

# MARKET COMMENTARY

# Q4 | 2022

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## IN REVIEW

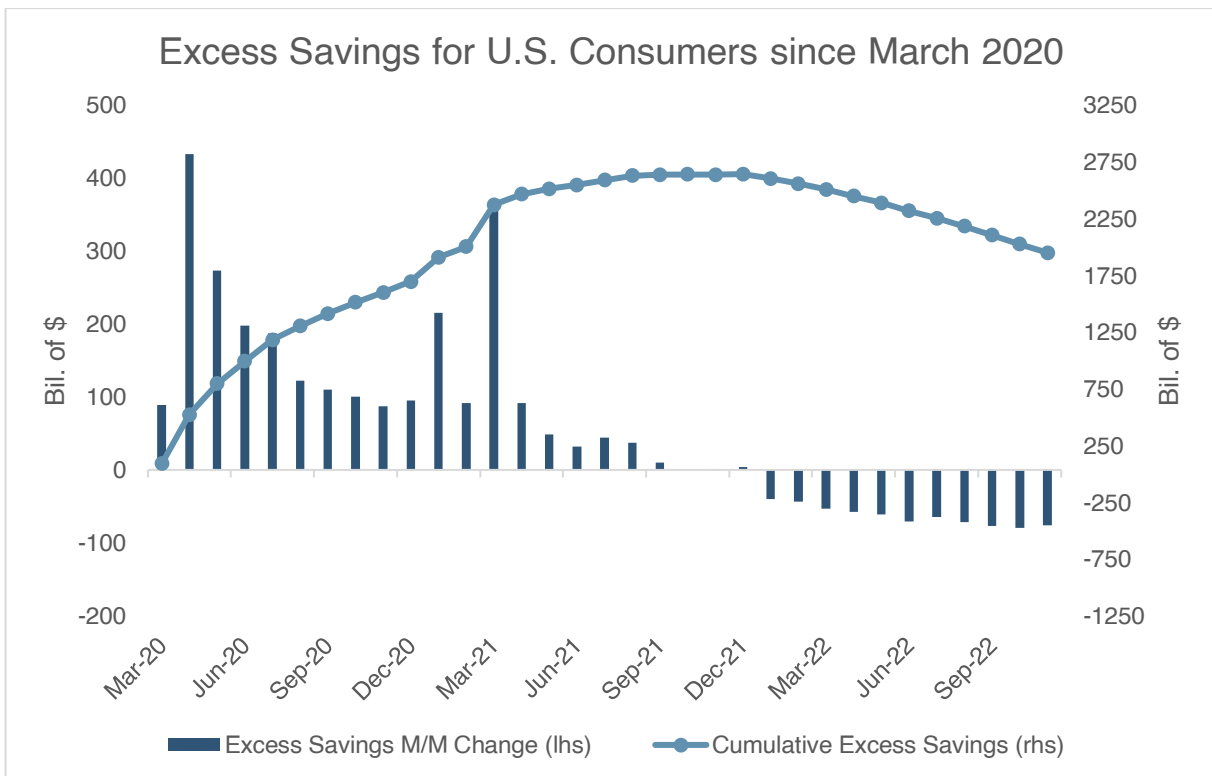
2022 brought a decidedly sharp end to the post-pandemic bull market. What markets originally thought would be a gradual central bank tightening campaign turned into the fastest series of rate hikes in history. Globally, central banks were forced to respond swiftly and forcefully to record-high inflation brought on by overly stimulative pandemic-related policy measures, stark supply and demand imbalances, and geopolitical shocks. The year was dominated by the shift higher in interest rates and its impact across all financial markets as risk assets repriced dramatically. U.S. equities suffered their worst performance since the Great Financial Crisis alongside a historically unprecedented selloff in fixed income markets. As a result, 60/40 portfolios generated their worst returns since the late 1960s. Looking to 2023, market participants have shifted their focus to economic growth. While a recession has widely been predicted, most are calling for a mild one, especially compared to the previous two. Regardless the strength, a recession would lead to a decline in corporate earnings that would ultimately lead equity prices lower. Elevated volatility is likely to persist as liquidity continues to be withdrawn and investors shape their interest rate expectations around incoming economic data.

### General Economic Conditions

Real GDP increased at an annual rate of 3.2% in the 3<sup>rd</sup> quarter. The increase in real GDP reflected increases in exports, consumer spending, nonresidential fixed investment, and government spending. These contributors were partly offset by decreases in residential fixed investment and private inventory investment. The current forecast for 4<sup>th</sup> quarter real GDP growth is 4.1%, which would mark another strong quarter of growth. Like the 4<sup>th</sup> quarter of 2021, this number is somewhat misleading as an indication of core economic strength. A large component of projected 4<sup>th</sup> quarter growth is being driven by a positive change in private inventories. Over the long-term, changes in private inventories don't contribute to economic growth but are a source of noise in quarterly releases. Looking at the individual components of GDP growth going into 2023, the path forward remains highly uncertain. Projecting consumer spending growth is difficult because nobody knows if consumers will continue to run down their savings to support their spending habits. Earlier in the year, consumers ran down some of their roughly \$2T in excess savings to offset the surge in energy prices. As a result, the savings rate has fallen to 2.3%, compared to the 7.7% average in the 5 years leading up to the pandemic. At the same time, credit card balances have soared as many continue to be squeezed by higher inflation. Consumers are likely to pull back on spending over the next few quarters as they face tighter policy and a softening labor market with a smaller savings cushion. However, the amount of excess cash accumulated is still substantial and should provide a buffer against a steep drop in consumption. The outlook for private investment is also unclear. Non-residential investment might suffer as capital expenditure plans have been shelved amidst tightening bank lending standards and higher costs of capital. Businesses also still hold a lot of cash on their balance sheets and shrinkage of the real capital stock in the post GFC era left a lot of old or obsolete equipment that needs to be replaced. This poses a potential tailwind for private domestic investment over the coming years. Residential fixed investment should see broad weakness in the 1<sup>st</sup> half of next year as new home sales continue fall and inventory rises in the wake of the sudden spike in mortgage rates.



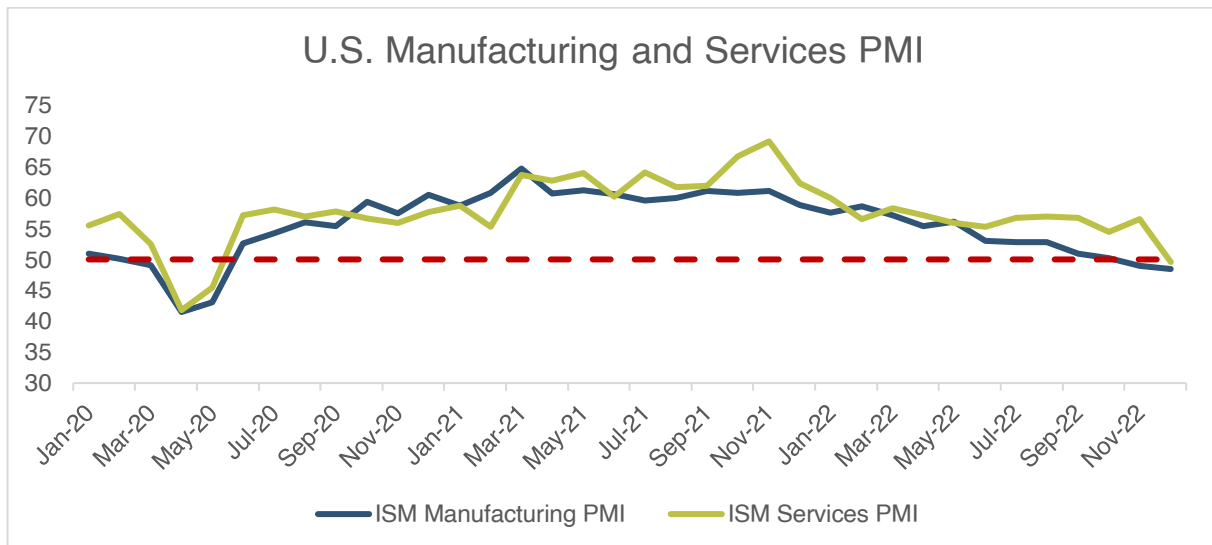
The economy is unlikely to get support from substantial federal government spending given a divided government and a shrinking budget deficit. International trade will likely suffer from slower growth overseas and a persistently strong dollar. The negative impact from net trade could be less negative if the recent drop in imports remains and the dollar depreciates as the Fed nears the end of its hiking cycle and interest rate differentials tighten. Given the worsening outlook for the major components of GDP, it's easy to see why recession predictions have been so widespread. However, many of these forecasts are grounded in the idea of the lagged impact of rate hikes on economic activity. Recent research suggests policy lags are much shorter than previously thought because financial conditions tighten when financial markets react to expected policy changes rather than when those policy changes occur. In this case, most of the impact from the current hiking cycle would be contained to 2022 and may not spillover as much into 2023. Coupling that with nominal GDP growth that is still far above historically recessionary levels, the U.S. may be able to narrowly avoid a recession.



Data from the manufacturing sector entered contractionary territory during the 4<sup>th</sup> quarter. The Institute for Supply Management’s Purchasing Managers Index (PMI) registered 48.4 in December, which is the 2<sup>nd</sup> straight contractionary reading (a reading below 50 is considered contractionary). The details of the December survey leave few reasons for investors to be bullish on the manufacturing sector. The production index fell to 48.5, its first reading below 50 since May 2020. New orders fell to 45.2, the fourth straight reading below 50. Production was already falling in November and December’s report suggests further declines are coming as manufacturers brace for weaker demand.



The supply-chain indicators within the report continue to indicate recovering supply chains and fading goods inflation. Supplier delivery times fell, and the prices paid index declined sharply to 39.4. The services PMI dropped sharply in December to 49.6, well below the consensus estimate of 55. This was the first contractionary reading after 30 consecutive months of expansionary readings. The steep decline came from contractions in business activity and new orders. New orders within services tend to lead consumption so this report is corroborating evidence for a spending slowdown ahead.



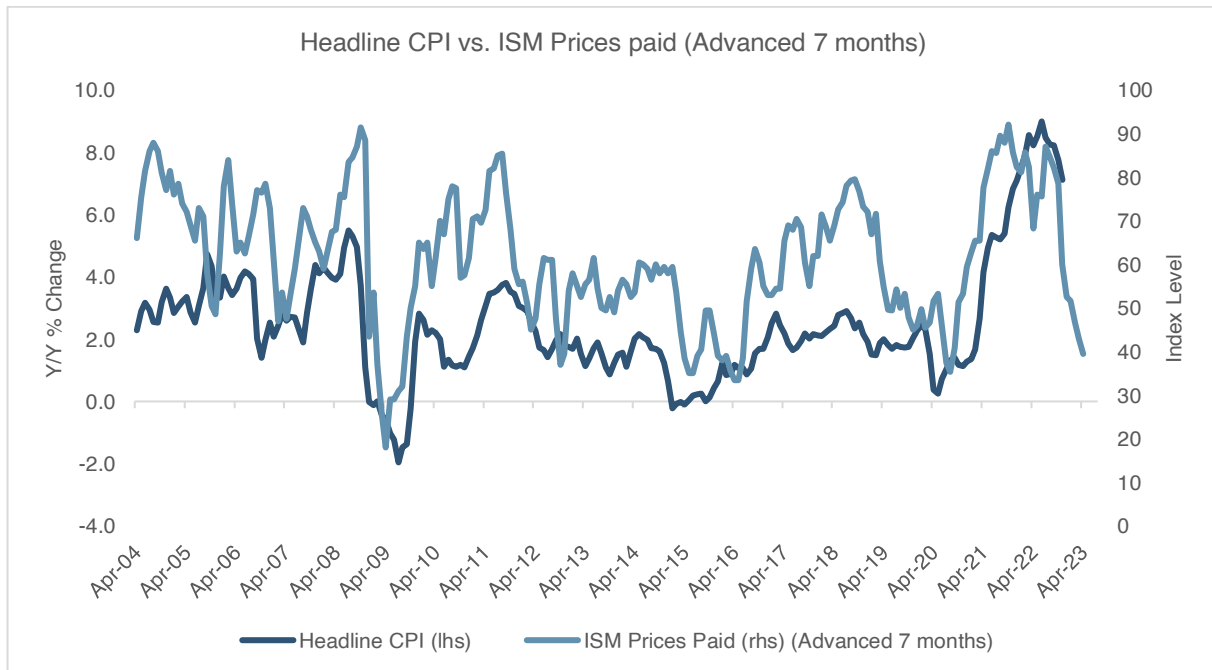
The 4th quarter finally brought the softer inflation readings that market participants sought all year. In December, the Consumer Price Index decreased -0.1%, marking a 6.5% increase over the previous 12 months. The Index for gasoline was by far the largest contributor to the monthly all items decrease, more than offsetting an increase in the shelter index. Core CPI rose 0.3% in December after rising 0.2% in the previous month.

While some potential inflationary impulses like China's reopening still exist, we feel confident that both headline and core inflation have peaked. Core PCE fell from 5% in October to 4.7% in November. Originally, core PCE inflation was driven up largely by supply chain disruptions, rent inflation, and profit margin expansion. Going forward, these trends seem set to reverse decisively. It has been well documented that supply chains are recovering across a bevy of measures whether you look at supplier delivery times, plummeting freight rates, or lower input prices. The housing market continues to slow as mortgage rates remain elevated and median home sales have rolled over. Eventually, this will feed into the shelter inflation component of core PCE inflation, which tends to lag real-time rental data by about 6-9 months. Fortunately, the Fed noted in recent press conferences that they are factoring the real-time slowdown in rents into their policy framework. Gross margins for retailers and wholesalers rose by 19% in the year to March, but the year-over-year rate has fallen to 10.9%. As supply chain disruptions ease and input prices come down, firms will not maintain the exorbitant pricing power enabled by the pandemic. Given the backdrop of a tight labor market and slower demand, it's hard to argue for margin expansion in 2023.



Margin stagnation or compression would bring the year-over-year rate to 0% or possibly into negative territory by the middle of this year. Finally, continued dollar strength will likely keep a cap on import prices and as import demand slows further the effect on core PCE inflation will be compounded.

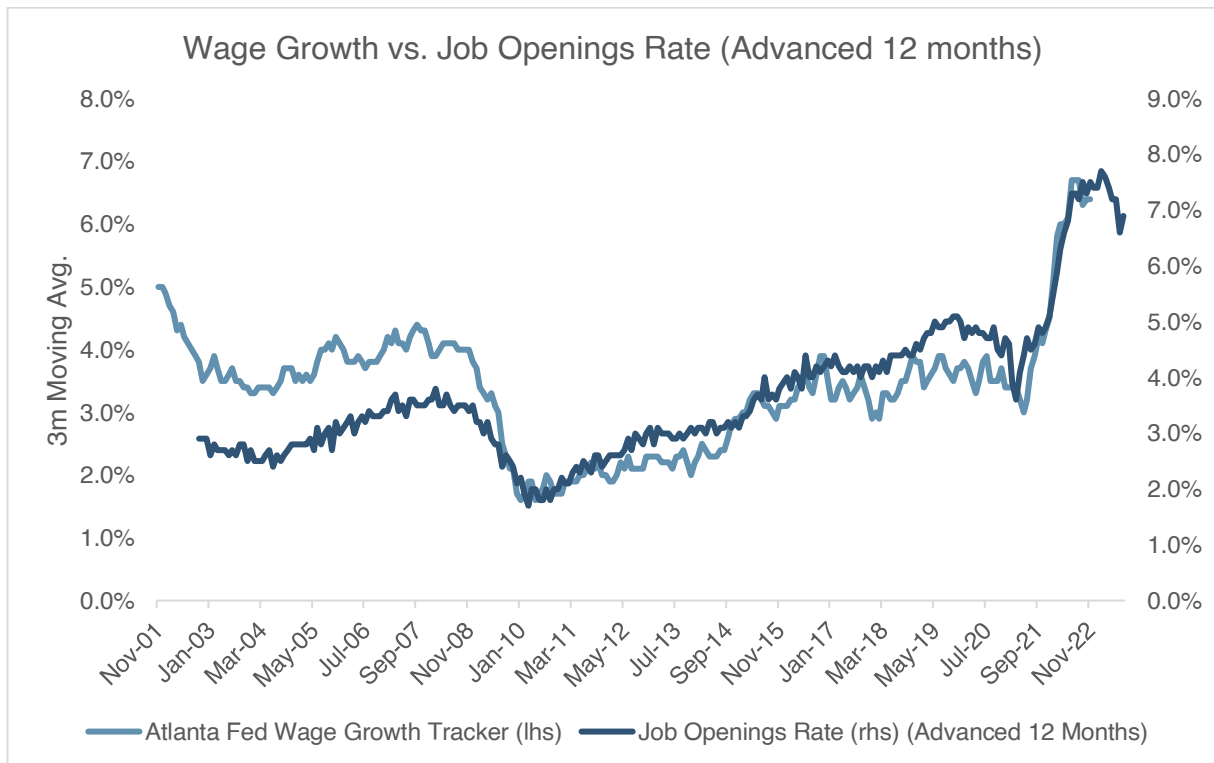
Market expectations for inflation have remained in check as the Fed has made their focus on inflation clear. Inflation breakeven rates were flat over the quarter ultimately signaling that market participants believe the Fed will be able to deal with inflation. The 5-year breakeven inflation rate currently sits at 2.2%, down from its peak of 3.6%. Inflation expectations play an important role in realized inflation because a mindset of higher inflation can become engrained. Elevated inflation expectations can create a wage-price spiral that defined the hyperinflationary episode of the 1970s. Such is the reason that the Fed has been so laser focused on keeping them anchored. However, today's labor market is far different from the 1970s labor market and a serious acceleration in wage growth at this point in the cycle seems highly unlikely.



The labor market remains very tight as payrolls growth continues to defy expectations. Total nonfarm payrolls rose by 223,000, slightly above the consensus estimate of 200,000. Payrolls growth to this point has been a combination of the post-pandemic hiring catch-up and regular cyclical hiring. The former has dominated since the initial payroll rebound but is now fading away just as cyclical headwinds for hiring are growing. Businesses will likely emphasize saving over the coming quarters in the face of higher financing costs and the squeeze on profit margins. Nascent labor market softening can be seen in the slowing rate of payrolls growth, slower pace of hiring, increased layoff announcements, and a lower quits rate. These trends have resulted in slowing wage growth, which is a key component to bringing and keeping inflation lower.



The December payrolls report not only showed slower average hourly earnings, but November's surprisingly hot reading was revised downward significantly. As a result, wages rose at an annualized rate of 4.3% in the 4<sup>th</sup> quarter, down from 5% in the 3<sup>rd</sup> quarter. This is a welcome development as central bankers have repeatedly noted that hard evidence of slower wage growth is necessary before they can shift to a less hawkish stance. Given the structural undersupply of labor it's possible for wage growth to decelerate to a pace consistent with the 2% inflation target without a material increase in the unemployment rate.

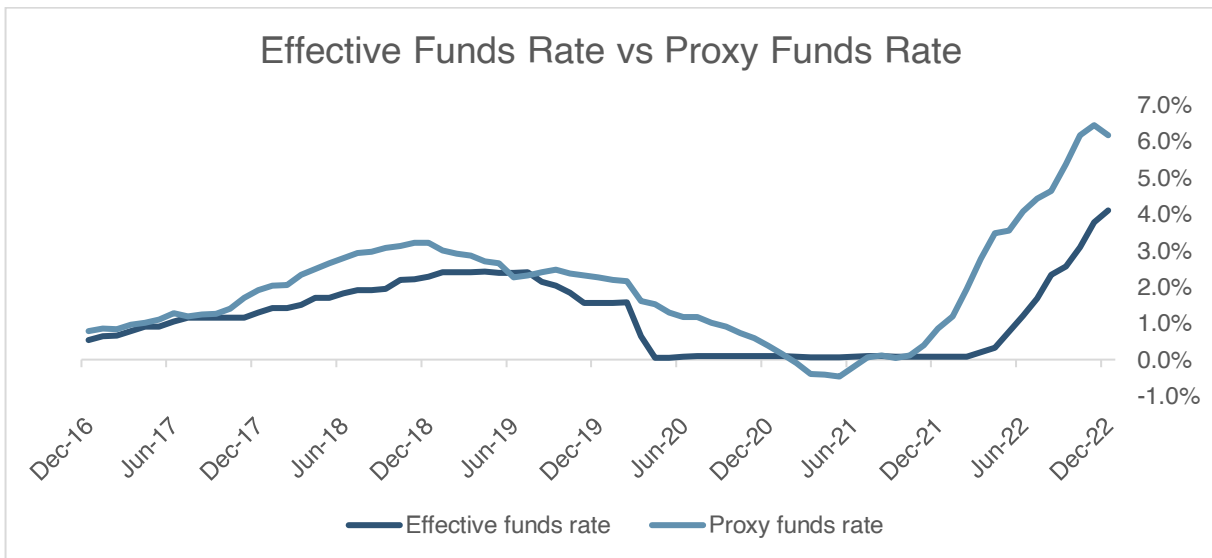


## Monetary Policy

The Fed raised rates twice more during the 4<sup>th</sup> quarter, putting the federal funds target range at 4.25%-4.50%. In December, the Fed only raised rates by 50 basis points as opposed to the previous four hikes of 75 basis points. Financial conditions are even tighter than the headline fed funds rate would suggest. The San Francisco Fed has published a proxy rate for the effective fed funds rate that incorporates quantitative tightening. That proxy rate currently sits at 6.2%, which is well above both core inflation and the economy's trend growth rate. The minutes of the December meeting showed that FOMC members remain focused on current inflation and inflation risks. FOMC members' hawkishness is likely a reflection of their new inflation forecasts, with the median core PCE forecast for the 4<sup>th</sup> quarter of 2023 now at 3.5%. It's surprising that not a single member of the FOMC thinks core PCE inflation will be below 3% at the end of this year. A continuation of the average monthly increases in October and November would generate a 2.6% year-over-year average at the end of next year. In other words, inflation will be below members' forecasts without further downward pressure from this point.



There is likely a human element at play with these projections as the Fed's credibility was shaken by the "transitory" debacle. Rather than be wrong a second time in the same direction, Fed officials could be overly cautious with their inflation forecasts, so they are more likely to deliver an inflation undershoot this year. Considering policymakers were too slow in raising their inflation expectations on the way up, it seems quite plausible they could be too slow to adjust their expectations lower on the way down. While nobody can be certain of the trajectory of slowing inflation, we find it easier to make arguments for an undershoot to the Fed's inflation target than an overshoot.



## Investment Performance

Markets rebounded broadly in the 4<sup>th</sup> quarter, providing some welcome relief to the relentless selling that characterized the prior three quarters. U.S. equities gained 7.6% over the quarter as investors cheered signs of cooling inflation and slower policy tightening from the Fed. European ex-UK equities increased 11.1% as there were signs of peaking inflation and unusually mild weather helped to stave off energy crisis fears for the time being. Emerging markets advanced 9.8% on the back of a declining dollar and improved sentiment from an earlier than expected relaxation of zero Covid policies in China. Global fixed income markets were broadly up as investors finally have some relative certainty as to when central banks will stop tightening financial conditions.

- Developed foreign equities outperformed U.S. equities in 2022** – The U.S. underperformed most major developed foreign markets as the Fed moved more aggressively than other central banks to tame inflation. Additionally, U.S. equities started the year with higher valuations than their foreign counterparts. As such, foreign equities benefited from their relatively better valuation starting point and surprisingly resilient corporate earnings. While recession fears loom in Europe, a lot of the bad news has been priced into risk assets. Emerging markets underperformed all developed markets as central banks in those regions responded swiftly to address inflation concerns. Going into 2023, China's relaxing Covid restrictions and efforts to stimulate growth could present an upside risk for the emerging markets universe broadly.



- **Low volatility and value outperformed growth and high beta** – Pure value and low volatility returned -0.8% and -4.6% for the year, respectively. Pure Growth returned -27.3% and high beta returned -20.3% over the same timeframe. Its unsurprising defensive risk-off factors outperformed given how much financial conditions tightened. The historical spread between value and growth performance narrowed, but value equities still look comparatively cheap. As long as elevated uncertainty persists, we would expect defensively oriented factors to continue to outperform.
- **Private assets outperformed their public counterparts** – Private equity, debt, and real estate investors all had vastly different experiences this year as they were shielded from some of the carnage in public markets. The relative lack of transaction activity, liquidity, and daily marking-to-market in these asset classes has always suppressed volatility. Currently, many private assets trade at historically large premiums relative to their public market equivalents. It seems likely that as transaction activity picks up, these asset classes will experience a wave of downgrades and valuations will begin to reflect the new higher rate reality.

## LOOKING FORWARD

Inflation, monetary policy, global recession risk, and geopolitics have and will likely remain the dominant drivers of equity market moves from a macro perspective. As it becomes increasingly clear that inflation has rolled over, labor market conditions and economic growth will likely become the primary focus. The playbook for a soft landing remains the same: GDP growth needs to slow to a below-potential pace, labor supply and demand need to be rebalanced, wage growth rates need to be reduced, and core inflation needs to ease. So far, there have been mixed results across these steps. GDP growth is going to slow in the 1<sup>st</sup> half of 2023 despite strong growth in the 3<sup>rd</sup> and probably 4<sup>th</sup> quarter. Rebalancing the labor market continues to progress as job openings have fallen substantially and future hiring plans are being shelved. Even still, the gap between jobs and workers needs to be reduced further and doing so may prove difficult given some of the structural elements keeping labor force participation down. Wage growth rates normalized further in the 4<sup>th</sup> quarter as labor market slack has begun to form. Core PCE inflation fell further and should continue to approach the Fed's long-term target. Falling shelter inflation and margin re-compression should be the driving forces for inflation continuing to ease. Lower commodity prices and supply-chain disruptions should keep a cap on headline inflation as well. December's miss on the services PMI is a positive development for stickier services inflation but is an ominous sign for economic growth. While these dynamics are normalizing, the question remains when central banks will be comfortable with their policy stance. Fed officials continue to reiterate they have no expectations of cutting rates in 2023, but markets are predicting modest rate cuts in the 2<sup>nd</sup> half of 2023. We expect the Fed to pause or slow the pace of hikes early in 2023 to assess the cumulative impact of their historically quick hiking cycle. The risks of a fed induced recession remain as calls for recession in 2023 have become widespread. However, earnings expectations and credit spreads have yet to reflect recessionary conditions. Earnings are expected to be flat or even slightly up, compared to the average decrease of 15% in recessionary times.





Upside risks to earnings include improving real disposable income and the excess cash sitting on consumers' balance sheets. However, consumers will likely be contending with a softer labor market and a housing downturn that could hurt consumption; especially with rates now incentivizing consumers to save. Thus, corporate earnings will be in focus as investors have lofty expectations. In this backdrop, most predicting recession are predicting a relatively mild recession. While it's unlikely that the next recession will be as severe as the last two, we're wary of predictions of anything mild. Recessions are psychological events as much as they are economic and the negative feedback loop involved creates pockets of stress that can cause systemic issues, especially with liquidity actively being removed. In our mind, allocating for a potential recession should emphasize asset classes that will provide maximum downside protection, foregoing some upside participation in the event things turn out better than feared. With that said, we feel caution is still warranted as markets have yet to materially price recession risks. Perversely, investor positioning suggests the current consensus trade is being a "contrarian" investor and allocating as if there won't be a recession because everyone is calling for one. We continue to emphasize quality, investment-grade fixed income to protect against slowing growth and further equity market downside. Given the flatness of the yield curve and the potential for further terminal rate repricing, we think a shorter to neutral duration stance is still appropriate. However, there will likely be a point in the year when extending duration makes sense as the economic slowdown advances. While we don't expect widespread defaults, we're cautious on riskier credit issues because spreads don't adequately reflect the near-term risk and the potential liquidity issues in times of stress. Within equity, the emphasis remains on utilizing managers who seek to own quality businesses with defensible margins and strong balance sheets. We remain overweight value given the style's sectoral composition benefits and better valuations. Having said that, growth equities play a role in portfolios and their decline this year has brought them more broadly in line with the rest of the market. Ensuring portfolios remain exposed to both cyclical companies that can benefit from continued economic growth and secular growth companies at reasonable valuations, accounts for both upside and downside risks. Today's investing environment can be very uncomfortable, but at current levels the entry point in stocks and bonds looks to be compelling for long-term investors.

## Scenario Updates

### Base Scenario

*55% Probability*

The conflict in Ukraine drags along as a diplomatic solution remains unattainable but the conflict is contained to Ukraine. Sanctions currently imposed on Russia remain in place and escalate in response to further Russian aggression. U.S. GDP growth rates are below-potential as the economy responds to tighter financial conditions and softer consumption spending. Labor supply shortages and supply chain disruptions continue to improve but remain stubbornly above pre-pandemic levels. Wage growth continues to normalize and ultimately lands in a range consistent with the Fed's 2% inflation target. The Fed pauses rate hikes in the 1<sup>st</sup> half of the year to assess the economy's response to previous rate hikes. Policy rates remain in restrictive territory as long as financial market functioning isn't an issue. Bond yields remain elevated, but fixed income begins to behave in-line with traditional risk-off scenarios. Corporate earnings growth is flat as consumer spending slows and margins compress. The yield curve remains flattish/mildly inverted as the Fed pushes up the front end and growth concerns keep a cap on the long end. Volatility persists as investors react to incoming data and its implications on economic growth and policy rates.

### Upside Scenario

*15% Probability*

Factors that could influence the Upside Scenario:

- The conflict in Ukraine has a swifter resolution than currently expected. Sanctions currently imposed on Russia don't escalate and possibly lessen. Food and energy prices fall further providing more inflation relief.
- GDP growth rates exceed expectations due to a sharper than expected decrease in inflation, burgeoning real disposable income, and consumers willing to drawdown on savings.
- Labor supply shortages ease more than expected or are offset by an increase in overall labor productivity and innovation.
- The Fed is patient and able to tone down some of their hawkishness as inflation falls faster than they project. Equities rebound as multiples get some relief from elevated rate volatility.
- Corporate earnings beat expectations, driven by resilient nominal growth, sustained record-high margins and better than expected consumption spending. The yield curve steepens, real yields stay low, and risk assets thrive.

**Downside Scenario****30% Probability**

Factors that could influence the Downside Scenario:

- The conflict in Ukraine drags along as a diplomatic solution remains unattainable and the threat of NATO involvement increases meaningfully. Harsh sanctions are imposed on Russia, potentially eliciting an escalatory response from Moscow.
- Consumers are unwilling to draw down on built up pandemic savings to sustain consumption, growth falls quicker than expected as a result.
- The Fed's decisions thus far prove too restrictive for the economy, sending the U.S. economy into recession. Equities re-test or break through their previous lows as the earnings outlook dims. The yield curve inverts substantially for a meaningful amount of time, denting consumer sentiment further.
- The slowdown in the housing market has a more pronounced impact on consumer spending and overall economic activity than currently forecast.
- Rapidly tightening financial conditions create a potential systemic financial crisis, like what we saw in the U.K. pension system, that results in a global financial contagion.
- Corporate earnings are well below expectations creating an environment of both falling earnings and compressing valuations leading to sharp equity market selloffs.



## ECONOMIC STATISTICS

	Current	One Year Ago
Real GDP Growth (Annl. % Change From Prior Qtr.)	1.94%	4.96%
Unemployment Rate	3.50%	3.90%
Labor Force Participation Rate	62.30%	62.00%
Core CPI (Year-Over-Year)	5.69%	5.48%
Real Personal Income Growth (Year-over-Year)	-0.79%	1.59%
10 Year Treasury Rate	3.62%	1.47%

## US EQUITY MARKET

### Major US Market

	Q4 2022	YTD	1 Year	3 Year	5 Year	2020	2019	2018
Russell 3000 Index	7.2%	-19.2%	-19.2%	7.1%	8.8%	-19.2%	25.7%	20.9%
FTSE RAFI US 3000 Index	12.3%	-7.9%	-7.9%	9.5%	8.9%	-7.9%	31.5%	8.3%
Russell 3000 Equal Weighted	5.2%	-22.9%	-22.9%	4.7%	4.8%	-22.9%	19.5%	24.5%
S&P 500 Index	7.6%	-18.1%	-18.1%	7.7%	9.4%	-18.1%	28.7%	18.4%
Russell Mid Cap Index	9.2%	-17.3%	-17.3%	5.9%	7.1%	-17.3%	22.6%	17.1%
Russell 2000 Index	6.2%	-20.4%	-20.4%	3.1%	4.1%	-20.4%	14.8%	20.0%
NASDAQ 100	0.0%	-32.4%	-32.4%	8.7%	12.4%	-32.4%	27.5%	48.9%

Data Source: Federal Reserve, Advus

### Top Weights <sup>(a)</sup>

	Weight	Return	Contribution
Apple Inc	6.65%	-5.83%	-0.40%
Microsoft Corp	5.51%	3.26%	0.19%
Amazon.com Inc	2.71%	-25.66%	-0.85%
Alphabet Inc Class A	1.76%	-7.76%	-0.15%
Berkshire Hathaway Inc Class B	1.65%	15.68%	0.25%
Alphabet Inc Class C	1.58%	-7.72%	-0.13%
Tesla Inc	1.57%	-53.56%	-1.25%
UnitedHealth Group Inc	1.53%	5.30%	0.08%
Johnson & Johnson	1.40%	8.83%	0.13%
Exxon Mobil Corp	1.37%	27.35%	0.33%

### Top Contributors <sup>(a)</sup>

	Weight	Return	Contribution
Exxon Mobil Corp	1.37%	27.35%	0.33%
JPMorgan Chase & Co	1.14%	29.49%	0.30%
Berkshire Hathaway Inc Class B	1.65%	15.68%	0.25%
Chevron Corp	0.97%	25.90%	0.22%
Merck & Co Inc	0.79%	29.67%	0.21%
Procter & Gamble Co	1.03%	20.91%	0.21%
NVIDIA Corp	1.12%	20.42%	0.20%
Microsoft Corp	5.51%	3.26%	0.19%
Mastercard Inc Class A	0.86%	22.49%	0.18%
AbbVie Inc	0.83%	21.60%	0.17%

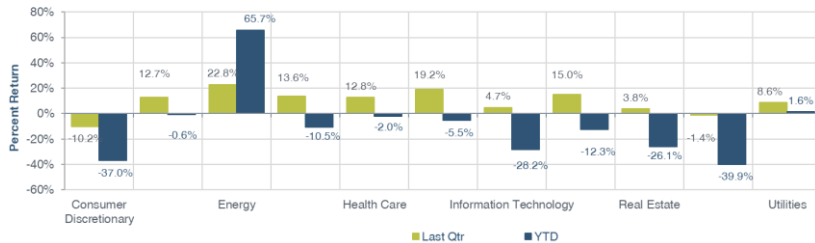
### Top Detractors <sup>(a)</sup>

	Weight	Return	Contribution
Tesla Inc	1.57%	-53.56%	-1.25%
Tesla Inc	2.71%	-25.66%	-0.85%
Amazon.com Inc	6.65%	-5.83%	-0.40%
Apple Inc	1.76%	-7.76%	-0.15%
Alphabet Inc Class A	1.58%	-7.72%	-0.13%
Alphabet Inc Class C	0.83%	-11.31%	-0.12%
Meta Platforms Inc Class A	0.29%	-17.25%	-0.06%
PayPal Holdings Inc	0.54%	-7.90%	-0.04%
The Walt Disney Co	0.44%	-7.82%	-0.04%
Salesforce Inc	0.67%	-3.16%	-0.02%

### Russell 3000 Style & Cap Summary

Fourth Quarter Results							Year To Date Results		
	Mo.	Qtr	Value	Core	Growth		Value	Core	Growth
Large	Oct		10.66%	7.72%	5.39%	Large	-5.11%	-19.77%	-29.74%
	Nov	Q4	6.21%	5.20%	4.35%				
	Dec		-3.50%	-5.96%	-8.04%				
Mid	Oct		9.45%	8.88%	7.86%	Mid	-12.03%	-17.32%	-26.72%
	Nov	Q4	6.32%	6.01%	5.44%				
	Dec		-5.08%	-5.40%	-6.00%				
Small	Oct		12.59%	11.01%	9.49%	Small	-14.48%	-20.44%	-26.36%
	Nov	Q4	3.06%	2.34%	1.63%				
	Dec		-6.56%	-6.49%	-6.42%				

### S&P 500 Sector Performance



## INTERNATIONAL EQUITY

International Equity Market Performance	Q4 2022	YTD	1 Year	3 Year	5 Year
MSCI EAFE	17.40%	-14.01%	-14.01%	1.34%	2.03%
MSCI EAFE Value	19.73%	-4.95%	-4.95%	1.26%	0.79%
MSCI EAFE Growth	15.08%	-22.69%	-22.69%	0.79%	2.85%
MSCI EM	9.79%	-19.74%	-19.74%	-2.34%	-1.03%
MSCI ACWI Ex. USA.	14.37%	-15.57%	-15.57%	0.53%	1.36%

Data Source for all data in tables: Morningstar Direct

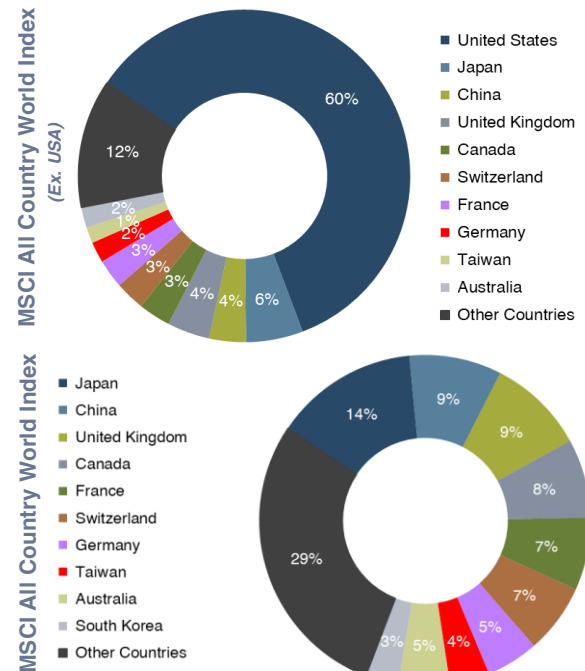
(a) = SPDR S&P 500 ETF

INTERNATIONAL EQUITY (continued)

	Last Quarter			Year To Date		
	Local	USD	Impact of US Dollar (a)	Local	USD	Impact of US Dollar (a)
MSCI ACWI Ex USA	7.90%	14.37%	6.47%	-9.16%	-15.57%	-6.41%
MSCI Europe	10.46%	19.42%	8.96%	-7.97%	-14.53%	-6.56%
MSCI Europe Ex UK	11.07%	20.20%	9.13%	-12.23%	-17.28%	-5.05%
MSCI United Kingdom	8.56%	16.98%	8.42%	7.16%	-4.83%	-11.99%
MSCI Pacific Ex Japan	10.70%	15.75%	5.06%	-1.67%	-5.86%	-4.19%
MSCI Japan	3.25%	13.26%	10.02%	-4.10%	-16.31%	-12.20%
MSCI France	12.26%	22.30%	10.04%	-6.94%	-12.67%	-5.72%
MSCI Switzerland	3.79%	10.41%	6.62%	-16.33%	-17.60%	-1.27%
MSCI Germany	14.45%	24.69%	10.23%	-16.48%	-21.62%	-5.14%
MSCI Canada	6.15%	7.65%	1.50%	-5.78%	-12.17%	-6.38%
MSCI China	12.50%	13.53%	1.03%	-20.58%	-21.80%	-1.22%
MSCI India	3.78%	2.06%	-1.73%	2.96%	-7.49%	-10.45%
MSCI Brazil	0.07%	2.51%	2.45%	8.64%	14.61%	5.97%
MSCI Russia	0.00%	0.00%	0.00%	-100.00%	-100.00%	0.00%

International Equity Market Performance

Country Weights



Data Source: Morningstar and iShares ETFs as the representative index proxies. Weights are average for Q4.

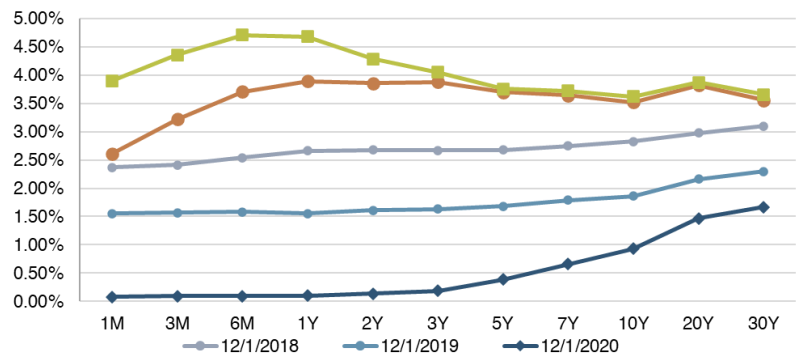
Assumes Gross Reinvestment of Dividends

(a) Impact of Dollar: For a US investor, a strengthening dollar has a negative impact on non-US asset returns when converted to US dollars since the conversion requires more of a foreign currency to purchase the more expensive US dollar. A weakening dollar has the opposite effect; the foreign currency can buy more US dollars.

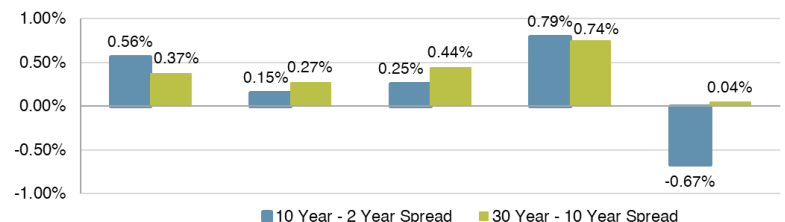
FIXED INCOME

Major Market Averages	Q4 2022	YTD	1 Year	3 Year
ICE BofAML US 3M Treasury Bill	0.84%	1.46%	1.46%	0.72%
Bloomberg Barclays US Govt/Credit 1-3 Yr	0.89%	-3.69%	-3.69%	-0.32%
Bloomberg Barclays US Govt Interm	1.01%	-7.73%	-7.73%	-1.38%
Bloomberg Barclays US Govt/Credit Interm	1.54%	-8.23%	-8.23%	-1.26%
Bloomberg Barclays US Govt/Credit	1.80%	-13.58%	-13.58%	-2.57%
Bloomberg Barclays US Agg Interm	1.72%	-9.51%	-9.51%	-1.93%
Bloomberg Barclays US Agg Bond	1.87%	-13.01%	-13.01%	-2.71%
Bloomberg Barclays Global Agg Bond	4.55%	-16.25%	-16.25%	-4.48%
Bloomberg Barclays US Treasury	0.72%	-12.46%	-12.46%	-2.62%
Bloomberg Barclays US Treasury US TIPS	2.04%	-11.85%	-11.85%	1.21%
Bloomberg Barclays US Corporate IG	3.63%	-15.76%	-15.76%	-2.88%
Bloomberg Barclays High Yield Corporate	4.17%	-11.19%	-11.19%	0.05%
Bloomberg Barclays Municipal	4.10%	-8.53%	-8.53%	-0.77%
Bloomberg Barclays Municipal 7 Yr 6-8	3.67%	-5.97%	-5.97%	-0.27%
Credit Quality				
B of A/Merrill Lynch US Corporate AAA	2.46%	-18.94%	-18.94%	-3.88%
B of A/Merrill Lynch US Corporate AA	2.68%	-16.00%	-16.00%	-3.23%
B of A/Merrill Lynch US Corporate A	3.11%	-14.69%	-14.69%	-2.73%
B of A/Merrill Lynch US Corporate BBB	4.06%	-15.86%	-15.86%	-2.68%
B of A/Merrill Lynch US Corporate BB	4.33%	-10.57%	-10.57%	0.51%
B of A/Merrill Lynch US Corporate B	4.33%	-10.58%	-10.58%	-0.94%
B of A/Merrill Lynch US Corp. CCC & Lower	1.12%	-16.32%	-16.32%	-1.68%

Yield Curve



Spread Analysis



Data Source: Morningstar



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