

MONITOR

Current market commentary

The fourth quarter brought a more conciliatory end to one of the worst years in history for multi-asset investors, with the most aggressive monetary tightening in more than 40 years hitting equity, bond and real estate valuations alike. Commodities offered the only bright spot, not least because of Putin's war and the simmering energy crisis. However, the starting point for 2023 is now better than last year with cheaper valuations, higher interest rates, still widespread pessimism, low risk positions of many investors and high cash balances. Risks are nevertheless high and renewed setbacks are likely in the first half of the year, also due to the ongoing withdrawal of liquidity by central banks. The global economy is likely to weaken further before picking up again. Volatility is likely to remain elevated in 2023. We see opportunities particularly in commodities, corporate and emerging market bonds as well as equities from Europe and individual emerging markets.

Short-term outlook

After a year dominated by inflation and fears of recession, investors are likely to focus more on corporate earnings in 2023. It will therefore be exciting from mid-January onwards, as the Q4 reporting season will then pick up considerably with the figures of the major US banks. In addition, the Economic Forum in Davos will take place from 16 to 20 January and the Year of the Rabbit begins in China on 22 January.

German inflation (Dec.) and retail sales (Nov.) will be released on Tuesday. Chinese and eurozone services purchasing managers' indices (PMI, Dec.) and ISM manufacturing purchasing managers' index for the US (Dec.) and inflation data (Dec.) for France will follow on Wednesday. On Friday, German and US Factory Orders (Nov.), Eurozone economic confidence (Dec.), ISM services PMI (Dec.) and US labour market data (Dec.) will be released.

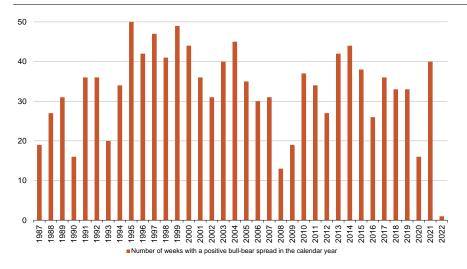
The bi-weekly *Monitor* gives you a structured overview of the current capital market environment and highlights important developments:

- Performance
- Positioning
- Sentiment
- Surprise Indicators
- Economics
- Foreign Exchange
- Equities
- Sovereign Bonds & Central Banks
- Corporate Bonds
- Commodities

Q4 reporting season in investors' focus.

An eventful week ahead for the economy.

Pessimism dominated the markets like never before in 2022



• The bull-bear spread was only one week positive in 2022. Such a low number was the first time in history. Pessimism dominated throughout the calendar year – even during the 2008 financial market crisis there was more optimism among US private investors. However, there has long been talk of an impending recession and a collapse in profits – so surprises should be limited. If equity markets continue to fall, a "grinding lower" is probably more likely than strong, rapid sell-offs as in the Corona crisis.

Source: AAII, Bloomberg. Time period: 23/07/1987 - 29/12/2022.



Multi Asset

	4	-week & YTD	12-mo	nth perio	ds over th	nat last 5	years
	■ 4W (02/12/22 - ■ YTD (31/12/21	- 30/12/22)	30/12/21 30/12/22	30/12/20 30/12/21	30/12/19 30/12/20	30/12/18 30/12/19	29/12/17 30/12/18
Euro overnight deposit	0.0	0.1	0.0	-0.6	-0.5	-0.4	-0.4
Gold	-0.2	5.9	6.3	4.0	13.9	21.0	3.1
Brent	-1.0	50.7	46.5	84.5	-38.4	41.3	-11.6
USDEUR	-1.6	6.2	5.8	8.6	-9.0	2.2	4.9
EUR Coporates	-2.4 -14.2		-14.2	-1.1	2.7	6.3	-1.3
EUR Sovereign Debt	-3.0 -11.8		-11.8	-1.6	2.1	3.1	0.4
Industrial Metals	-3.1	3.8	3.7	39.4	5.7	10.0	-14.9
MSCI Emerging Markets	-3.3 - -15.1		-14.9	5.2	7.4	21.7	-10.5
Global Convertibles	-5.1 -		-16.4	11.0	40.3	25.1	2.6
MSCI Frontier Markets	-5.2 -		-21.6	29.7	-7.6	20.6	-12.6
REITs	-23.3		-23.7	45.5	-15.9	24.6	-3.0
MSCI World	-6.3 -13.0		-13.7	32.7	5.8	30.9	-4.7

MSCI World: MSCI World Net Return; MSCI Emerging Markets: MSCI EM Net Return; MSCI Frontier Markets: MSCI Frontier Markets: MSCI Frontier Markets Net Return REITs: MSCI World REITs Index: EUR Sovereign Debt: IBOXX Eurozone Sovereign 1-10Y TR: EUR Corporates: IBOXX Euro Corporates Overall TR: Global Convertibles: SPDR Convertible Securities ETF; Gold: Gold US Dollar Spot; Brent Crude: Bloomberg Brent Crude Subindex TR; Industrial Metals: Bloomberg Industrial Metals Subindex TR; Euro overnight deposit: ICE BofA Euro Overnight Deposit Rate Index; USDEUR: Price of 1 USD in EUR.

- The last trading session of the year mirrored much of the past months, with bond yields rising and major technology stocks plunging for much of the day. After three years of unstoppable gains even during the pandemic - markets came back down to earth in 2022.
- Looking ahead to 2023, concerns about economic slowdown and Fed policy are likely to continue to weigh on sentiment. 2023 should be better, not easier.

Total return for selected asset classes, in euros and in percent, sorted by 4-week performance. Source: Bloomberg, Time period: 29/12/2017 - 30/12/2022

Equities

	4-week & YTD	12-month periods over that last 5 years						
	■4W (02/12/22 - 30/12/22) ■YTD (31/12/21 - 30/12/22)	30/12/21 30/12/22	30/12/20 30/12/21	30/12/19 30/12/20	30/12/18 30/12/19	29/12/17 30/12/18		
MSCI EM Eastern Europe	-81.1	-81.2	28.1	-19.9	37.9	0.2		
Stoxx Europe Defensives	-2.8 0.0	-0.5	22.1	-6.3	22.6	-1.0		
MSCI Japan	-3.0 - -11.2	-11.5	10.4	4.6	22.5	-9.1		
MSCI EM Asia	-3.1 -	-15.8	2.5	16.3	22.6	-11.5		
Stoxx Europe Small 200	-3.8 -	-24.2	23.0	4.9	29.9	-13.4		
Stoxx Europe 50	-4.0 = -1.8	-2.0	25.8	-6.0	27.6	-10.4		
DAX	-4.2 -12.3	-12.3	15.8	3.5	25.5	-18.3		
Stoxx Europe Cyclicals	-4.4 -	-14.5	26.5	0.0	27.9	-17.0		
MSCI UK	-4.5	1.1	27.2	-17.3	23.4	-10.1		
Euro Stoxx 50	-4.6 -9.5	-9.7	22.9	-2.8	29.0	-12.5		
S&P 500	-7.2 -13.0	-13.7	41.1	7.6	34.9	-0.4		
MSCI USA Small Caps	-7.9 -12.4	-12.9	29.3	8.4	30.2	-6.7		

I S&P 500: S&P 500 TR (US-Equity); Stoxx Europe 50: Stoxx Europe 50 TR; Euro Stoxx 50: Euro Stoxx 50 TR; MSCI Japan: MSCI Japan TR; Stoxx Europe Small 200: Stoxx Europe Small 200 TR; MSCI USA Small Caps: MSCI USA Small Caps TR; Stoxx Europe Cyclicals: Stoxx Europe Cyclicals TR; Stoxx Europe Defensives: Stoxx Europe Defensives: Stoxx Europe Defensives: TR; DAX: DAX TR; MSCI United Kindom: MSCI UK TR; MSCI EM Asia: MSCI EM Asia TR; MSCI EM Eastern Europe: MSCI EM Eastern Europe TR

- The rollercoaster year of 2022 saw a war between Russia and Ukraine, a surge in inflation and the Federal Reserve's first interest rate hike since 2018. Global equity markets did not go unpunished, posting their worst annual performance since the 2008 financial crisis. The S&P 500 fell by almost 20% in USD terms in 2022, while the tech-heavy Nasdaq Composite lost as much as a third of its value over the year.
- Eastern European stocks, however, remained the clear losers as a result of the war.

Total return (including reinvested dividends) for selected stock indices, in euros and in percent, sorted by 4-week performance.

Source: Bloomberg, Time period: 29/12/2017 - 30/12/2022

Fixed Income

	4-week & YTD	12-m	12-month periods over that last 5 years					
	■ 4W (02/12/22 - 30/12/22) ■ YTD (31/12/21 - 30/12/22)	30/12/21 30/12/22		30/12/19 30/12/20	30/12/18 30/12/19	29/12/17 30/12/18		
Chinese Gov Bond	0.5	3.3	5.8	2.7	5.2	7.7		
EM Local Currency Bonds	-0.9 -	-6.1	-1.2	-6.2	15.7	-1.7		
EUR High Yield	-1.1 ■ -11.5	-11.5	3.4	2.8	11.3	-3.6		
USD High Yield	-1.5 -	-11.2	5.4	6.1	14.6	-2.4		
USD Corporates	-1.8	-15.3	-1.0	9.5	14.6	-2.5		
EUR Financials	-1.9 -	-13.3	-0.7	2.4	6.1	-1.5		
EUR Non-Financials	-2.8 	-14.8	-1.3	3.0	6.4	-1.1		
EM Hard Currency Bonds	-3.0	-12.6	6.6	-4.2	17.3	0.6		
Treasuries	-3.5 -6.7	-6.9	6.0	-1.8	9.5	5.7		
Bunds	-17.9	-17.9	-2.6	3.0	3.0	2.4		
BTPs	-17.1	-17.1	-3.0	8.0	10.6	-1.3		
Gilts	-7.0	-28.8	2.2	3.1	12.3	-0.6		

Bunds: IBOXX Euro Germany Sov TR; BTPs: IBOXX Euro Italy Sov TR; Treasuries: ICE BofA US Treasury TR;
Gilts: IBOXX Sterling Gilts Overall TR; Chinese Gov Bonds: ICE BofA China Govt; EUR Financials: IBOXX Euro Fin. Overall TR;
EUR Non-Financials: IBOXX Euro Non-Fin. Overall TR; EUR High Yield: ICE BofA EUR Liquid HY TR; USD Corporates: ICE BofA USD Corp TR; USD High Yield: ICE BofA USD Liquid HY TR; EM Hard Currency; JPM EMBI Glo Div Unh. EUR TR; EM Local Currency; JPM GBI-EM Glo Div Comp Unh. EUR TR

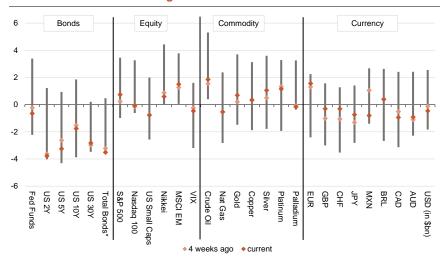
- · After the temporary decline in government bond yields, they have risen noticeably again in recent weeks due to hawkish central banks.
- With economic data suggesting that rising interest rates are not yet really cooling the economy, concerns have risen that the Fed could tighten policy too much and plunge the economy into recession. Especially in the Eurozone, the market expects significantly more rate hikes than 4 weeks ago.

Total return (including reinvested coupons) for selected bond indices, in euros and in per cent, sorted by 4-week perfor-

Source: Bloomberg, Time period: 29/12/2017 - 30/12/2022



Non-Commercial Positioning

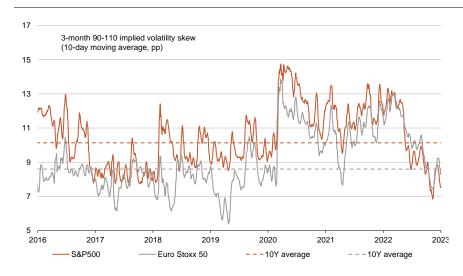


- Hedge funds have extended shorts on fed funds, 5Y Treasuries and the Mexican peso over the past four weeks.
- On the long side, however, the positions on the S&P 500, gold and silver were increased.

The Commodity Futures Trading Commission (CFTC) publishes the Commitments of Traders report every Friday. The chart shows the historical, normalised distribution in standard deviations and focuses on the net futures position (long positions minus short positions) of "non-commercial traders" (bonds, currencies), "asset managers/institutional" & "leveraged funds" (equities) and "managed money" (commodities) and shows how speculative investors are positioned. "Weighted with the respective duration

Source: Bloomberg, CFTC, Time period: 27/12/2012 - 27/12/2022

Put-Call-Skew

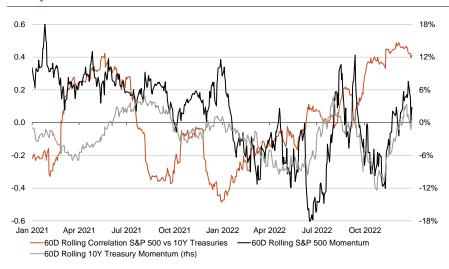


- The put-call skew has declined noticeably for both the S&P 500 and the Euro Stoxx 50. For both indices, the current skew value is below the 10-year average.
- Financing hedges in the form of puts by selling calls is thus historically relatively cheap - especially for US equities.

The put-call skew (90-110) indicates the difference in implied volatility of puts versus calls whose strike is 10% away from the current underlying in each case. It is a measure of how much more investors are willing to pay for hedging (puts) versus upside participation (calls). The higher (lower) the skew, the more cautious (optimistic) market participants are. Moreover, the skew typically increases with the level of implied volatility.

Source: Bloomberg, period: 30/12/2012 - 30/12/2022

60-Day Momentum and Correlation



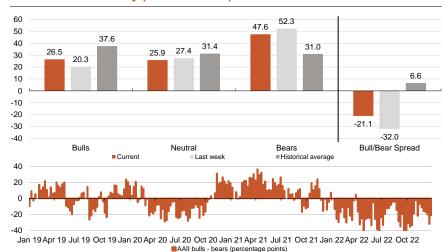
- The correlation of US equities and US government bonds remains in the positive range. Bonds and equities thus show a similar performance pattern, which limits the diversification effect.
- The lack of strong momentum for both asset classes suggests a low positioning of systematic investors.

The 60-day momentum indicates the rolling return of the last 60 days. The more the momentum rises (falls), the more systematic momentum strategies build up (reduce) their positions in the corresponding asset class. Changes in the sign of the return mark important turning points. The 60-day correlation indicates how equitably stocks and bonds move. The higher (lower) the correlation, the fewer (more) equities demand risk-based investment strategies.

Source: Bloomberg, Time period: 31/12/2020 - 30/12/2022



AAII Sentiment Survey (Bulls vs Bears)

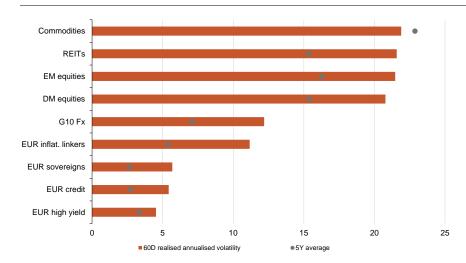


- Sentiment among US private investors has deteriorated further in recent weeks.
- Compared to the historical average (6.6 pp), the current bull/bear spread is significantly more negative at -21.1.

The Sentiment Survey, conducted by the American Association of Individual Investors, determines the percentage of individual investors who are optimistic, pessimistic or neutral about the US stock market over a six-month period. It has been conducted since 1987. The survey is conducted from Thursday to Wednesday and the results are published every Thursday. For the stock market, it tends to be supportive when there is a high proportion of balls. On the other hand, it tends to be negative when there are significantly more optimists than pessimists.

Source: Bloomberg, AAII, Time period: 23/07/87 - 30/12/2022

Realised Volatilities

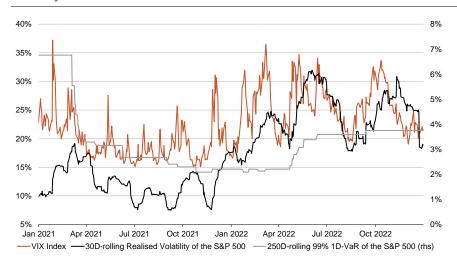


- Commodities currently have the highest realised volatility over the last 60 days. At over 20%, this is nevertheless below the historical average. However, the high value is hardly surprising considering the news situation in China, OPEC+ speculation and EU-Russia sanctions.
- While high-yield bonds were still the most volatile segment within bonds a few weeks ago, they now have the lowest fluctuation range, among other things due to lower duration.

The realised volatility (in per cent) measures the fluctuation range of a time series and is defined here as the standard deviation of the daily return over the last 60 trading days. Volatility is often used as a measure of risk.

Source: Bloomberg, period: 02/01/2018 - 30/12/2022

Volatility and Value-at-Risk of the S&P 500



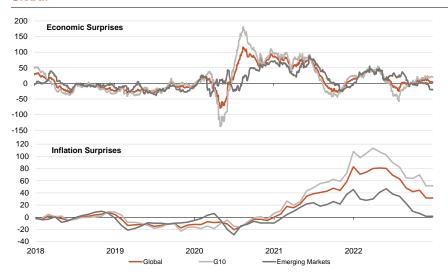
- The VIX has recently been hovering around the 20 mark, trading near the lows of 2022. Volatility is correspondingly favourable.
- The realised volatility of the S&P 500 also decreased significantly after highly volatile days fell out of the rolling 30-day calculation window.

The VIX index is a measure of the implied volatility of the S&P 500 priced in options over approximately the next 30 days. Realised volatility indicates the range of variation in daily returns. The historical 99% value-at-risk indicates the minimum loss of the days that belong to the worst 1% of the observation period. The higher (lower) the VIX, realised volatility and value-at-risk, the fewer (more) stocks demand risk-based investment strategies.

Source: Bloomberg, period: 31/12/2020 - 30/12/2022



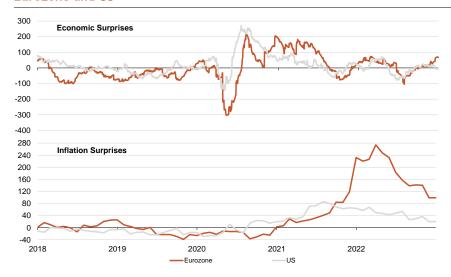
Global



- In the emerging markets, negative economic surprises have dominated positive ones in recent weeks. China, where the purchasing managers' data for the industrial sector for December fell short of expectations, was a particular burden.
- Both in the industrialised nations (G10) and at the global level, the picture appears more positive with continued positive economic surprises. Nevertheless, the positive surprises cooled down here as well recently.

See explanations below.
Source: Bloomberg, Time period: 01/01/2018 - 30/12/2022

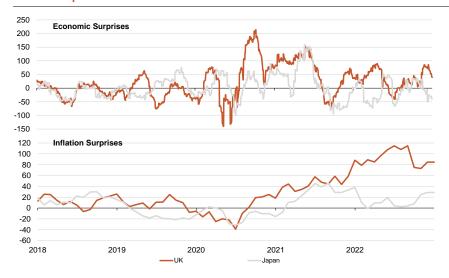
Eurozone and US



- The US economy has surprised on the negative side in recent weeks and seems to be giving in to recession fears. Here, labour market data continued to be robust, while orders for durable goods declined significantly.
- In the Eurozone, however, the positive economic surprises are increasing. Here, the ifo business climate in Germany and consumer confidence in Italy surprised to the upside.

See explanations below.
Source: Bloomberg, Time period: 01/01/2018 - 30/12/2022

UK and Japan



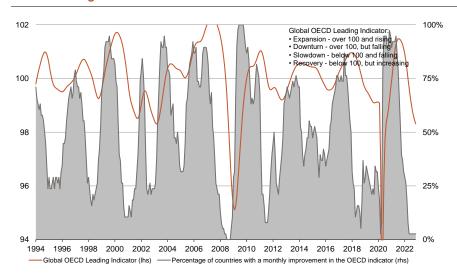
- In the UK, expectations for quarterly and annual GDP were significantly below expectations.
- In Japan, on the other hand, month-onmonth industrial production was less negative than expected.

The Citigroup Economic Surprise Indices are defined as weighted historical normalised data surprises (actual releases vs. Bloomberg survey median) over the past three months. A positive value of the index indicates that, on balance, economic data have outperformed consensus. The indices are calculated daily in a rolling three-month window. The indices use a time decay function to replicate the markets' limited memory, i.e. the weight of a data surprise decreases over time.

Source: Bloomberg, period: 01/01/2018 - 30/12/2022



OECD Leading Indicator

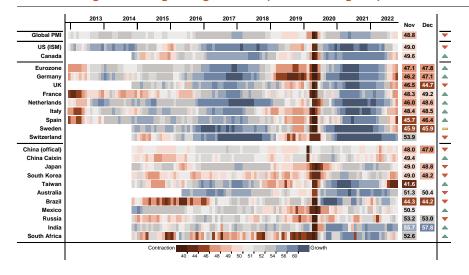


- · The OECD Leading Indicator, a robust signal of future economic turning points, continued its downward trend in November. The indicator (below 100 and falling) thus points to a slowdown in economic activity - across the board.
- 97% of countries deteriorated compared to the previous month, with Ireland as the only exception.

The OECD Leading Indicator is composed of a set of selected economic indicators whose composition provides a robust signal of future turning points. A turning point usually signals a turning point in the business cycle in 6-9 months. However, lead times are sometimes outside this range and turning points are not always correctly identified.

Source: Bloomberg, Time period: 31/01/1994 - 30/11/2022

Manufacturing Purchasing Managers Index (Manufacturing PMI)

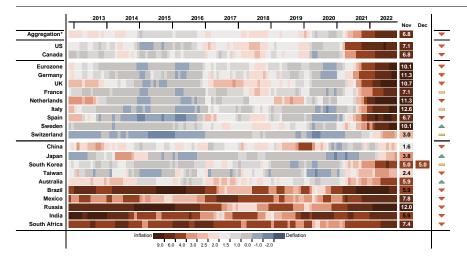


The preliminary PMIs for December show a mixed picture. The Eurozone, Germany and France increased, while the UK and Japan showed declines. It is also worth noting that the major eurozone economies are below the important 50 mark, signalling a decline in industrial activity.

The PMI is an overall index that provides a general overview of the economic situation in industry. The PMI is derived from a total of eleven sub-indices, which reflect the respective change from the previous month. A value of 50 is regarded as neutral, a value of over 50 points as an indicator of rising and a value of under 50 points as an indicator of declining activity in industry compared to the previous month. On average, the index has a lead time before actual industrial production of three to six months. The PMI is based on a survey of a relevant selection of purchasing managers on the development of key indicators such as new orders.

Source: Bloomberg, Time period: 30/12/2012 - 30/12/2022

Headline Inflation



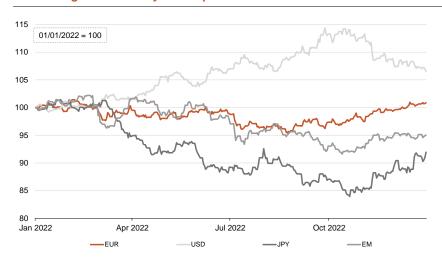
- · The inflation data for December do not show a clear picture so far.
- Only South Korea has reported inflation data for the month of December. There was no change compared to the previous month, with a rate of 5%.

Inflation (in %, compared to the previous year) is measured using a consumer price index, also called a basket of goods. This basket contains all goods and services that a household purchases on average per year. * = Weighting according to gross domestic product

Source: Bloomberg, Time period: 30/12/2012 - 30/12/2022



Trade-Weighted Currency Development

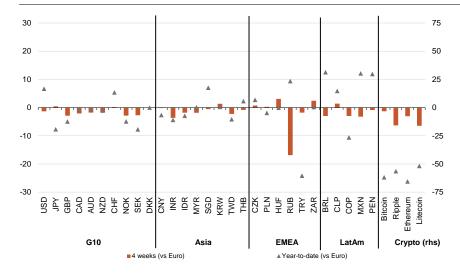


- The euro recently continued its upward trend, boosted by the hawkish comments of ECB President Lagarde. The US dollar, on the other hand, moved slightly lower.
- The Japanese yen was among the biggest losers in 2022, but recently made up ground after the BoJ took a first step towards more restrictive monetary policy by widening the target range for bond yields.

A trade-weighted index is used to measure the effective value of an exchange rate against a basket of currencies. The importance of other currencies depends on the share of trade with the country or currency zone.

Source: Bloomberg, Time period: 01/01/2022 - 30/12/2022

Currency Moves vs Euro

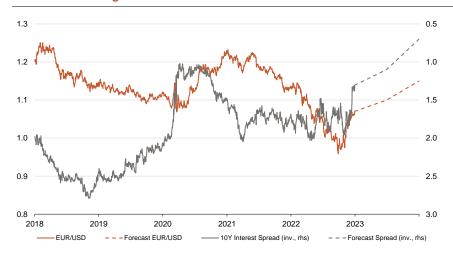


 The euro posted gains against most of the currencies shown here over the last month - but over the last year the picture is much more mixed. In particular, the Turkish lira and some cryptocurrencies lost ground against the euro. In contrast, the euro lost ground against the US dollar, the Swiss franc and most Latin American currencies over the past year.

Performance of selected currencies against the euro, in percent. $% \left(1\right) =\left(1\right) \left(1\right) \left($

Source: Bloomberg, Time period: 31/12/2021 - 30/12/2022

EUR/USD Exchange Rate and Interest Rate Differential of 10Y Bonds



- The euro-US dollar rose to more than 1.06 US dollars per euro over the last few weeks after its excursion below parity.
- One reason for this was the significant narrowing of the interest rate differential between the US and Germany.
- Currency hedges for euro investors in US dollars have thus become noticeably cheaper.

EUR/USD exchange rate and interest rate differential (in percentage points) of 10-year US government bonds and 10-year Bunds. The forecasts were prepared by Berenberg Economics.

Source: Bloomberg, Time period: 01/01/2018 - 31/12/2023



European Sector & Style Performance

	4-w	reek & YTD		12-month periods over that last 5 years						
	■ 4W (02/12/22 - 30/ ■ YTD (31/12/21 - 30			30/12/21 30/12/22	30/12/20 30/12/21	30/12/19 30/12/20	30/12/18 30/12/19	29/12/17 30/12/18		
Finance	-1.3 -3.1			-3.2	28.6	-15.5	22.9	-19.6		
Communication Services	-2.7 -4.4			-4.5	25.6	-2.0	32.0	-0.7		
Value	-2.9 - -1.1			-1.3	21.6	-12.6	20.0	-11.9		
Utilities	-3.2 - -8.1			-8.4	8.3	11.5	31.4	2.2		
Energy	-3.3		36.9	36.6	35.0	-33.7	9.0	-0.9		
Industrials	-16.9			-17.0	28.4	4.3	35.8	-13.7		
Consumer Discretionary	-16.8			-16.8	22.7	6.6	34.3	-15.1		
Materials	-4.8 = -9.2 -4.8 =			-9.4	24.6	9.9	26.9	-14.4		
Consumer Staples	-8.3			-8.6	20.0	-3.0	25.8	-9.2		
Telecommunications	-12.3			-12.4	13.0	-13.4	5.2	-9.9		
Growth	-17.7			-17.8	28.0	6.1	33.2	-10.0		
Information Technology	-28.7			-28.9	36.7	14.7	38.4	-7.3		

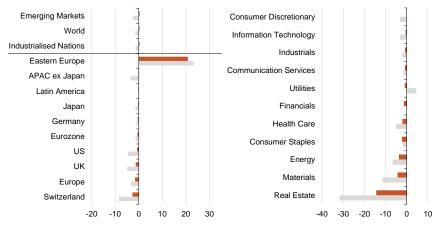
Consumer Discretionary; MSCI Europe Consumer Discretionary NR; Consumer Stables: MSCI Europe Cons. Staples NR; Energy: MSCI Europe Energy NR; Finance: MSCI Europe Financials NR; Health Care: MSCI Europe Health Care NR; Industrials: MSCI Europe Industrials NR; Information Tech.: MSCI Europe Inform. Tech. NR; Materials: MSCI Europe Materials NR; Communication Services: MSCI Europe Communication Services NR; Utilities: MSCI Europe Utilities NR; Value: MSCI Europe Value NR; Growth: MSCI Europe Growth NR.

- The energy sector was the only European equity sector with a positive development in 2022. All others, however, lost value.
- The value style performed significantly better than the growth style last year.
- In the last four weeks, however, all sectors have lost value. Financial stocks still held up best.

Total return of European equity sectors and European style indies, in euros and in percent, sorted by 4-week performance. The difference between Value and Growth lies in the valuation. A growth stock is highly valued because the company is expected to grow strongly. Value stocks usually have less growth potential and are valued lower.

Source: Factset, Time period: 29/12/2017 - 30/12/2022

Changes in Consensus Earnings Estimates

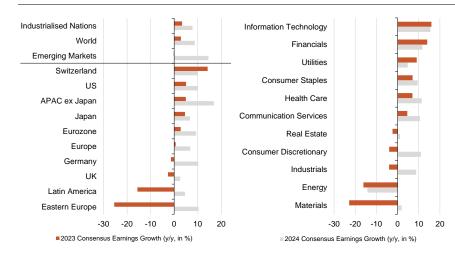


- 1M changes to consensus earnings estimates for the next 12 months 3M changes to consensus earnings estimates for the next 12 months
- With China moving away from 0-Covid and the outlook for Eastern Europe no longer as gloomy, the consensus has become more positive on emerging markets. Thus, earnings revisions for emerging markets have also been positive over the past four weeks. Besides Eastern Europe, Asia ex Japan saw a slightly positive earnings revision.
- Among the industrialised nations, Europe and Switzerland recorded the most negative earnings revisions recently.

1-month and 3-month changes in consensus earnings estimates for the next 12 months of the regional and Europe sector MSCI indices, in per cent.

Source: FactSet, as of 30/12/2022

Earnings Growth



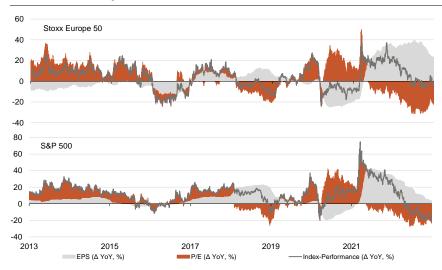
- Analysts continue to see positive global earnings growth in 2023. According to consensus, growth is likely to come primarily from the industrialised nations. Earnings in Switzerland and the USA are expected to grow the most.
- Among the European sectors, analysts expect the highest earnings growth in IT and financial companies in 2023.

Consensus expected calendar year earnings growth for selected equity regions, year-on-year and in percent. The earnings estimates of the individual companies are aggregate upwards using the index weights ("bottom-up"). Regional and Europe Sector MSCI Indices. APAC ex Japan = Asia Pacific excluding Japan

Source: FactSet, as of 30/12/2022



Contribution Analysis

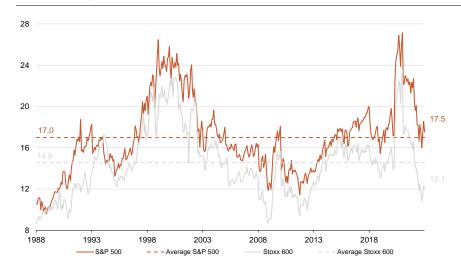


- The year-on-year performance of the S&P 500 has recently reached a new low, also due to the high starting point of the end of 2021. In addition to falling valuations, the hardly growing year-onyear earnings were burdening factors.
- The Stoxx Europe 50, on the other hand, performed better year-on-year, recording only a slight loss thanks to better earnings development.

Analysis of the drivers of stock market development over the last 12 months. The change in earnings estimates and the change in valuation (price-earnings ratio) are taken into account. EPS = earnings per share

Source: Bloomberg, Time period: 01/01/2012 - 30/12/2022

Price-Earnings Ratio (P/E Ratio) of European and US Equities

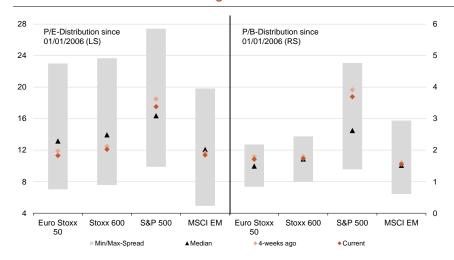


- European equities are off to a cheap start in 2023, trading at a P/E ratio of 12.1, well below the historical average of 14.6
- US equities, on the other hand, are still not cheaply valued. With a P/E ratio of 17.5, they are still trading slightly above the historical average of 17.

P/E valuation based on earnings estimates for the next twelve months of European and US equities as well as the respective P/E average since 1988. *For the Stoxx 600, the history before 2000 was taken from MSCI Europe.

Source: Bloomberg, Factset, Time period: 31/12/1987 - 30/12/2022

Historical Distribution: Price/Earnings and Price/Book Ratio



• In the last four weeks, the Euro Stoxx 50, the Stoxx 600, the S&P 500 and the MSCI EM have all fallen slightly. The P/E ratio and the P/B ratio have recently fallen slightly again after the Q4 recovery came to an abrupt end with the continued restrictive tones of the central banks.

Historical distribution of valuation ratios for selected equity regions since 2006. In addition to the current value, the observation four weeks ago and the historical median, the maximum (upper limit of the grey bar) and minimum (lower limit of the grey bar) are shown.

Source: Bloomberg, Time period: 01/01/2006 - 30/12/2022



10-Year Government Bond Yields



- After the temporary excursion downwards, yields on government bonds have risen noticeably again in recent weeks due to hawkish central banks.
- This is particularly true in the Eurozone, where yields on German, French and Italian government bonds have risen by more than 70 basis points (bp) in the last four weeks.

Effective yield on 10-year government bonds and change over the last four weeks in basis points (in brackets).

Source: Bloomberg, Time period: 01/01/2017 - 30/12/2022

Yield Curve Steepness (10Y - 2Y)

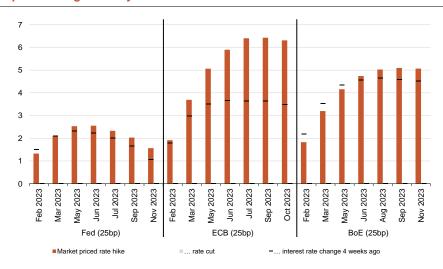


 Both the US and German yield curves are now noticeably inverted. The bond market thus indicates an impending recession for both countries. The bond market thus expects central bank interest rates to fall again in the medium term.

The yield curve distinguishes between the so-called short end and the long end. The reason for this is the way in which factors influence yields. Central banks control the short end of the curve through their monetary policy and key interest rates. In contrast, the long end is influenced less by central banks and more by inflation expectations, supply, demand and risk premiums.

Source: Bloomberg, Time period: 01/01/1998 - 30/12/2022

Implicit Changes in Key Interest Rates



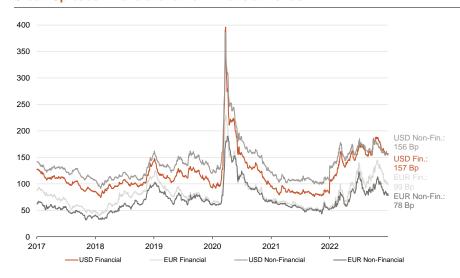
- In the last four weeks, interest rate expectations have changed, especially in the Eurozone. The market expects significantly more interest rate hikes by the ECB than four weeks ago. Currently, 6 interest rate hikes of 25 bp each are being priced in until October.
- On the other hand, interest rate expectations in the US or the UK have changed little. According to the market, we are likely to see two more 25bp rate hikes in the US in the first half of the year.

Derivatives on money market interest rates - such as the fed funds futures - can be used to determine the change (number of steps) in the key interest rate priced by the market.

Source: Bloomberg, Time period: 02/12/2022 - 30/12/2022



Credit Spreads Financial and Non-Financial Bonds

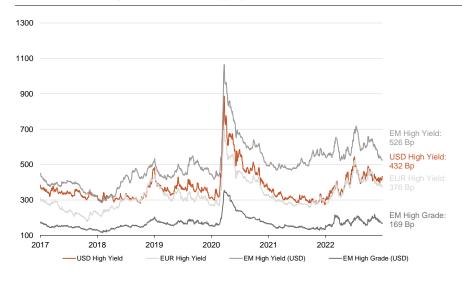


- Spreads on investment grade corporate bonds have changed little in recent weeks.
- Both USD and EUR-IG corporate bonds saw stable, historically slightly higher spreads despite risk-off.

Explanations see middle and lower figure.

Source: FactSet, Time period: 01/01/2017 - 30/12/2022

Credit Spreads High Yield and Emerging Markets Bonds



- Emerging high-yield bonds have also seen falling spreads in recent weeks. Increasing economic stabilisation measures in China and the move away from 0-Covid have improved sentiment.
- USD high-yield bonds, on the other hand, saw slightly rising spreads, while spreads on EUR high-yield bonds fell slightly.

How high the risk associated with the corporate bond is is shown by its asset swap spread (in bp). This indicates the yield that the issuer must pay in addition to the swap rate for the respective term as compensation for its credit risk. See further explanation below.

Source: FactSet, Time period: 01/01/2017 - 30/12/2022

Bond Segments Overview

	P	Cey figur	es	Asset Swap Spread			Total Return (%, local)						
	Yield (in %)	Δ-1Μ	Modified Duration	Spread (Bps)	Δ-1Μ	10Y-Per- centile	1M	YTD	30/12/21 30/12/22	30/12/20 30/12/21	30/12/19 30/12/20	30/12/18 30/12/19	30/12/17 30/12/18
EUR Government	3.15	0.60	7.1	-	-	-	-4.2	-18.2	-18.2	-3.4	4.9	6.8	1.0
Germany	2.50	0.55	7.0	-	-	-	-3.9	-17.6	-17.5	-2.6	3.0	3.0	2.4
EUR Corporate	4.22	0.39	4.6	86	-14	63	-1.6	-13.9	-14.0	-1.0	2.6	6.2	-1.1
Financial	4.36	0.32	3.8	99	-21	66	-0.9	-11.8	-11.8	-0.6	2.2	5.7	-1.2
Non-Financial	4.14	0.44	5.0	78	-11	61	-2.0	-15.1	-15.2	-1.2	2.9	6.5	-1.1
EUR High Yield	7.67	0.39	3.2	376	-17	66	-0.7	-11.5	-11.5	3.4	2.8	11.3	-3.6
US Treasury	4.18	0.12	6.3	-	-	-	-0.5	-12.9	-12.7	-2.5	8.0	7.4	0.6
USD Corporate	5.51	0.08	6.8	156	-9	77	-0.2	-15.4	-15.3	-1.0	9.5	14.6	-2.5
Financial	5.67	0.06	5.1	157	-10	86	0.1	-12.6	-12.5	-0.9	8.8	12.8	-1.6
Non-Financial	5.43	0.09	7.7	156	-7	72	-0.4	-16.7	-16.5	-1.0	9.7	15.4	-2.8
USD High Yield	8.97	0.32	4.3	432	14	70	-0.8	-11.2	-11.2	5.4	6.1	14.6	-2.4
EM High Grade	5.75	-0.10	5.2	169	-25	37	0.9	-14.2	-14.1	-0.1	5.7	12.0	-1.0
EM High Yield	10.45	-0.30	3.9	526	-34	43	2.6	-14.8	-14.9	-4.1	9.0	13.5	-2.3

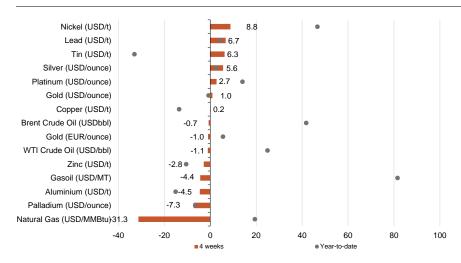
- The recent sharp rise in yields in Europe has had a noticeable impact on both EUR government and EUR corporate bonds. EUR government bonds lost more than 4% of their value in the last four weeks.
- Emerging market bonds, on the other hand, increased in value. This was mainly due to falling spreads.

ICE BofA indices in the following sequence: Euro Government; German Government; Euro Corporate; Euro Financial; Euro Non-Financial; Euro High Yield; US Treasury; US Corporate; US Financial; US Non-Financial; US High Yield; High Grade Emerging Markets Corporate Plus; High Yield Emerging Markets Corporate Plus. EM indices are hard currency bonds.

Source: FactSet, Time Period: 30/12/2017 - 30/12/2022



Commodities Performance

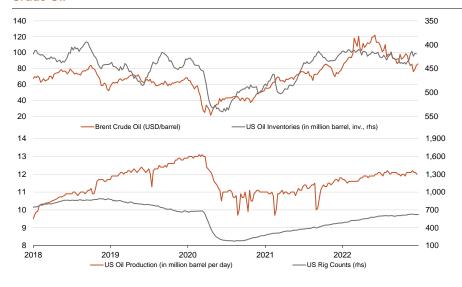


- There was a large spread within commodity markets in 2022. Energy commodities benefited from the Russia-Ukraine war and the international sanctions. Gas oil, crude oil and natural gas were the clear winners last year.
- Industrial metals also benefited from the resulting scarcity concerns at the beginning of the war, but then gave back most of their gains with China's tough zero-covid policy.
- Precious metals were under the spell of central banks over the last year and only made slight gains in 2022.

Total return of selected commodity indices, in percent, sorted by 4-week performance.

Source: Bloomberg, Time period: 31/12/2021 - 30/12/2022

Crude Oil

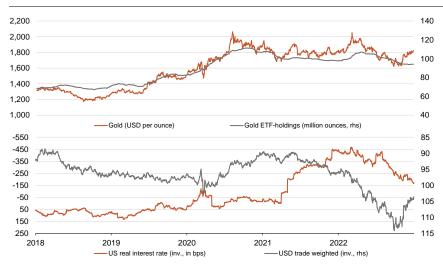


- Crude oil closed the volatile year 2022
 with a gain of almost 40% thanks to
 strong rolling gains. Nevertheless, the
 spot oil price had to give up most of its
 gains in the second half of 2022, driven
 by the release of the Strategic Petroleum
 Reserve in the US, recession fears and
 China's lock-up.
- Nevertheless, there are many reasons why the oil price should rise again this year. New demand drivers and the ongoing shortage should provide a tailwind in 2023.

Higher oil production and higher inventories tend to weigh on oil prices and vice versa. An increase in active oil wells indicates higher oil production in the future.

Source: Bloomberg, Time period: 01/01/2018 - 30/12/2022

Gold



- It has been a volatile year for gold, with the price hitting a near-record high in March before falling for seven consecutive months after the US Federal Reserve aggressively raised interest rates.
- In recent weeks, the metal has rallied as cooler US inflation data fuelled hopes of a slowdown in monetary tightening.

The US dollar and the real, i.e. inflation-adjusted, interest rate are among the fundamental price factors of the gold price. Rising real interest rates tend to weigh on the gold price, while falling real interest rates have a supportive effect. The same applies to the US dollar. The development of gold ETF holdings reflects financial investors' demand for gold. Source: Bloomberg, Time period: 01/01/2017 - 30/12/2022



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Date: 02 January 2023

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