Harper Capital Management:

Global Markets- January 2023 Outlook:

In October of last year, we wrote the following:

We expect two more increases in the Federal Funds rate which will take them to 4.75 to 5%. It would be prudent for the Federal Reserve to maintain a restrictive monetary policy for longer (end to rate increases is not followed by immediate rate cuts and the run-off of the Fed balance sheet continues) to ensure that inflation expectations are reduced and then remain well anchored.

The economic effects of tighter monetary policy are seen with a lag.

If the Federal Reserve follows a prudent path of restrictive monetary policy till inflation expectations return to the benign levels pre-Covid, it is likely that we will see earnings expectation weaken in the months ahead. By many measures, the economy remains strong- low unemployment levels, no sign of slowdown in consumer spending and company earnings reports generally stronger than expected. However, as the charts above and the Treasury yield curve inversion suggest, it is likely that we are entering a period of slower economic growth and weaker earnings expectation. Potential counters to this scenario would include:

- *End to the Ukraine-Russia war*
- *End or mitigation of China's zero Covid policy*
- *Premature Fed pivot*

A premature Fed pivot could result in a rally in risk assets in the short-term but would be a long-term negative with the likelihood that inflation expectations remain elevated for longer. There is also the risk that investor behavior in the form of bidding up prices of negative cash flow companies, meme-stocks popular on social media, shiny objects like cryptos and NFTs, will return and create new asset bubbles. Data from recent years suggest asset bubbles can alter consumer behavior in ways that can create cost of living pressures. This could be as direct as home or rental prices, or indirect through the incentives to seek employment. Our outlook remains unchanged from three months ago- we remain cautious, but more constructive in terms of valuation than at the start of the year. We do not think last week's strong rebound is the start of a new bull market though seasonality could drive the equity markets higher through year-end. We would suggest that long-term investors use drawdowns like the ones in June and September to add to risk assets rather than chase short-term rallies. Disciplined investing is the best way to compound returns in the long-term.

Equity and bond markets have been in a trading range over the last three months. The US Equity market has not re-tested the October 2022 low and is now at the higher end of the aforementioned trading range. Risk markets have been driven by the Federal Reserve, inflation data and to a lesser extent by China's zero Covid policy and its more recent opening up. European and Asian equity markets aided by a weaker US dollar have performed much better in recent months.

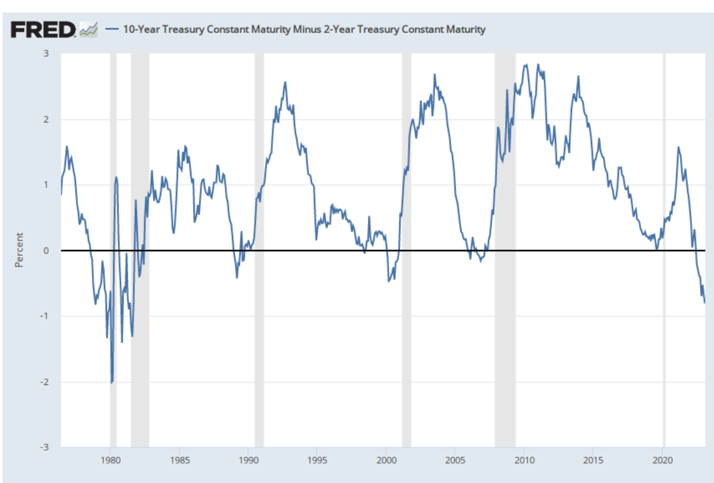
For the calendar year 2022, MSCI ACWI Index was –18.36%, EAFE Index -14.45% and the MSCI EM Index -20.09%. Among developed markets, UK was -4.89% and Europe which was down about 30% at the time of our last letter, finished the year strong and at year-end was -15.06%. Japan at -16.65% and the United States at -19.85% were laggards for the year. Among emerging markets, Taiwan (-29.76%). Korea (-29.36%) and China (-21.93%) underperformed, and India (-7.95%) and Brazil (+14.15%) outperformed. Bonds had a bad year with the longer duration ETF TLT -30.52%, and the aggregate bond ETF AGG -12.70%.

Equity markets have started the year strong with MSCI US +6.55%, EAFE +8.1% and MSCI EM +7.9%, through the end of January 2023.

US 10-year Treasuries yielded 3.81% when we wrote our October commentary and yields are broadly unchanged at 3.74%[1].

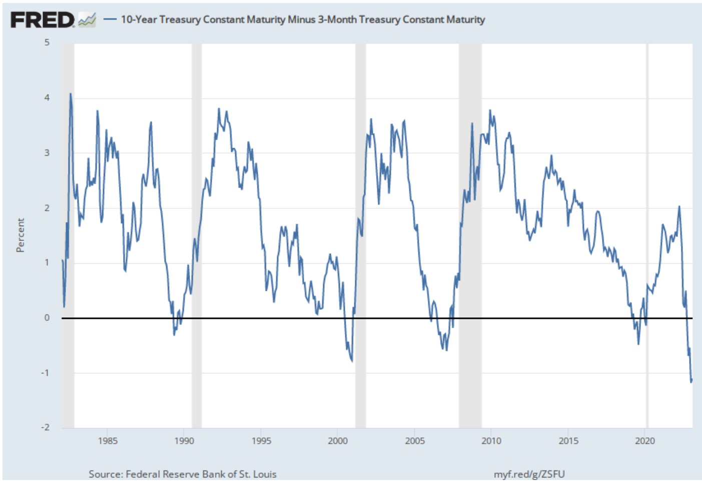
The 10-year-2-year spread, and the 10-year-3-month yield spread have been inverted to the greatest extent since the 1980s- both in terms of quantum of inversion and the duration of inversion.

10-year- 2-year yield spread:

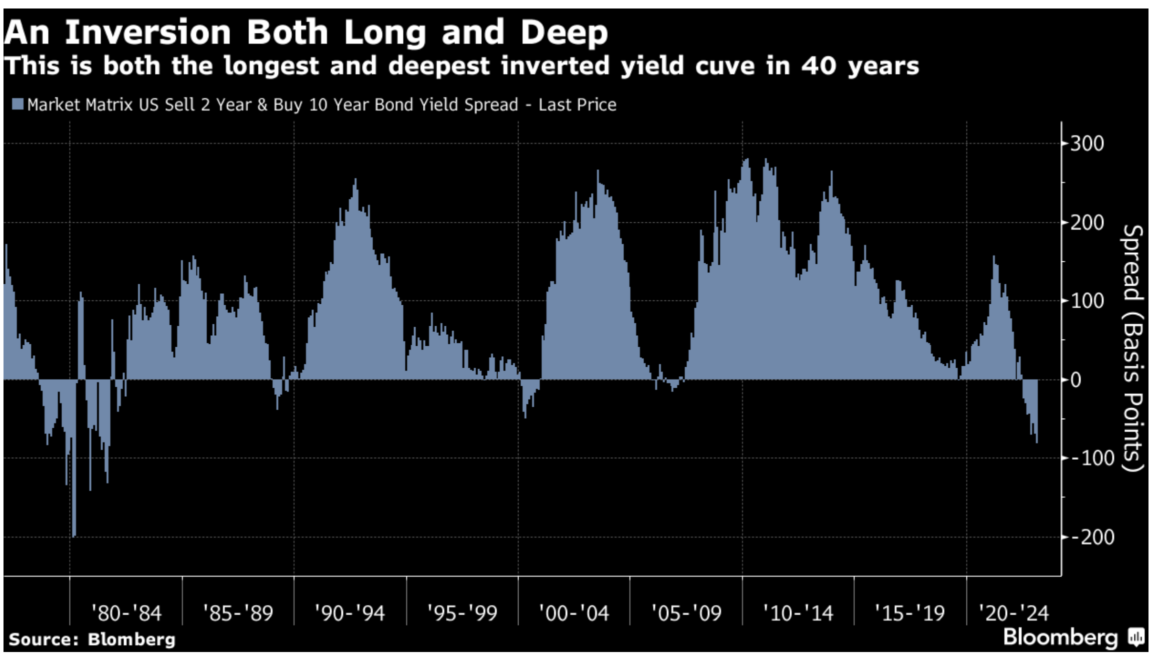


[1]https://www.cnbc.com/quotes/US10Y

10-year- 3-month yield spread:



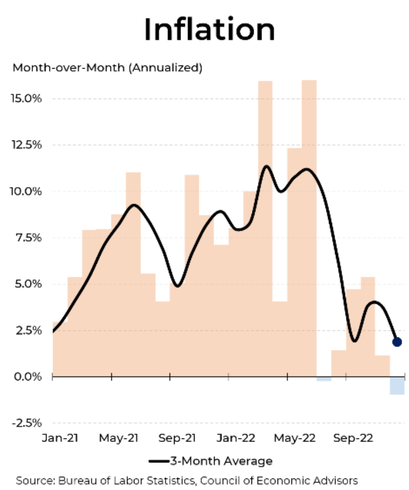
Extended Inversion:

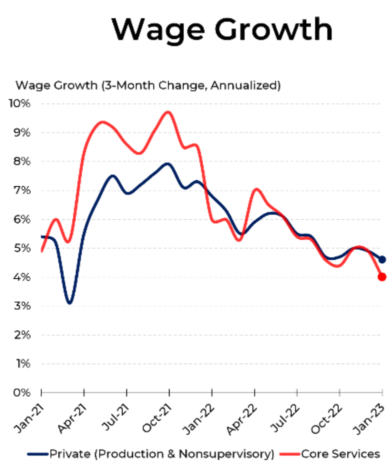


The overall economic picture is unclear with employment, wage growth and Services suggesting a robust economy, whereas manufacturing, housing, and certain consumer lending areas indicative of a weakening economy. Mortgage demand and home purchases have seen a rebound since the start of 2023, but higher rates will remain a headwind.

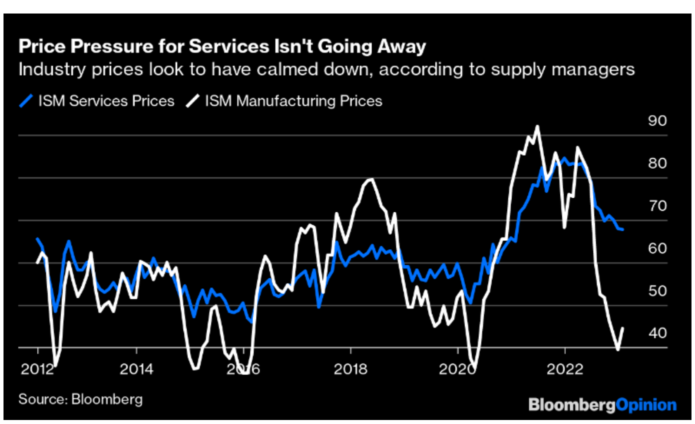
Non-Farm Payroll remains strong:

Wage Inflation declining, but still elevated:

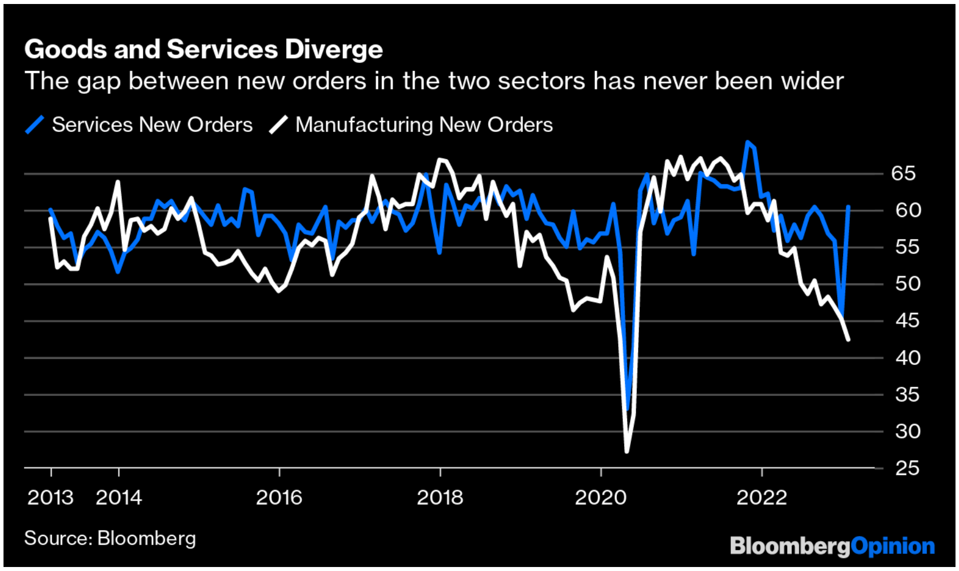




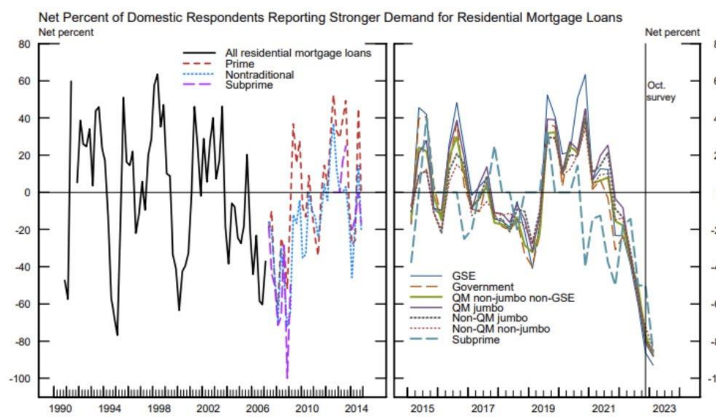
Prices- Manufacturing Vs Services:



New Orders- Manufacturing Vs Services:



Demand for mortgages weaker:



Note: QM is qualified mortgage; GSE is government-sponsored enterprise. For data starting in 2007:Q2, changes in standards and demand for prime, nontraditional, and subprime mortgage loans are reported separately. For data starting in 2015:Q1, changes in standards and demand were expanded into the following 7 categories: GSE-eligible, government, QM non-jumbo non-GSE-eligible, QM jumbo, non-QM jumbo, non-QM non-jumbo, and subprime. Series are set to zero when the number of respondents is 3 or fewer.

Source: Federal Reserve Board, Senior Loan Officer Opinion Survey on Bank Lending Practices.

Average loan rates in January for new cars was 8.41% and used cars 12.88%, significantly higher than recent decades. In December 2022, the number of auto loans at least 60 days behind in payments rose to 5.67% from 2.58% in April 2021[2]. This is higher than the 5.04% recorded in January 2009 during the Great Recession. Used car pricing was weak the latter half of 2022 but appears to have improved in 2023- another indicator of the mixed economic signals we are currently seeing.

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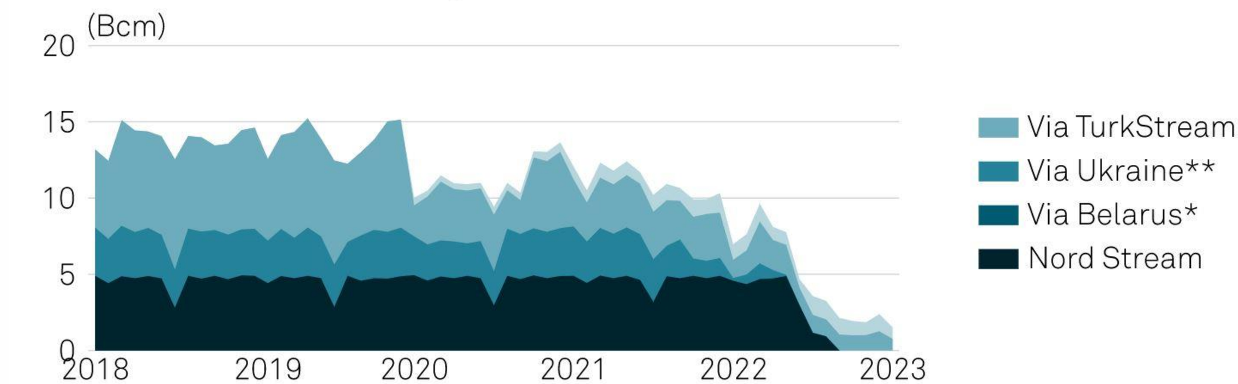
[2]Fitch data

Europe:

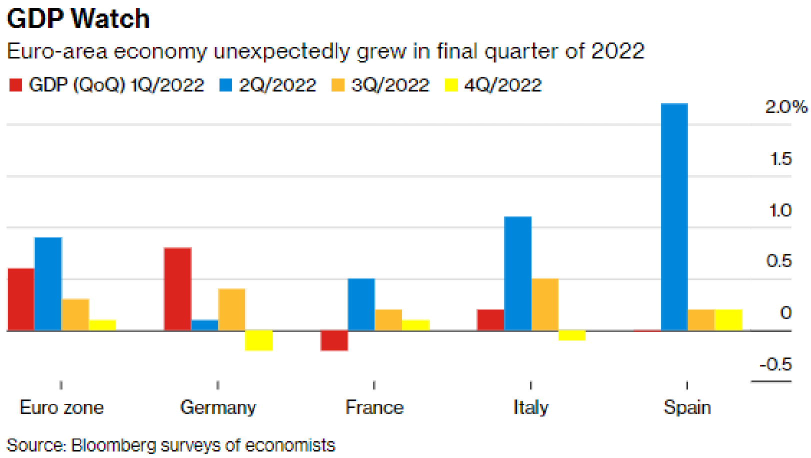
The biggest surprise since our last Investment Letter three months ago, is the strong rebound in the Euro and European equity markets. The currency has been driven by the notion that incrementally the European Central Bank is likely to raise rates more than the Federal Reserve. The equity markets (adjusted for currency) have responded to the economic rebound and the view that Europe can wean itself away from Russian Oil and Gas over time. By the end of 2022 it appears the Euro bloc reduced consumption of Russian Gas supplied through pipelines by 80%. While a warmer winter has helped, imported LNG, better coordination among the bloc countries and energy savings have been the primary driver of the reduction in Russian Gas dependence.

Russian piped gas flows to Europe drop to new low in January



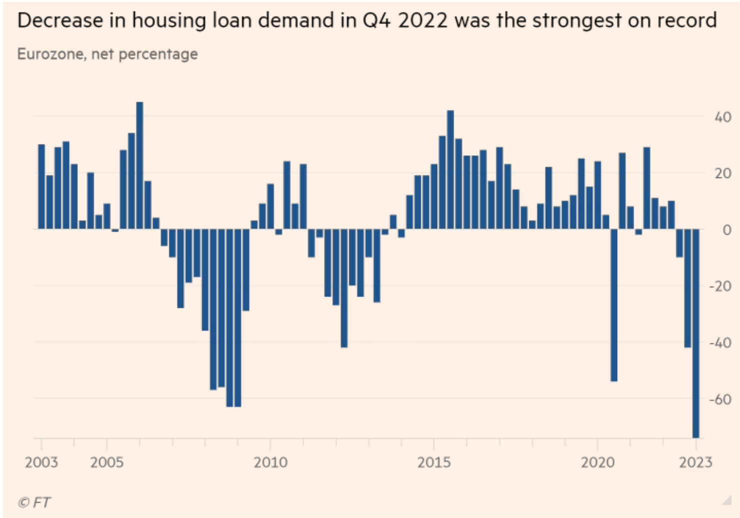
* comprises net entry at Kondratki, Tietierowka, Wyskoje
** comprises net entry flows at Hermanowice, Velke Kapusany, Bereg, Isaccea
Note: converted to standard European measurement of 40 MJ/scm
Source: S&P Global Commodity Insights

Economic growth in the Eurozone rebounded from early 2023 but has weakened in recent months. GDP growth of +0.1% for Q4 2022 was marginally better than the slight contraction (-0.1%) expected.

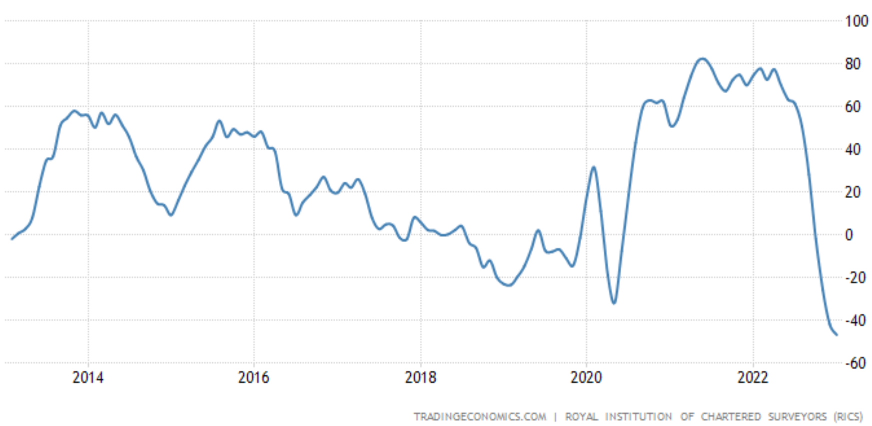


Inflation remains high, but just like in the United States it is declining.

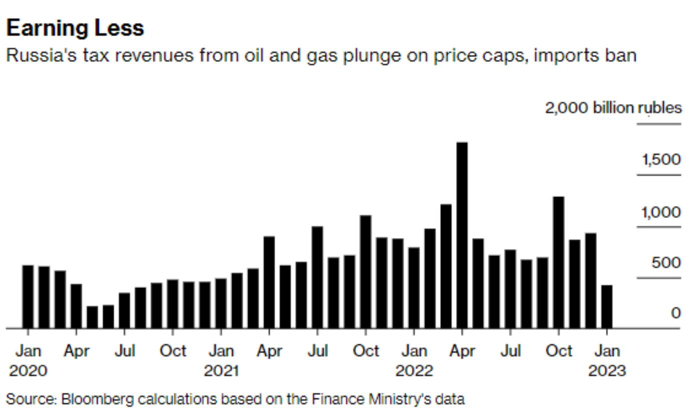
The ECB's main refinancing rate is at 3.0% and is expected to rise further, the Bank of England's target rate is at 4.0%. The higher rates have impacted the housing sector. The economic impact will be stronger in the UK where the housing sector is a more important factor. The Royal Institute of Chartered Surveyors index of price balance (difference between surveyors forecasting price increases Vs decreases) was at -47 in January 2023, the lowest level since 2009.



UK Home Price Survey:

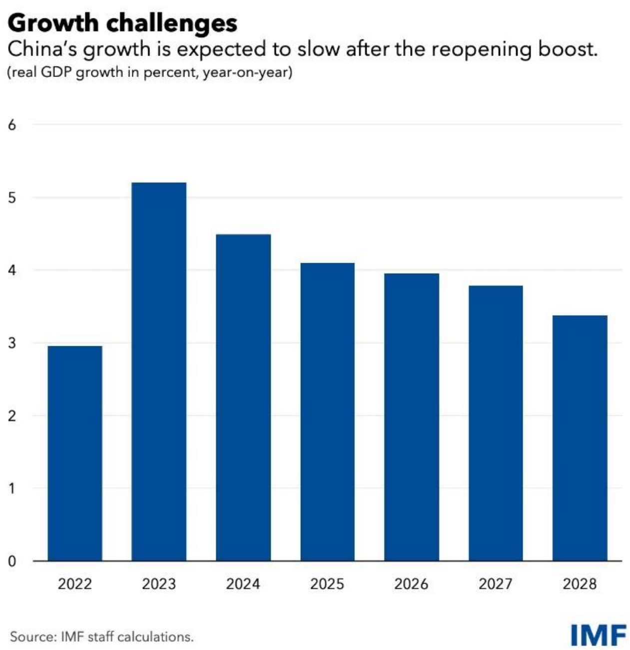


The Ukraine-Russia war continues to grind on. Russia appears to be mobilizing more resources for a spring offensive to regain territory in Eastern Ukraine that it has lost since the start of the war. Both countries have suffered extensively- the loss of lives and property in Ukraine and the economic damage to Russia.



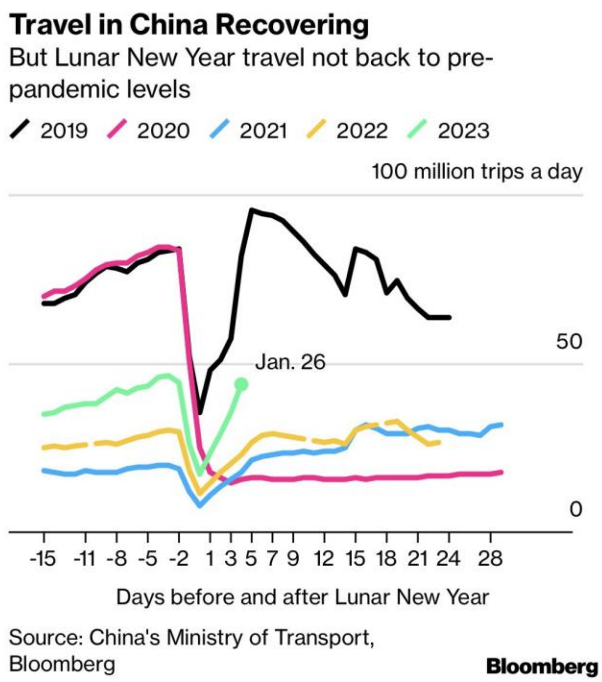
Indo-Pacific:

Total social financing (debt) in China rose about 23% annualized to RMB 352 Trillion[3] ($51.72 Trillion) in January 2023. Since January 2020, debt has increased at a multiple of nominal GDP growth. While the IMF's recent report on China[4] upgraded 2023 GDP growth from 4.4% to 5.2% (based on the end to its zero Covid policy), it raised concerns (as have we) to the medium and long-term outlook. They project that potential growth over the next five years could average 4%/year and over the following ten years 3%/year. The major headwinds are ones we have written in prior letters- ageing workforce, shrinking population, slowing productivity and the failure to re-balance the economy from debt-driven investments to greater consumption. Additional issues include restructuring of the debt-laden real estate sector[5] (average bond prices at distressed levels of 40% of face value) and the government lifting the heavy burdens (political and administrative) on the private sector.

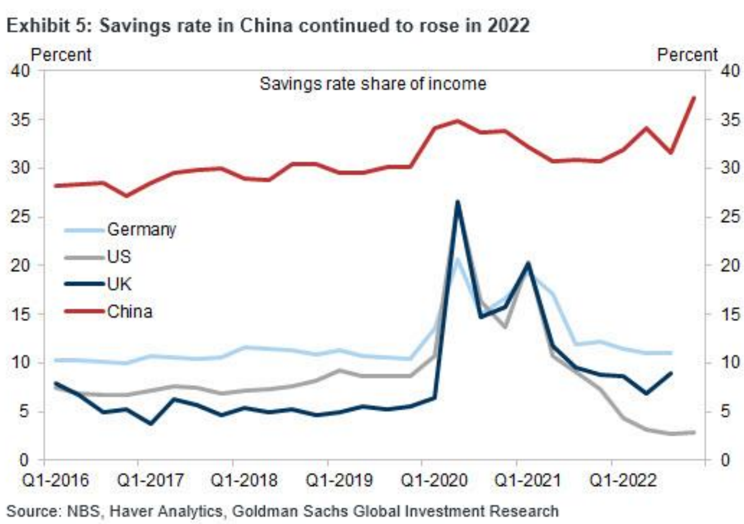


[3]https://twitter.com/michaelxpettis/status/1624060735717531648
[4]https://www.imf.org/en/News/Articles/2023/02/01/sp-china-aiv-press-briefing-opening-remarks#:~:text=The%20newly%20released%20January%202023,than%2Danticipated%20reopening%20in%20China.
[5]https://www.imf.org/en/News/Articles/2023/02/01/sp-china-aiv-press-briefing-opening-remarks#:~:text=The%20newly%20released%20January%202023,than%2Danticipated%20reopening%20in%20China.

Travel boosted by end of Covid restrictions:



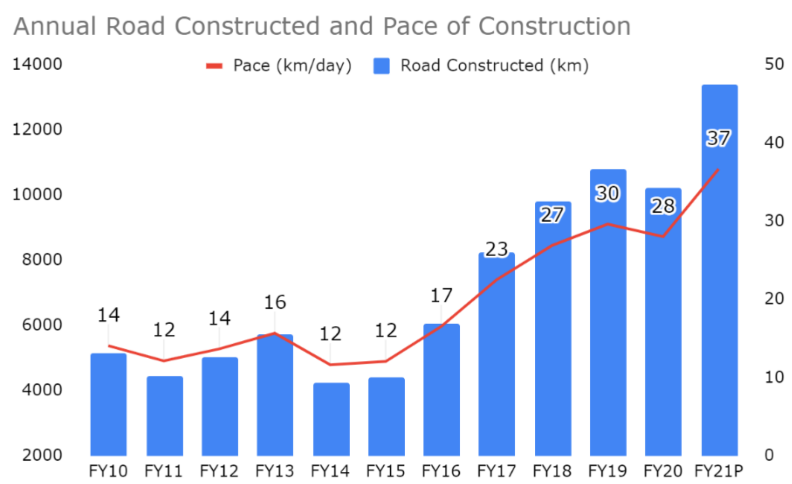
Greater consumption to rebalance economy is yet to happen:



India is expected to be the fastest growing major economy for a third year in a row- IMF projects GDP growth of 6.1% for 2023. We have discussed the success of the current Indian government to both widen and deepen the structural economic reforms where it has contributed to faster economic growth and created a bigger social safety net for the indigent. These measures have brought wider acceptance of the reform measures. Some of the specific policies include:

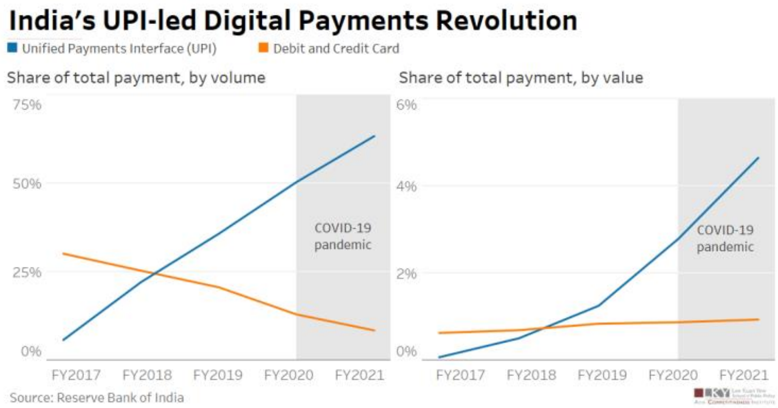
- Stability in fiscal metrics and inflation: despite increases in budget support to vulnerable groups, fiscal deficits have been kept under control. This has also allowed inflation to be lower than historic norms. Reduced corruption from direct transfer of benefits to bank accounts has helped widen benefits while keeping spending under control.
- Improvement in infrastructure: a key hurdle India has faced in rapid industrialization has been the poor infrastructure. The recent Indian budget increased infrastructure investments by the government by over 30%. Construction of roads, ports, extending freight rail infrastructure and building new airports have all accelerated over the last seven years.
- India's rapidly growing digital payments network has reduced transaction friction and corruption significantly. India's unique, real-time, mobile-enabled Unified Payments Interface (UPI) has grown at 160%/year over the last five years[6]. The UPI system introduced in 2016 addressed the patchwork of rules and paperwork that made payments cumbersome. The UPI uses the digital infrastructure of the non-profit National Payments Corporation of India (NPCI) and is expected to serve 100 million merchants and 750 million consumers in a year.

Rapid road construction in India:



[6] https://www.imf.org/en/News/Articles/2022/10/26/cf-how-indias-central-bank-helped-spur-a-digital-payments-boom

UPI payments:



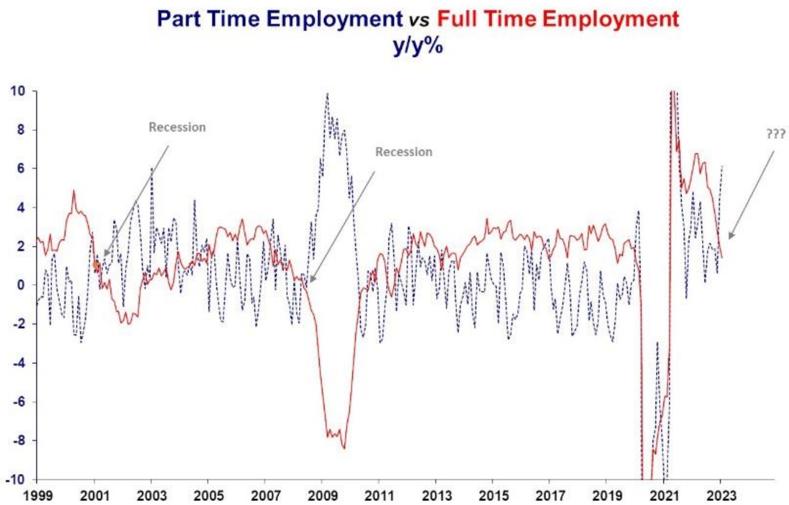
A note on the Adani Group of companies and impact on India- the Hindenburg Research report highlighted facts which were well-known to many investors in India- valuations which had risen quite rapidly do not support business fundamentals, related party transactions (not uncommon in emerging markets including India, but fundamental, governance focused investors steer clear of such companies), share manipulation possibility given the thin float. However, the Group is a high-quality operator of infrastructure and its businesses in general generate cash flow that will, barring extenuating circumstances be able to service debt. We do not see any long-lasting impact on the Indian economy or its markets.

Outlook:

Strategic relationships between the American-led rules-based order and the autocratic challengers (China and Russia) continue to be strained. Putin-led Russia has realized that naked aggression fueled by imaginary narratives can fail quite spectacularly, especially when your economy produces little of value to the rest of the world, barring commodities. Countries like Norway and in recent years the Gulf economies (UAE, Qatar, and Saudi Arabia) have tried to diversify their economies to reduce dependence on oil and gas. Putin's Russia has failed in this endeavor, with the energy resource wealth squandered through corruption and incompetence. The China balloon incident (potentially multiple incidents) is a reminder that the Chinese Communist Party (CCP) led by Xi Jinping can be a much bigger challenge in the years to come. We think that the risk of conflict across the Taiwan Straits remains a non-trivial possibility, and the best way to prevent this is an alliance like the QUAD that seeks to deter aggression.

As we said earlier in this Letter, the current economic data is mixed- inflation remains high, but is declining; goods inflation has declined, but services inflation remains sticky; job losses have mostly been in the technology industry; earnings expectations have been revised down; CEO confidence surveys suggest caution; economic surprise indices are turning positive again; overall employment remains strong, but part-time jobs appear to be driving this; monetary tightening in the United States and Europe is countered by greater liquidity in China and Japan.

Surge in part-time employment often precedes recessions:

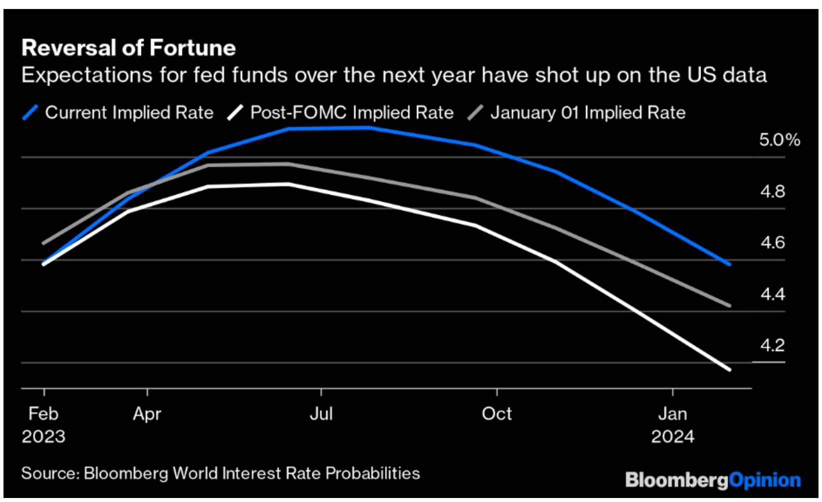


Weaker CEO confidence:

Citi Economic Surprise Index has improved:

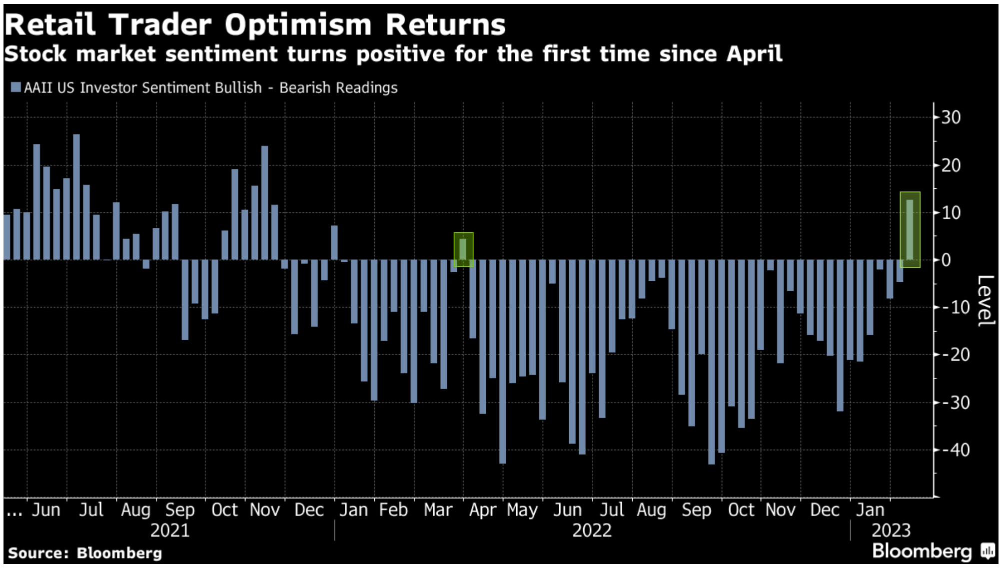
The unclear economic picture creates the likelihood that the Federal Reserve will have to keep rates higher for longer. The bond markets are suggestive of this with rates moving higher since the last Fed meeting.

Higher terminal rates?



Investor behavior on market rallies during the downturn suggest that speculative behavior remains. According to Bloomberg, during the strong rally in late January retail trading was about 23% of market volume, higher than the previous high of 22% during the meme-stock and SPAC driven trading of 2021. The gamification of retail trading has also resulted in large-scale option (mostly naked) trading. Option trading in just one stock, Tesla has generated over $700 billion in premium income.

Retail Trader Optimism could be contra-indicator:



On balance, we do not think the current market rally is the start of a new upturn. We think interest rates can remain high for longer than the more optimistic projections. The longer rates stay high and the greater the duration of the inverted yield curve, the more likely it is that we end the cycle with an economic downturn. A premature Fed pivot can result in a rally in risk assets but creates longer-term risks to economic stability. As we said in October, we would suggest that long-term investors use drawdowns like the ones in June and September to add to risk assets rather than chase short-term rallies.

Updates on Portfolios (detailed performances since inception can be seen in Appendix I):

2022 YTD PERFORMANCE (12/31/2022)	Portfolio	Benchmark	Morningstar Category Median
INTERNATIONAL VALUE	(4.42%)	(5.58%)	(9.12%)
GLOBAL	(16.46%)	(18.36%)	(16.71%)
EMERGING MARKETS	(7.73%)	(20.09%)	(20.84%)

Portfolio changes (9/30/2022 through 12/31/2022):

International Value: We initiated a new position in semiconductor company, NXP Semiconductors NV during the October sell-off. The company sells mixed signal (analog-digital) chips that are used in automotive, industrial, internet of things (iOT), mobile and communication infrastructure applications. The firm traded at a P/E of 9x, FCF yield of 7% and dividend yield of 2.5% when we initiated the position. We view the company as a cyclical-growth company and the purchase price reflects a deep discount to intrinsic value.

Global Equity: We exited a small position in Twitter on Elon Musk's buyout of the social media company. We initiated new positions in L'Oréal and Danaher, and added to existing positions in Boeing and Amazon. French firm L'Oréal is the global leader in beauty products- a segment of consumer spending where we see long-term secular growth and interest in premium products. The firm had EBIT margins of about 19%, ROIC of 29% and traded at a P/E of 25x and at a 25% discount to our estimate of intrinsic value. Danaher is a "science conglomerate" which operates in Life Sciences, Diagnostics and Environmental Solutions areas. The firm targets mid-single digit long-term growth, recurring revenue of over 50%, EBITDA margins of 25% and strong cash flow. Danaher is a good operator of acquisitions and has delivered strong cash flow growth historically. The stock trades at a 27% discount to our estimate of intrinsic value.

Emerging Markets: We initiated a new position in MercadoLibre- the company is the leading e-commerce and payments platform in Latin America and was down about 60% from its 2021 high. We have generally avoided internet/media companies based on valuation and corporate governance issues. We have met with management of MercadoLibre several times over the last decade and have been impressed with how the firm is run. With interest rates in Brazil close to a peak, we think the firm's credit exposure will get better over time. The core e-commerce and payments platforms can generate improving cash flow over the next five years.

Additional Thoughts:

We view all of our portfolio holdings as leading businesses with durable competitive advantages and management focused on shareholder returns in the long-term. The key metric for us is the long-term business performance and not gratification from short-term price moves. The low portfolio turnover means that in most years there is very little change in portfolio composition. Most of the work on these portfolios relates to reading with the goal of understanding the value propositions in a business with the goal that a handful of the companies reviewed and potentially analyzed may be part of a portfolio at some point in time. Our strategies have added significant value relative to the respective benchmarks and peer groups over time. We do not manage with the goal of short-term performance, but believe that a robust and disciplined process can compound investor returns at superior rates.

APPENDIX I

INTERNATIONAL VALUE	**Portfolio**	**MSCI EAFE Val**	**Morningstar FV**	**Comment**
2016	(3.20%)	6.90%	n/a	***Start date 8/1/2016***
2017	24.27%	21.43%	22.08%	
2018	(14.28%)	(14.78%)	(15.50%)	
2019	22.84%	16.09%	17.83%	
2020	7.62%	(2.63%)	0.93%	
2021	14.45%	10.89%	11.40%	
2022	(4.42%)	(5.58%)	(9.12%)	***YTD 12/31/2022***
ITD	49.04%	30.91%	n/a	***Cumulative (8/1/2016 to 12/31/2022)***
ITD	6.42%	4.29%	n/a	***Annualized (8/1/2016 to 12/31/2022)***
1-year	(4.42%)	(5.58%)	(9.12%)	***Annualized***
3-year	5.59%	0.65%	0.89%	***Annualized***
5-year	4.39%	0.17%	0.64%	***Annualized***
5- year Analytics (as of 12/31/2022)				
Annualized Alpha	4.10			
Information Ratio	0.54			
Upside Capture	83.84%			
Downside Capture	75.68%			
Portfolio Turnover	9.75%			***Annualized***

GLOBAL	**Portfolio**	**MSCI ACWI**	**Morningstar W**	**Comment**
2020	31.80%	23.10%	n/a	***Start date 7/1/2020***
2021	24.03%	18.54%	18.04%	
2022	(16.46%)	(18.36%)	(16.71%)	***YTD 12/31/2022***
ITD	36.56%	19.13%	n/a	***Cumulative (7/1/2020 to 12/31/2022)***
ITD	13.27%	7.25%	n/a	***Annualized (7/1/2020 to 12/31/2022)***
1-year	(16.46%)	(18.36%)	(16.71%)	***Annualized***
ITD Analytics (as of 12/31/2022)				
Annualized Alpha	5.70			
Information Ratio	0.84			
Upside Capture	108.22%			
Downside Capture	88.50%			
Portfolio Turnover	20.00%			***Annualized***

EMERGING MARKETS	**Portfolio**	**MSCI EM**	**Morningstar EN**	**Comment**
2016	2.71%	8.67%	5.42%	***Start date 6/1/2016***
2017	41.92%	37.06%	34.17%	
2018	(11.93%)	(14.58%)	(16.07%)	
2019	19.63%	18.42%	19.26%	
2020	6.70%	18.31%	17.91%	
2021	4.94%	(2.54%)	0.08%	
2022	(7.73%)	(20.09%)	(20.84%)	***YTD 12/31/2022***
ITD	58.80%	39.03%	32.25%	***Cumulative (6/1/2016 to 12/31/2022)***
ITD	7.28%	5.13%	4.34%	***Annualized (6/1/2016 to 12/31/2022)***
1-year	(7.73%)	(20.09%)	(20.84%)	***Annualized***
3-year	1.08%	(2.69%)	(2.25%)	***Annualized***
5-year	1.70%	(1.40%)	(1.33%)	***Annualized***
5- year Analytics (as of 12/31/2022)				
Annualized Alpha	3.48			
Information Ratio	0.30			
Upside Capture	95.87%			
Downside Capture	87.71%			
Portfolio Turnover	16.05%			***Annualized***