quarters due to dollar headwinds and geopolitical challenges. However, it rallied in the fourth quarter, up 17.4%, to finish the year over four percentage points higher than the S&P 500 at -14.0%.

- It has been decades since the U.S. dollar strengthened against nearly every primary currency, as it did in 2022. The strength resulted from numerous factors, such as economic and political uncertainty, higher relative interest rates in the U.S., and investor sentiment. With roughly 40% of S&P 500 companies' revenues being generated outside the U.S., dollar exchange rates can have several implications for the financial markets and the global economy. As the dollar strengthens, it becomes more expensive for foreign consumers to purchase U.S. goods and increases the attractiveness of goods produced outside the U.S., leading to lower revenues for domestic companies. Offsetting the lower revenues, however, is the positive impact a weaker dollar has on reducing inflation and, thus, interest rates and equity market valuations.

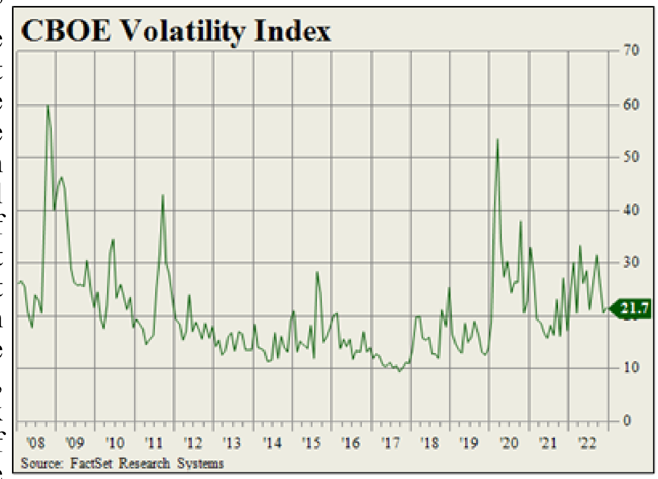


- Analysts continued reducing their expectations for aggregate S&P 500 earnings in the fourth quarter. Earnings per share (EPS) estimates for the full year 2022 fell from a June peak of 227.71 to 218.37 by December 31st, implying just over 5% growth versus 10.2% at the peak. Recession fears and growing margin pressures have also driven EPS estimates for this year down from 250.33 to 229.36, implying growth of just 4.9% for all of 2023. As earnings declined in 2022, so did the multiple investors were willing to pay for them. The S&P 500's forward (next twelve months) price-to-earnings (P/E) ratio fell from 21.5x to 16.7x. Most of the decline was explained by growth stock valuations collapsing in the face of rising interest rates. As interest rates rise, so does the discount factor investors are willing to apply to earnings and cash flows, causing multiples to contract.



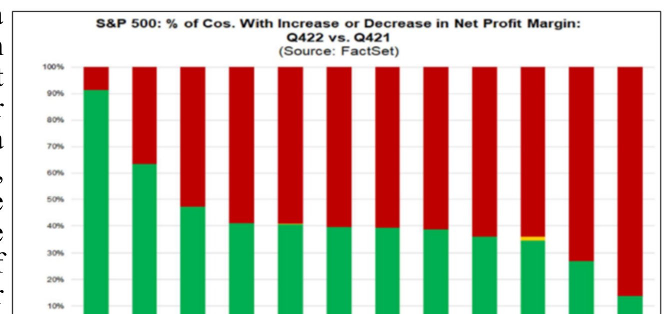
Source: Strategas Research Partners

- The CBOE Volatility Index (VIX), or "fear gauge," measures S&P 500 volatility expectations over the next 30 days. It tends to rise when market conditions are uncertain and fall when markets are stable. Despite volatility increasing across multiple asset classes, the VIX remained relatively quiet in 2022. According to Bloomberg, it topped well below the average bear market bottom reading of 46.8 and lower than its peak in every bear market since 1990. The calmness of the VIX was not consistent with the volatility experienced in investor portfolios, drawing questions about the usefulness of the indicator. Defenders of the VIX, however, point to its sustained height as the index traded above its historical average on 94% of trading days in 2022, higher than in all but three years since 1990.



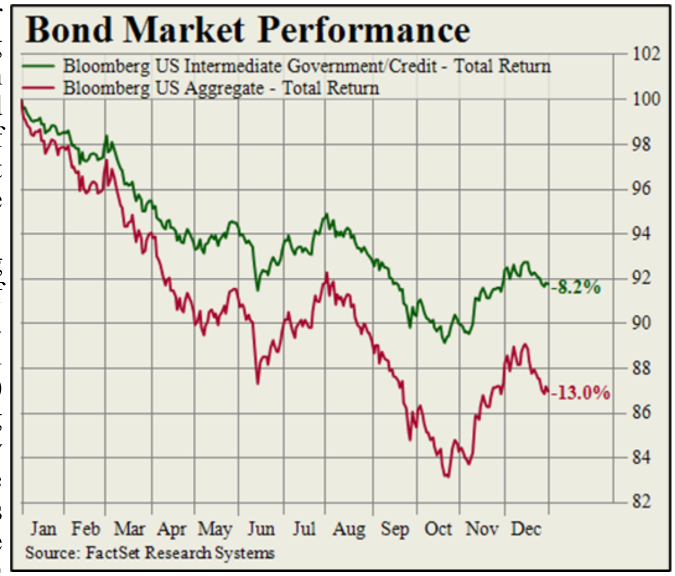
Source: FactSet Research Systems

- As earnings calls begin, analysts are keeping a keen eye on company profit margins. For fourth quarter, expectations for S&P 500 net profit margins are 11.5%. The mark is above the 5-year average of 11.3%, but it would represent a contraction from the previous quarter's 11.9% and, according to Factset, would be the lowest since 2020's fourth quarter reading of 10.9%. While companies are feeling relief on the goods side of their input costs, pressure from the strong dollar referenced earlier and increasing wages, a stickier component of company costs, are expected to continue to weigh on margins in 2023.



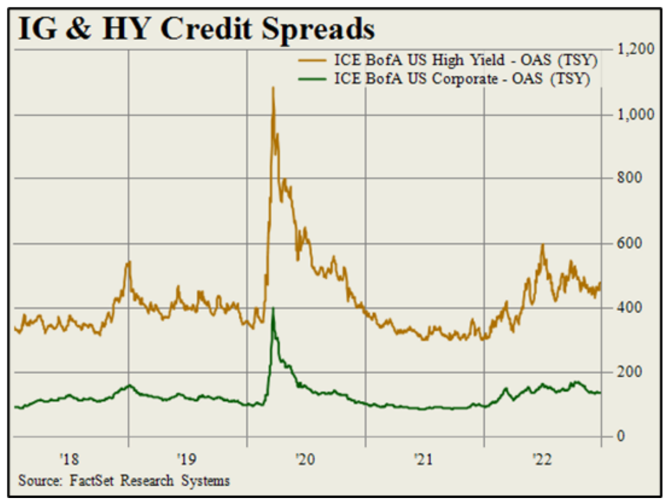
	Energy	Utilities	Industrials	Consumer Disc.	S&P 500	Information Tech.	Consumer Staples	Real Estate	Comm. Services	Financials	Health Care	Materials
Down %	9%	37%	53%	59%	59%	61%	61%	61%	64%	64%	73%	86%
None %	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Up %	91%	63%	47%	41%	41%	39%	39%	39%	36%	34%	27%	14%

FIXED INCOME



- After starting the year yielding 1.52%, the 10-year U.S. Treasury (UST) finished the year yielding 3.88%. Despite generally positive performance in the fourth quarter, this dramatic increase caused negative annual returns in nearly all subsets of bond instruments, with many providing their worst annual returns on record. For example, the performance of the widely cited Bloomberg U.S. Aggregate Bond Index was -13.0%. After being created in 1976, the index's worst year of performance had been -2.9%, registered in 1994. According to Ibbotson Associates data, both intermediate-term (-9.4%) and long-term (-26.1%) government bonds had their worst years going back to at least 1926. Paired with weak equity returns, a generic 60/40 portfolio comprised of the S&P 500 and intermediate-term government bonds generated the steepest drawdown (-14.3%) since the Great Depression in 1931. With higher yields and waning inflation, there is a greater likelihood that bonds will once again provide a ballast to equity market volatility going forward.

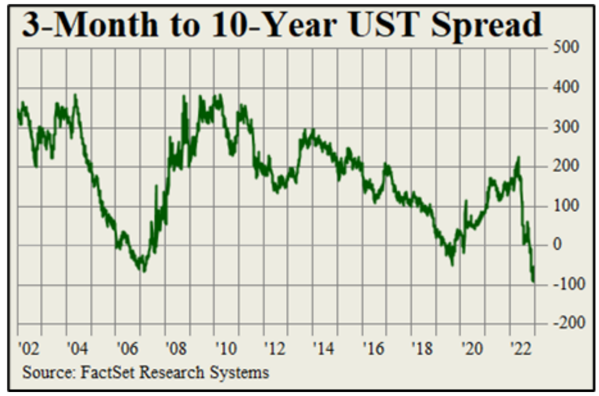
- According to BofA-ML indices, investment grade corporate bonds in aggregate (3.5%) outperformed USTs (0.7%) in the fourth quarter, although they still underperformed USTs for the year (-15.4% versus -12.9%). Given the tumultuous capital market environment, many investors may be surprised to learn that high-yield (HY) outperformed both for the quarter (4.0%) and the year (-11.2%) despite a typically more volatile risk profile. High-yield (or "junk") bonds are typically less sensitive to interest rate movement when compared to their higher-quality counterparts, which is the main reason for their outperformance in 2022.



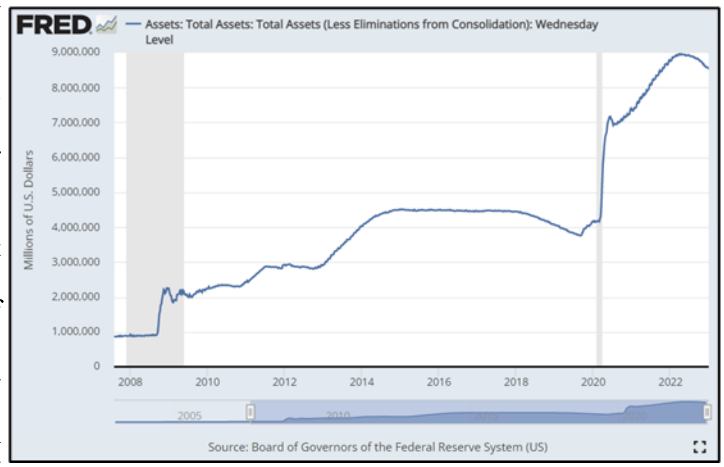
- Although credit spreads, the yield differential between government and corporate debt, increased substantially in 2022, they have arguably increased less than one might expect given equity market volatility and fears of a recession. Two primary factors in this environment helped contain spreads and led to more credit spread stability than traditionally seen in cyclical downturns. First, in the wake of the pandemic, many otherwise healthy companies were downgraded to high-yield ratings, bolstering the overall credit quality of the sector. Second, historically volatile energy companies and, to a lesser extent basic materials companies, which comprise an outsized weighting in the high-yield space, performed well in 2022.

FIXED INCOME

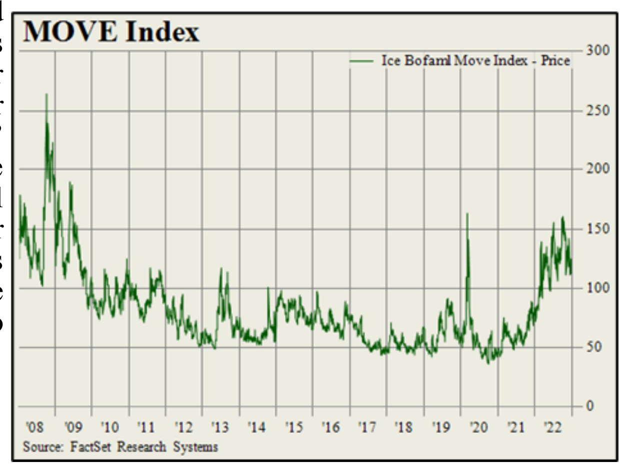
- A normal Treasury yield curve is upward sloping with short-term rates lower than longer-term rates. When short-term rates are higher, the yield curve is inverted. It had been decades since bond investors witnessed the yield curve inversion to the extent seen in the fourth quarter, with the spread between three-month and ten-year UST yields reaching -0.90% in December. Even during the Great Financial Crisis, the inversion troughed at -0.64%. While the conventional view is that an inversion signals an upcoming recession, some also believe it is a main contributor to economic weakness. An inverted curve typically reduces the margin banks earn on their lending as the difference between the interest rates they pay on short-term deposits and the interest rates they charge (earn) on longer-term loans narrows. The resulting pressure on bank profitability subsequently makes it more difficult for other businesses to secure loans to fund operations, often leading to an economic slowdown.



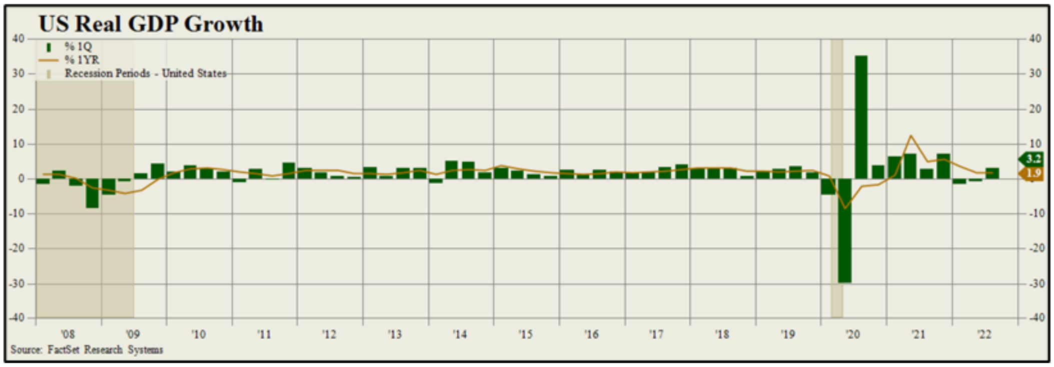
- In May of 2022, the Federal Reserve (Fed) revealed a plan to reduce the size of its balance sheet. By September, the Fed expected to allow $60 billion in USTs and $35 billion in agency mortgage-backed securities per month to mature without reinvestment. As of December 31, 2022, holdings of USTs fell $270.6 billion from the June high, while mortgage-backed securities decreased $98.7 billion from their April high. The size of the balance sheet finished the year at $8.6 trillion, off a high of almost $9.0 trillion. The rapid rise in the fed funds rates has also led to the Fed paying more in interest on institutional reserves than the Fed is earning on its current holdings. The Board of Governors estimates this could result in losses over the next three to four years, with a baseline projection of $60 billion. For context, in the ten years prior to 2022, the Fed "earned" nearly $1 trillion on its balance sheet assets; earnings the Fed sent the U.S. Treasury.



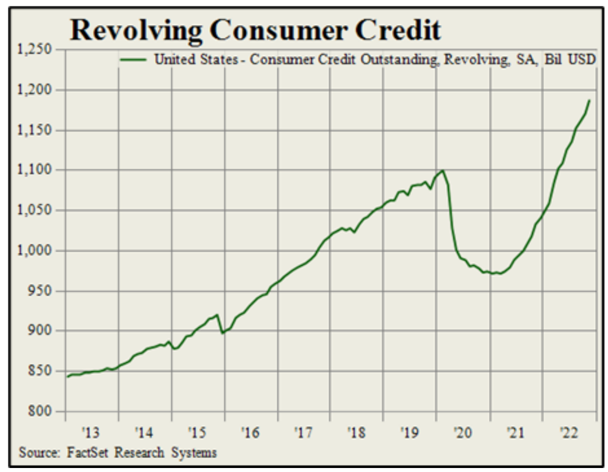
- The ICE MOVE Index, a measure of the implied volatility of the UST market, finished the year significantly higher than its long-term average, despite pulling back from levels not seen since the pandemic's start. It is calculated using the implied volatilities of a range of options on UST futures contracts. With higher values associated with greater volatility, the index has been dubbed the "VIX for bonds" for its ability to signal changes in investors' risk sentiment in the bond markets. Uncertainty in the fixed-income markets is worth monitoring for all investors, as the market serves as the "plumbing" for the rest of the financial system, with implications ranging from new home buyer's ability to negotiate lower mortgage rates to a sovereign nation's ability to issue new and service existing debt.



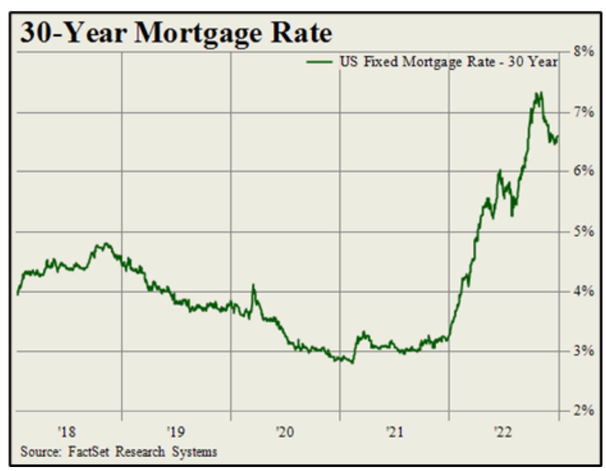
- The U.S. economy had a surprisingly strong third quarter as Gross Domestic Product (GDP) increased at an annual rate of 3.2%, revised up from 2.6% initially. This was primarily due to higher consumer spending. However, it appears the economy is slowing. Institute for Supply Management surveys showed both the manufacturing and services sectors contracted in December. The S&P Global Composite Purchasing Managers Index also contracted in December. Multiple surveys show a majority of economists forecasting a recession, and even the Fed forecasts economic growth of only 0.5% in 2023. If that occurs, it would be the most highly anticipated recession in history.



- Whether a recession occurs in 2023 will depend on the U.S. consumer; personal consumption is almost 70% of GDP. It appears that higher inflation is taking its toll. Consumers pulled back on spending in November, with retail sales declining 0.6% month-over-month. While personal income rose 0.4% in November, the savings rate was only 2.4%, close to the record low of 2.1% in 2005. To sustain their spending, consumers have dipped into their savings and increased debt; revolving consumer credit increased 14.9% in November from a year earlier, nearly the largest increase in 20 years, and surpassed pre-pandemic levels. According to the latest University of Michigan survey, consumer sentiment also remains near record lows.

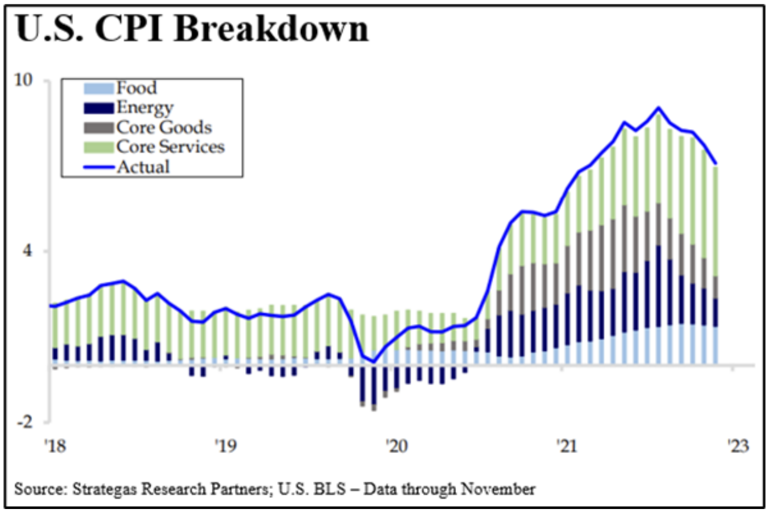


- Higher mortgage rates and low affordability have caused the robust housing market to start to cool. As the Fed raised its benchmark policy rate to 4.25-4.50%, the interest rate for the 30-year fixed mortgage more than doubled. It reached a peak of 7.35% in November before falling back to 6.66% at the end of the year. Existing home sales have fallen for ten consecutive months, and new home sales have also been down for eight straight months on a year-over-year basis. According to the S&P Core Logic Case-Shiller National Home Price Index, home prices have fallen 3.2% over the four months ending in October. The median existing home sales price has also fallen. No one expects a repeat of the 2007-2010 housing bust because the average homeowner is more creditworthy, home equity values exceed $30 trillion, and there still is a structural shortage of housing units in the U.S. Like home prices, apartment rents are also starting to decline.



ECONOMICS

- As the 4th quarter closed, inflation continued decelerating from its June peak. The overall Consumer Price Index (CPI) increased 6.5% for the 12 months ending in December, down from a peak of 9.1% in June. This was the slowest 12-month pace since December 2021. Encouragingly, inflation for the month of December decreased by 0.1%. Core CPI, which excludes food and energy, was up 5.7% for the year and 0.3% for the month. The Fed's preferred measure of inflation, the core Personal Consumption Expenditures Price Index (PCEPI), rose 4.7% over the 12 months ending in November and only 0.2% for the month. The Fed continues to be concerned that rising wages will sustain inflation. In December, wages increased by 0.3% while CPI decreased by 0.1%, resulting in a real (inflation-adjusted) wage increase of 0.4%. Rising wages in conjunction with productivity, which was negative in 2022, is not helping the Fed in its fight against inflation.



- Employers added 223,000 jobs in December compared to a monthly average of 379,000 in 2022 and 562,000 in 2021. In the five years ending in 2019, monthly job growth averaged 194,000. One concern is the lower labor force participation rate, which was 63.4% pre-pandemic and is now 62.3%. The reduction translates to almost 3 million fewer workers in the labor force. While the unemployment rate is at a historical low of 3.47%, jobs are still available. At the end of October, there were 10.3 million job openings, down from 11.9 million earlier in the year. Given demographics and government policies, there may be a structural labor shortage in the future. Many firms, especially in the technology and financial sectors, that over-hired in the last two years are starting to implement hiring freezes and layoffs. For example, Amazon nearly doubled its workforce from the 4th quarter of 2019 to the 3rd quarter of 2022, to nearly 1.5 million but has recently begun to announce layoffs. Microsoft, Salesforce, and Cisco are other companies also announcing layoffs. Layoffs are primarily occurring in the managerial and professional ranks, which is why lower-income workers, who are still in demand, have fared better than upper-income workers in terms of salary increases in recent years.