2023 Outlook – Live Another Day

Sierra Capital Quarterly Newsletter

January 2023

Fincnacial Conditions Screen Tight As Investors Eye Inflation Data

Key points:

Entering the first half of 2023 in the United States, the consensus view is that there will continue to be strong earnings headwinds as the economy slows from Federal Reserve induced financial tightening coupled with margin compression.

During 2022, the Federal Reserve successfully tightened financial conditions by raising the "Fed Funds Rate", or the rate the Federal Reserve pays on deposits, to 4.50% from 0.25% as well as a reduction of their balance sheet by over $340bn in just 6 months (through 9/31/22). This was done largely to fight inflation, which peaked in June of 2022 at 9%, but has since fallen to 7.1% in November of 2022.

While the Federal Reserve is looking for goods and services deflation, wage inflation has proven sticky which does not bode well for business margins and profits. As these risks to economic activity are looking quite evident, the Federal Reserve has made their stance clear that they will hold monetary policy restrictive to fight inflation, which consensus views as a pause in hikes in the 2nd half of 2023 once 5-5.25% Fed Funds rate is reached.

While the view of lower earnings, compressed margins, and a restrictive Federal Reserve does not read very optimistically, the reality is that the market has priced in some of these risks as valuation multiples are down significantly and fixed income yields are much higher as the base rate (treasuries) and spreads (credit risk) have widened. The near-term view, however, does call for more volatility and a potential retest of the 2022 lows or deeper before returning to the 4,000-4,200 S&P 500 level, depending on the strategist you follow.

Coming into 2023, Market Strategists on Wallstreet are nearly all forecasting a sideways equity market with lower Earning Per Share estimates than their Equity Analyst peers. The rationale for lower earnings in 2023 stem largely from the effects of tighter Monetary policy to fight inflation. (Table 1)

Table 1: Market Strategists 2023 S&P Targets

Firm	2023 S&P 500	2023 EPS	Implied P/E
Bank of America	4000	200	20.0
Barclays	3725	207	18.0
BMO	4300	220	19.6
CFRA	4575	227	20.1
Citi	3900	215	18.1
Credit Suisse	4050	215	18.8
Deutsche Bank	4500	195	23.1
Evercore ISI	4150	206	20.2
Goldman Sachs	4000	224	17.9
JPMorgan Chase	4200	205	20.5
Morgan Stanley	3900	195	20.0
Oppenheimer	4400	230	19.1
RBC	4100	199	20.6
UBS	3900	198	19.7
Wells Fargo	4400	205	21.5
Median	**4100**	**206**	**20.0**

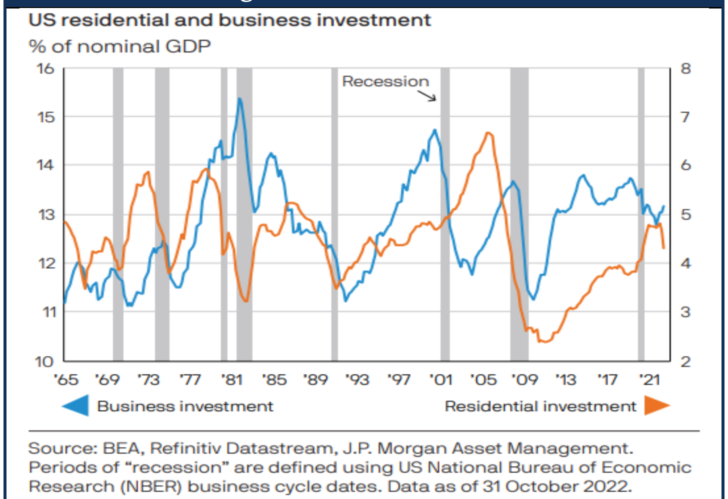
Source: CNBC

The question around inflation and whether the United States enters a recession is a hot topic during client conversations. Our general view is that there are signs that inflation is responding to a weakening economy and tighter financial conditions. While 2023 will likely not see 2% run rate inflation rate, it seems more likely that the US can approach a mid-3% inflation rate by year end. November "Headline" and "Core" inflation came in at 0.2% and 0.1%, respectively, even though expectations were for 0.3%. If we continue at the November levels for future readings, the Fed can claim victory as we would be near the 2% target.

When reading through other year end reports, there seem to be 2 main bearish views. One is that we have returned to an inflation regime such as the 1970s which would require a deep recession and spike in unemployment to push inflation back down. The second is that moderate recessions rarely occur as the slowdown tends to spiral and business retreat for self-preservation.

This has happened in the past followed by boom cycles, particularly in housing and business investment. While housing prices surged since Covid, both business investment and housing growth has been more modest this past decade than prior cycles which could give hope of a soft landing. (Table 2)

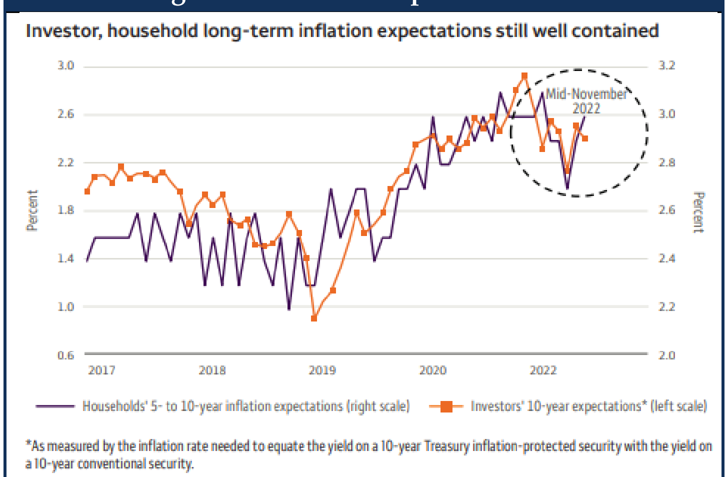
Table 2: Not Enough Boom For a Bust



Source: JP Morgan, BEA

Inflation expectations calculated by 10-year TIPS (Treasury Inflation Protected Securities) have recently fallen back to a 2.25% inflation rate from a 3% peak back in 4Q22. These lower rate expectations can be explained as the market pricing in much lower inflation which could let the Federal Reserve pivot their stance on policy. (Table 3)

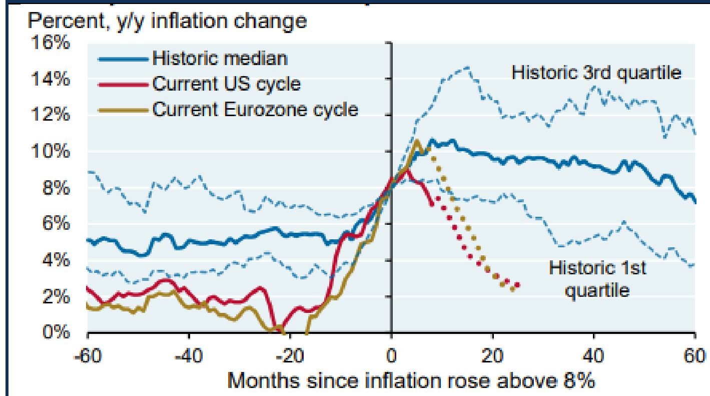
Table 3: Long-Term Inflation Expectations



Source: Wells Fargo, University of Michigan

What is interesting is that this estimated quick reduction in inflation would be unlike other developed market inflationary environments in the past which have historically tended to take longer to recede. However, the circumstances behind the surge in inflation starting from Covid is unlike other times of high inflation as well from supply chain mixed with global government stimulus. (Table 4)

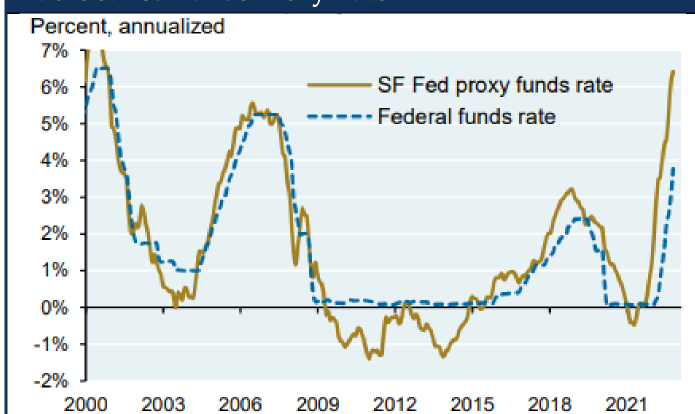
Table 4: Developed Market Inflation Since 1970



Source: Deutsche Bank, JP Morgan

Additionally, while behind the curve, the Federal Reserve has tightened financial conditions considerably by hiking rates and reducing its balance sheet by roughly $400bn through 2022. A good way to view the unprecedented tightening rather than just looking at the Fed Funds rate is the "Proxy Funds Rate" which measures "public and private borrowing rates and spreads to infer the broader stance of monetary policy" (San Francisco Federal Reserve), and it is the highest it has been in over 20 years. This further reveals that quantitative tightening is indeed tightening financial conditions. (Table 5)

Table 5: Fed Funds Proxy Rate

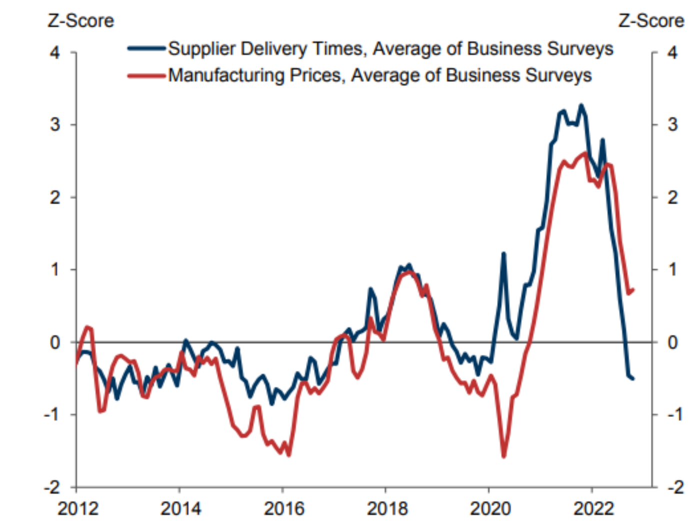


Source: SF Fed, JP Morgan

As financial conditions become more restrictive, the Fed will look for signals that inflation is coming back to normal levels through goods, shelter, and wages.

For goods, supply chain recovery is finally here and will help push core goods inflation negative. Delivery times according to business survey are below pre-Covid levels as inventories stack up in warehouses while manufacturing prices still remain elevated, however lower than its highs. (Table 6)

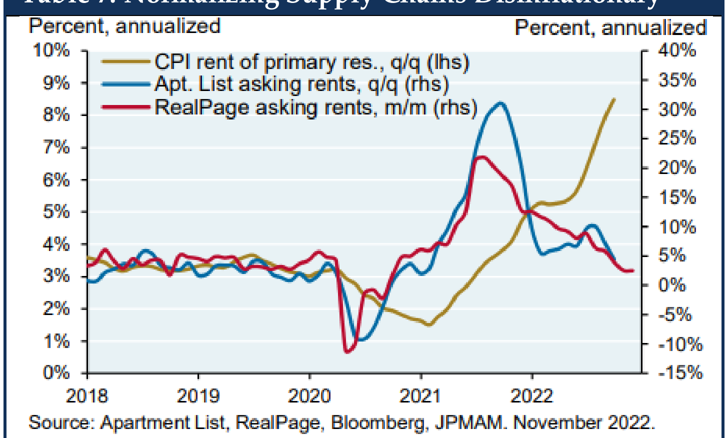
Table 6: Normalizing Supply Chains Disinflationary



Source: BEA, S&P, Hanover, Goldman Sachs

While goods inflation is trending lower, the Shelter CPI number has yet to subside, however it is also lagging. This is largely due to the rental market typically fixing rates for a full year. Therefore, for the CPI data to fully reflect the market, we must wait a full year for most rentals to re-lease or renew. Instead, using more live data shows us that rent inflation has slowed significantly and will likely show in the official CPI data in future months. (Table 7)

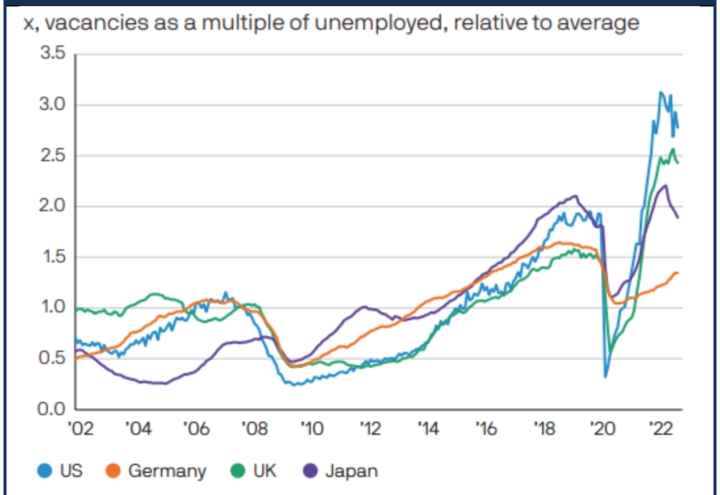
Table 7: Normalizing Supply Chains Disinflationary



Source: Apartment List, RealPage, Bloomberg, JPMAM

Given we have visibility on Shelter CPI declining, the next inflationary number the Fed wants to see come down is regarding wage inflation. The job market to date is still considered hot, and vacancies currently exceed unemployed. However, job market data is showing that hiring is indeed slowing, vacancies are being pulled, and fewer people are quitting on a global basis. (Table 8)

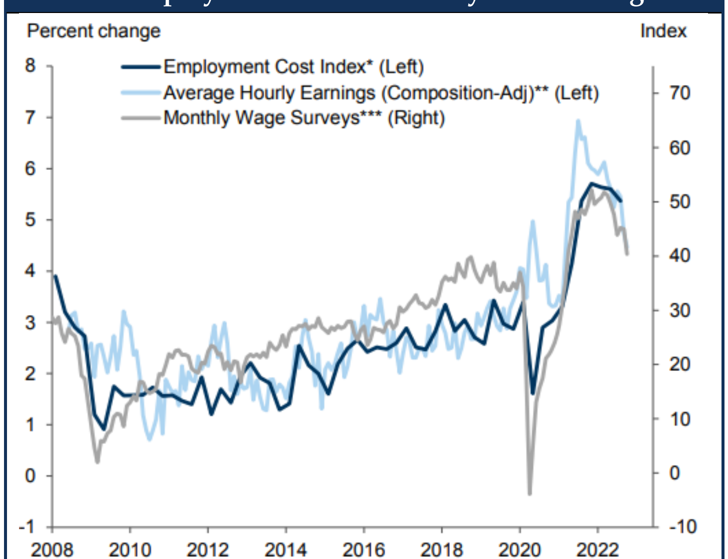
Table 8: Vacancies Globally vs Unemployment



Source: Bloomberg, BLS, Eurostat, MIAC, ONS, JP Morgan

While unemployment has most recently decreased, the slowing of those quitting could be signaling that wage growth is also easing, as evidenced by the December lower than consensus increase in wage growth. Higher pay screened as once of the main reason employees quit and moved jobs so aggressively in 2020-2022, helping stem the wage inflation the Fed is trying to fight. (Table 9)

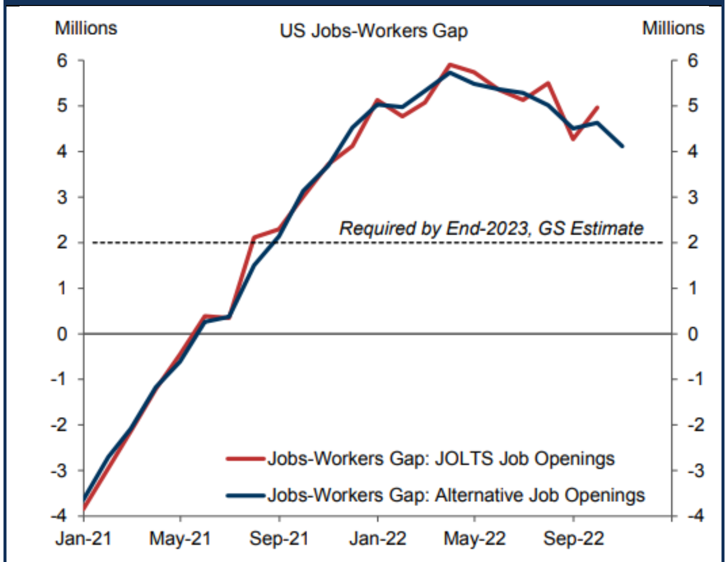
Table 9: Employment Cost Potentially Normalizing



Source: BLS, Goldman Sachs

Based on job data from Indeed and Linkup, Goldman Sachs estimates that the job-workers gap, or labor demand less labor supply, has fallen from a 6 million gap peak to just over 4 million as economic demand has slowed, unemployment benefits have normalized forcing people back to work, and savings are being depleted. Goldman believes a 2 million job gap is required to slow wage growth to a more normalized level. (Table 10)

Table 10: Jobs-Worker Gap To Normalize Wage Growth



Source: Hanover, Linkup, Indeed, Goldman Sachs

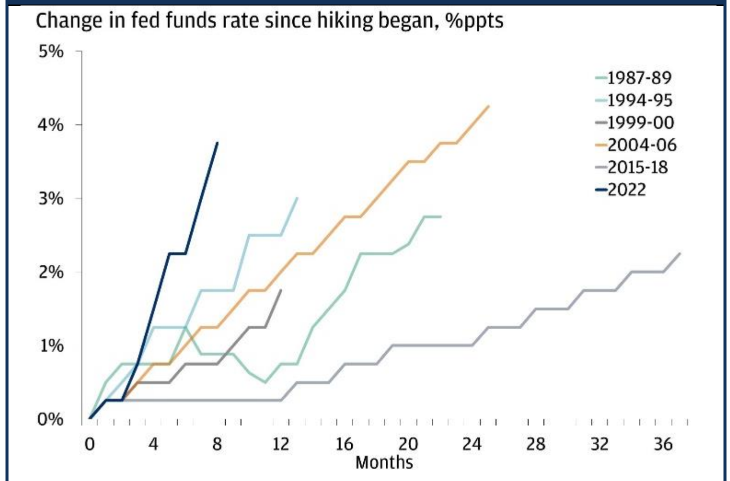
While we have recently seen layoffs in Tech, Home Building, and cyclical banking jobs, there are still around 4 million less workers today than prior than the pandemic due to early retirements and other reasons. This will likely cause the job market to not fully normalize for quite some time.

With the prospects of inflation dropping in 2023 given current financial conditions, Wall Street and the bond market do not view the Federal Reserve as having to hike substantially more from here. The Fed Funds rate likely rises 25bps three more times; in February, March, and potentially May to settle at 5.00%-5.25%. The question remains, however, if this is too much tightening which will break the economy and send the United States into a recession. The consensus view is leaning towards a Fed induced recession in 2023 which we hope 4Q22 earnings and incoming economic data will shed some light on in the coming weeks.

Fixed Income:

The market typically leads the path of the Federal Reserve, and the futures curve has priced in a ~5.00-5.25% Fed Funds rate by the end of the 1st half of 2023. Since the start of the hiking cycle, this has been an unprecedented increase in short term rates in recent historical context. In regards to long term rates, they are likely to remain in the 3.50% range as long as inflation data does not materially surprise to the upside or downside for multiple readings. (Table 11)

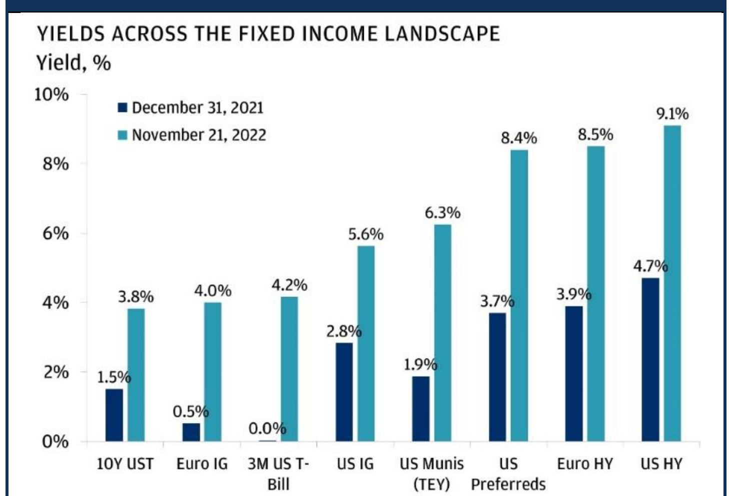
Table 11: Most Aggressive Fed Hiking in 4 Decades



Source: Bloomberg

This means that the ~4.35% 10-year treasury yield last seen in October of 2022 could be an intermediate or long-term term high. Credit spreads, however, can potentially expand as an economic and earnings slowdown persists. Compared to the ~1.60% 10 year and 8bps SOFR rate at the start of 2021, the 3.5% 10 year and 4.3% SOFR rate today, in addition, spread widening provides investors with meaningful yield to ride out near term market volatility. (Table 12)

Table 12: Year End Yields Across Fixed Income



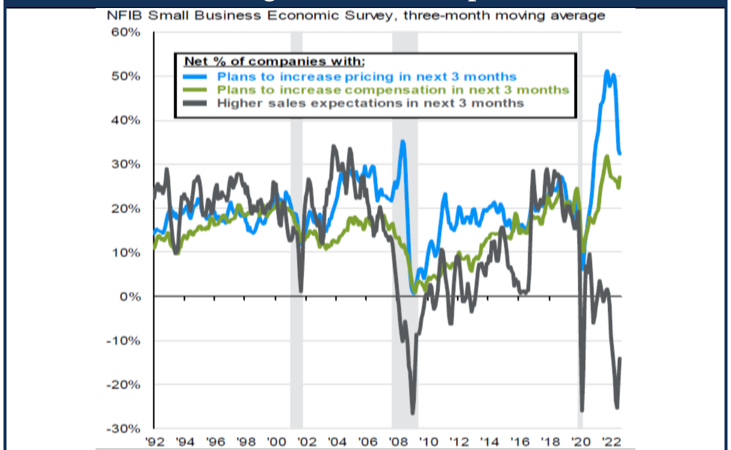
Source: Bloomberg, JP Morgan

While long term yields typically peak prior to the end of a Fed hiking cycle, we favor remaining nimble in a barbell strategy in portfolios. Having a longer duration offset with short duration bonds helps clients take advantage of high short-term yields, provides economic protection if the economy deteriorates and the Fed cuts rates, and leaves the ability to quickly reallocate when an economic recovery seems to gain traction. As an economic slowdown is likely in front of us, we prefer Investment Grade Corporate bonds, Municipals, and Mortgage-Backed Securities.

Equities:

We see corporate revenue in the US declining as the US economy continues to slow. Operating margins likely continue to slip from its peaks due to expense growth remaining elevated while sales expectations stall. (Table 13)

Table 13: Prices, Wages, and Sales Expectations



Source: NFIB, JP Morgan

This earnings pressure become more visible with the release of 4Q22 earnings in a few weeks. The S&P500 2023 Price to Earnings ratio is sitting at 16.7x, in line with its 25-year median, and not likely discounted enough for the near-term backdrop. (Table 14)

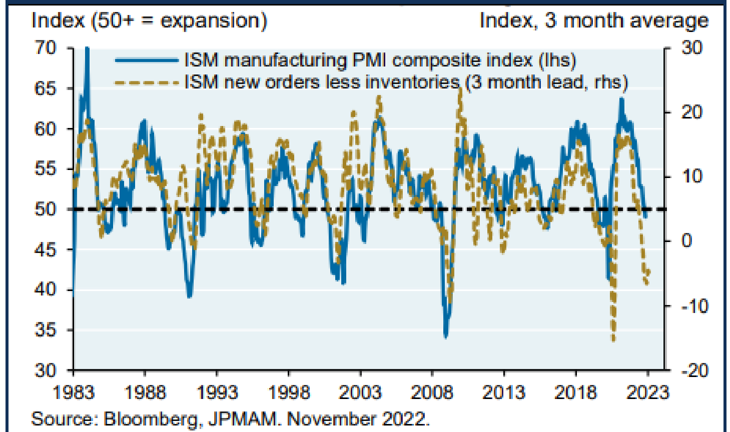
Table 14: S&P 500 Index Forward P/E Ratio

Source: FactSet, JP Morgan

Bottoms up, or company specific 2023 EPS sits at $229 per share while median strategists see ~$206 of earnings per share, as per FactSet. An average of the two would be a 5% decline in earnings while some notable strategists calling for 10%+ decline in earnings.

JP Morgan models tracking manufacturing surveys show that given rising inventories and falling new orders, ISM Purchasing Manufacturing Index in the US and in the EU are likely to bottom in 1Q or 2Q of 2023. (Table 15)

Table 15: New Orders Less Inventories Leading ISM



Source: Bloomberg, JP Morgan (Nov 22)

When put into the firms' predictive models with other leading indicators, the results would suggest that a major growth slowdown is on its way in the US and Europe which will hit corporate earnings. By around 10-20% in 2023. (Table 16)

Table 16: Leading Indicators Point to Earnings Decline

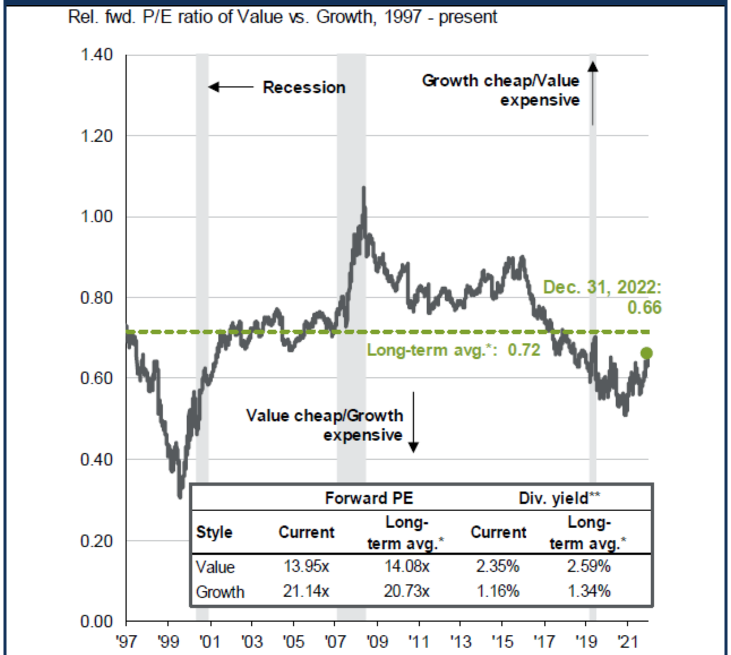
Source: Bloomberg, Morgan Stanley, JP Morgan (October 22)

Final Thoughts:

While strategy reports for 2023 have a US recession as a high probability, many see the 2nd half of 2023 as the end of such deep or shallow economic slowdown as inflation cools and the Fed begins to reverse its policy. This easing of financial conditions should allow P/E multiples to expand alongside investor sentiment. Similar to 2009 and 2020, equities will likely recover faster than earnings through multiple expansion. However, given the looming economy, our defensive positioning remains in place in the near term.

As an example for how to play defense, the Russell 1000 Value trades ~14x vs Growth at 21x, and still screens relatively cheap. If looking at specific sectors, favored sectors include Health Care, Energy, and Consumer Staples given their near term stable and growing earnings as well and strong free cash flow profile. (Table 17)

Table 17: Value vs Growth Relative Valuation



	Forward PE		Div. yield**	
Style	Current	Long-term avg.*	Current	Long-term avg.*
Value	13.95x	14.08x	2.35%	2.59%
Growth	21.14x	20.73x	1.16%	1.34%

Source: FactSet, JP Morgan, FTSE Russell, NBER

As the dollar dominated most other currencies in 2022, we believe that a US economic slowdown and potential Fed pivot in 2023 should help weaken the US dollar. This would provide a tailwind for global equities on currency, however the United States equity markets are also both more expensive than the rest of the world on an absolute and historical basis. (Table 18)

Table 18: 1-Yr Forward Price to Earnings Ratio

NTM Price/Earnings	Current	10Yr Median	Delta %
MSCI ACWI exUS	12.1	13.4	-9%
MSCI ACWI wUS	14.6	15.1	-3%
iShares Europe	12.1	14.2	-15%
MSCI AIPC exJapan	14.3	15.2	-6%
MSCI Emerging Markets	11.8	11.9	0%
Average	13.0	13.9	-7%

Source: Factset

The US has also outperformed the world in relation to returns for over 15 years. Performance in Asia, particularly Taiwan, South Korea, and China have fared terribly in 2022 as capital flowed to "safe havens". As the macroeconomic environment and investor sentiment improves, the next decade of outperformance may be outside the United States, leaving us more bullish the "rest of the world", particularly developed markets. (Table 19)

Table 19: US Equities Outperformance vs Rest of World

Source: Bank of America

Lastly, due to fixed income finally providing near long term equity like returns, we like the short end of the curve in order for investors to remain nimble and opportunistic to deploy into equities. Value based ETFs that screen with high free cash flow and discounted valuations are our preferred pure market beta exposure while active management in long/short equity with lower net exposures can provide significant downside protection while participating in the market's upside. We also like structured credit in addition to Lower and Middle market private credit as they can provide investors with high yields and significant structural protections not available in high yield or leveraged loans. While the future is unknown, we remain patient and watch the data closely for a better time to add additional risk, but are lucky to have plenty of places to "ride out" any storms.

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	Base Case	Yields
Bank of America	Going into 2023, one expected shock remains: recession. The US, euro area and UK are all expected to see recessions next year, and the rest of the world should continue to weaken, with China a notable exception. The recession shock likely means corporate earnings and economic growth will come under pressure in the first half of the year, while at the same time, China's reopening offers a reprieve for certain assets.	US rates stay elevated but expect a decline by year end 2023. The yield curve is expected to dis-invert and rates volatility should fall. Both two-year and 10-year US Treasuries should end 2023 at 3.25%. Sectors hurt by rising rates in 2022 may benefit in 2023
Citi	We are currently at a spot in the US business cycle where fears of inflation and the Fed are fading, but fears of a recession are not yet pronounced enough to lead to downside in equity markets. As we enter 2023, we expect US recession fears to become the driver. We remain underweight assets that are likely to underperform into a US recession.	Broader investment-grade bonds offer a range of higher yields at every maturity. And loans in private markets – think private equity lending – offer larger yield premiums with lower loan-to-value ratios than at any time since 2008-09.
Credit Suisse	We expect the euro zone and UK to have slipped into recession, while China is in a growth recession. These economies should bottom out by mid-2023 and begin a weak, tentative recovery – a scenario that rests on the crucial assumption that the US manages to avoid a recession. Economic growth will generally remain low in 2023 against the backdrop of tight monetary conditions and the ongoing reset of geopolitics.	
Deutsche Bank	The recession we have now been anticipating for nine months draws nearer. A downturn may already be under way in Germany and the euro area overall thanks to the energy shock stemming from the Russia-Ukraine war. Our expectation for a recession in the US by mid-2023 has strengthened on the back of developments since early last spring.	The 10-year Treasury yield is projected to remain in its recent range in the months to come, and then rally moderately around midyear as the US downturn approaches. The German Bund yield should rise to 2.60% by the second quarter before remaining relatively stable in comparison to Treasury yields.
Goldman Sachs	We expect global growth of just 1.8% in 2023, as US resilience contrasts with a European recession and a bumpy reopening in China.	After a sharp increase in bond yields this year, new and potentially less risky alternatives are emerging in fixed income: US investment grade corporate bonds yield almost 6%, have little refinancing risk and are relatively insulated from an economic downturn. Investors can also lock in attractive real (inflation-adjusted) yields with 10-year and 30-year Treasury inflation protected securities (TIPS) close to 1.5%.
HSBC	We think markets have become too complacent both in regard to the inflation and Fed outlook and the growth outlook. Virtually all of our cyclical leading indicators are still pointing to much more weakness on the growth side in the coming two to three quarters. The point here is that these signals are no longer confined to just one particular area of the economy. The weakness is much more broad-based now, which gives us even higher conviction in our call. We remain decidedly risk-off for the first half of 2023.	For equities, we think price to earnings ratios in developed markets have scope to fall given where bond yields are. But the big risk remains corporate earnings downgrades, which will probably be a driver of weak equity market performance.
JPMorgan	The good news is that central banks will likely be forced to pivot and signal cutting interest rates sometime next year, which should result in a sustained recovery of asset prices and subsequently the economy by the end of 2023. The bad news is that in order for that pivot to happen, we will need to see a combination of more economic weakness, an increase in unemployment, market volatility, decline in levels of risky assets and a fall in inflation.	10-year U.S. Treasury yields are expected to fall to 3.4% by the end of 2023 and real yields are expected to decline. Given this uncertainty about inflation and growth, and the chunky yields available in short-dated government bonds, investors might want to spread their allocation along the fixed income curve, taking more duration than we would have advised for much of the year.
Morgan Stanley	In an environment of slow growth, lower inflation and new monetary policies, expect 2023 to have upside for bonds, defensive stocks and emerging markets.	10-year Treasury yields will end 2023 at 3.5% vs. a 14-year high of 4.22% in October 2022.
UBS	We forecast a historically weak outlook: global growth of just 2.1% year-on-year in 2023 would be the lowest since 1993 excluding the pandemic and GFC. With 13 out of 32 economies expected to contract for at least two quarters by end 2023, our forecast approaches something akin to a "global recession."	Given our expectations of sharper US disinflation and rapid Fed easing in 2023, we expect US 10-year yields will fall 150 basis points to end the year at 2.65%. Ten-year real yields retrace half of this year's rise to end 2023 at 65bps. We expect 10-year Bunds and Gilts to underperform Treasuries as "single mandate" ECB and BOE stay on hold for longer. JGBs do little as the BOJ persists with YCC. Australia and Korea duration are our favored APAC picks.
Wells Fargo	Our base case scenario is for the Federal Reserve to deliver a bit more tightening than what the market is pricing. Meanwhile, we expect the Bank of England and European Central Bank to not hike as much as implied by the market. Inflation falls fairly quickly in the US, and but drops even faster in several other large economies. US core CPI drops below 3% annualized, but with a wide confidence interval around this forecast.	Long term bond yields rise faster in the US than other G10 markets. The 10-year Treasury nominal yield tops 4% soon, and there is a decent chance it hits 4.25% by March. Germany and UK 10-year yields increase only 10 to 20 basis points by mid-year. We expect US Treasury yields to decline in 2023 as we go through an economic recession and in anticipation of policy rate cuts from the Fed. Long-term yields tend to peak before the Fed finishes raising rates. We favor remaining nimble in bond portfolio allocations with a barbell strategy that lengthens maturities but also takes advantage of ultra-short-term yields. An eventual economic recovery in the latter half of the year should begin to support credit-oriented asset classes and sectors.

Source: Bloomberg

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Dow Jones Industrial Average (DJIA): is a price-weighted measure of 30 U.S. blue-chip companies. The index covers all industries except transportation and utilities. The DJIA was designed to serve as a proxy for the health of the broader U.S. economy.

EURO STOXX 50: Index composed of 50 stocks from countries in the Eurozone. EURO STOXX 50 represents Eurozone blue-chip companies considered as leaders in their respective sectors. The index represents the performance of the 50 largest companies among 20 sectors in terms of free-float market cap in Eurozone countries. The index captures about 60% of the free-float market cap of the EURO STOXX Total Market Index (TMI).

MSCI (Morgan Stanley Capital International) Europe (USD): Index captures large and mid-cap representation across 15 Developed Markets countries in Europe: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK. The index covers approximately 85% of the free float-adjusted market capitalization across the European Developed Markets equity universe.

MSCI AC (All Country) Europe: Index that captures large and mid-cap representation across 15 Developed Markets countries and 5 Emerging Markets countries in Europe. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI AC Asia ex Japan: Index that captures large and mid-cap representation across Developed Markets (Hong Kong and Singapore) countries (excluding Japan) and Emerging Markets (China, India, Indonesia, Korea, Malaysia, the Philippines, Taiwan, and Thailand) countries in Asia. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI AC World: Broad global equity index that represents large and mid-cap equity performance across 23 developed and 24 emerging markets. The index covers approximately 85% of the global investable equity opportunity set.

MSCI Emerging Markets (USD): Index designed to track the financial performance of key companies in fast-growing nations. The index tracks mid-cap and large-cap stocks in Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Kuwait, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

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

MSCI Japan (USD): Index designed to measure the performance of the large and mid-cap segments of the Japanese market. The index covers approximately 85% of the free float-adjusted market capitalization in Japan.

MSCI World: Cap-weighted stock market index of companies throughout the world. It is used as a common benchmark for 'world' or 'global' stock funds intended to represent a broad cross-section of global markets. The index covers approximately 85% of the free float-adjusted market capitalization in each country.

NASDAQ (National Association of Securities Dealers Automated Quotations): Index of more than 3,700 stocks listed on the Nasdaq stock exchange, weighted by market capitalization. The technology sector accounts for just over half the index, more than three times the index weight of any other market sector.

Nikkei 225: a price-weighted equity index for the Tokyo Stock Exchange. The Nikkei measures the performance of 225 large, publicly owned companies in Japan from a wide array of industry sectors.

Russell 2000 Growth: index composed of small-capitalization U.S. equities of the Russell 2000 Growth Index that exhibit growth characteristics

Russell 2000 Value: index composed of small-capitalization U.S. equities of the Russell 2000 Growth Index that exhibit value characteristics.

Russell 2000: Small-cap stock market index that makes up the smallest 2,000 stocks in the Russell 3000 Index, a capitalization-weighted stock market index that seeks to be a benchmark of the entire U.S stock market. The Russell 2000 is commonly used as a small-cap proxy.

S&P 500 Growth: is a market-cap-weighted index comprised of growth stocks within the S&P 500 Index based on three factors: sales growth, the ratio of earnings change to price, and momentum.

S&P 500 Index: The S&P 500 is a stock market index tracking the performance of 500 large companies listed on stock exchanges in the United States. It is market-capitalization weighted and is widely regarded as the best single gauge of large-cap U.S. equities. The index includes 500 U.S. leading companies and captures approximately 80% coverage of available market capitalization

S&P 500 Value: is a market-cap-weighted index comprised of value stocks within the S&P 500 Index based on three factors: book/price ratio, earnings/price ratio, and sales/price ratio.

S&P/BMV Indice de Precios y Cotizaciones (Mexico IPC): Index seeks to measure the performance of the largest and most liquid stocks listed on the Bolsa Mexicana de Valores (BMV). The constituents are weighted by modified market cap subject to diversification requirements.

Shanghai Composite: Market capitalization-weighted index that reflects the performance of the whole Shanghai securities market, including all listed A shares and B shares stocks on the Shanghai Stock Exchange (SSE).

Bloomberg Emerging Markets USD Aggregate - High Yield: Index that measures the USD-denominated, high yield, fixed-rate corporate bond market of key companies in fast-growing nations (EM issuers).

Bloomberg Emerging Markets USD Aggregate: Flagship hard currency Emerging Markets debt benchmark that includes fixed and floating-rate US dollar-denominated debt issued from sovereign, quasi-sovereign, and corporate EM issuers.

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

Bloomberg Global High Yield: Multi-currency flagship measure of the global high-yield debt market. The index represents the union of the US High Yield, the Pan-European High Yield, and Emerging Markets (EM) Hard Currency High Yield Indices.

Bloomberg US Aggregate Bond Index: The Bloomberg US Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market in the United States. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate pass-throughs), ABS and CMBS (agency and non-agency)

Bloomberg US High Yield - Corporate: Index that measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below.

Bloomberg US Treasury Bills 1-3 Month Index: The Bloomberg US Treasury Bills 1-3 Month Index is designed to measure the performance of public obligations of the U.S. Treasury that have a remaining maturity of greater than or equal to 1 month and less than 3 months

JPM EMBI Global Diversified: Unmanaged, market-capitalization weighted, total-return index tracking the traded market for U.S.-dollar-denominated Brady bonds, Eurobonds, traded loans, and local market debt instruments issued by sovereign and quasi-sovereign entities.

S&P U.S. TIPS (TIPS): Treasury Inflation-Protected Securities (TIPS) Index seeks to measure the performance of the U.S. TIPS Market. TIPS are treasury bonds that are indexed to an inflationary gauge to protect investors from the decline in the purchasing power of their money.

Credit Suisse Hedge Fund Index – Event Driven: Asset-weighted index composed of hedge funds with an event-driven strategy. Event-driven **i**s a hedge fund investment strategy that seeks to exploit pricing inefficiencies that may occur before or after a corporate event, such as an earnings call, bankruptcy, merger, acquisition, or spinoff.

Credit Suisse Hedge Fund Index – Global Macro: Asset-weighted index composed of hedge funds with global macro strategy. A global macro strategy is a hedge fund strategy that bases its holdings primarily on the overall economic and political views of various countries or their macroeconomic principles. Holdings may include long and short positions in various equity, fixed-income, currency, commodities, and futures markets.

Credit Suisse Hedge Fund Index – Long/Short Equity: Asset-weighted index composed of hedge funds with a long/short strategy. Long/short funds use an investment strategy that seeks to take a long position in underpriced stocks while selling short, overpriced shares. Long/short seeks to augment traditional long-only investing by taking advantage of profit opportunities from securities identified as both under-valued and over-valued.

Credit Suisse Hedge Fund Index – Multi/ Strategy: Asset-weighted index composed of hedge funds with a multi-strategy. Multi-strategy hedge funds are the most diverse portfolios in the hedge fund universe. Multi-strategies combine different single hedge fund strategies in one portfolio and differentiate considerably from each other. Most often, such portfolios include a variety of long-short, relative value, and event-driven strategies.

Credit Suisse Hedge Fund Index: Asset-weighted hedge fund index that includes open and closed funds. Seeks to measure hedge fund performance and provide the most accurate representation of the hedge fund universe.

HFRI Fund of Funds Composite: The Hedge Fund Research Indices Fund of Funds is an index comprised of funds that invest with multiple managers through funds or managed accounts. The strategy designs a diversified portfolio of managers with the objective of significantly lowering the risk (volatility) of investing with an individual manager. The Fund of Funds manager has discretion in choosing which strategies to invest in for the portfolio.

S&P Goldman Sachs Commodity Index: Commodities index that tracks the performance of the global commodities market. It is made up of exchange-traded futures contracts that cover physical commodities spanning five sectors: energy products, industrial metals, agricultural products, livestock products and precious metals.

West Texas Intermediate (**WTI) Crude Oil NYMEX Near Term ($/bbl) (WTI Crude):** Price of light, sweet, landlocked crude oil that serves as one of the main global oil benchmarks. It is sourced primarily from inland Texas and is useful for pricing any oil produce in the United States, primarily from the Permian Basin.

Crude Oil Brent Global Spot ICE ($/bbl) (Brent Crude): Price of waterborne crude oil based on a basket of North Sea crudes. The brent crude oil blend extracted from the North Sea, comprises Brent Blend, Forties Blend, Oseberg, Ekofisk, and Troll crudes, commonly referred to as BFOET.

Gold Spot: The purchase price of a single troy ounce of the metal (gold) for immediate delivery, as opposed to a date in the future.

Silver Spot: The purchase price of a single troy ounce of the metal (silver) for immediate delivery, as opposed to a date in the future.

British pound (GBP) /Dollar (USD): Current exchange rate of the British Pound (GBP) to US Dollar (USD)

Dollar (USD)/ Mexican Pesos (MXN): Current exchange rate of US Dollar (USD) to Mexican Pesos

Dollar (USD)/Japanese Yen (JPY): Current exchange rate of Dollar (USD) to Japanese Yen (JPY)

Dollar (USD)/Swiss Franc (CHF): Current exchange rate Dollar (USD) to Swiss Franc (CHF)

Euro (EUR)/Dollar (USD): Current exchange rate of Euro (EUR) to US Dollar (USD)