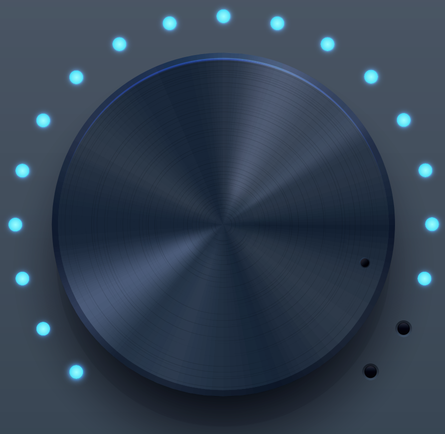
Santander Private Banking



Market Outlook

April 2023

Final calibration: The pause is near

We are approaching the expected moment when the central banks would press the pause button on one of the fastest and steepest rate hike cycles in recent history. The current phase of monetary policy calibration is particularly complex. Central banks face a significant challenge in their upcoming decisions as they must manage the confluence of three factors: persistent inflation, liquidity tensions in the financial system and the lagged effects of rate hikes in the economy.

Economic activity has been stronger than expected in the first quarter of the year both in the US and Europe. Robust job creation has continued to provide support for private consumption. However, there are signs of weakness in leading indicators, and we expect a significant deterioration of credit conditions in the coming quarters. The present economic backdrop together with asset valuation call for caution in risk assets. Yield is back in high credit quality bonds and government bonds offering compelling value versus equities.

Calibrating the final rate adjustment

01 Monetary policy pause is near

After one of the most dramatic monetary tightening processes in history, we are approaching the time of a pause in interest rate hikes. Central banks are about to enter a calibration phase of monetary policy which is highly complex due to persistently high core inflation. Although it is true that the headline inflation peak is behind us in the US and the Eurozone, this improvement is far from being widespread. Services and food inflation have yet to peak. In the US the labor market is still robust and the elevated number of unfilled vacancies keeps upward pressure on services inflation. Recent bouts of instability in the financial system add further complexity to the central banks' roadmap.

02 No pivot without slowdown

Market consensus expected economic weakness in the first few months of 2023, but the vast majority of incoming economic data have been surprisingly resilient. The reopening of the Chinese economy, the absence of energy supply problems in Europe and the strength of consumer spending in the United States have allowed central banks to maintain the pace of rate hikes. We expect a turnaround in the coming months as household consumption could lose steam and the effects of credit tightening could take a toll on investment decisions. We believe that the pivot will only be announced when services inflation moderates and signs of weakening economic growth become evident.

03 Fixed income finally offers "income"

Our growth and inflation projections envisage an environment that favors an overweight in core fixed income over assets that are more sensitive to the economic cycle (high yield bonds and equities). An analysis of current valuation levels relative to history reinforces the allure of bonds after investors were starved for yield for years.

01 Calibrating the final rate adjustment

In our Annual Market Report released in November 2022 ("The Great Interest Rate Reset") we defined a roadmap with three milestones for market developments in 2023. The first milestone was linked to the peak in inflation data, which would allow central banks to pause rate hikes and evaluate the effects on the economy. **We consider that we are reaching the final part of rate increases, in which monetary policies decisions need to be finely calibrated in order to reach price and financial stability.**

The largest interest rates' increase since the 1980s reaches the phase of final calibration

As seen in the chart below, **interest rates of the US 2-Year Treasury bond have started moving within a range** over the last three months after the large upward adjustment experienced in 2022. Although rate volatility persists, **we foresee a diminishing risk of further large upward rate movements.** Global interest rates (with the exception of Japan) are already at levels well above neutral rates and will slowly restrain growth. This level of tightening should be sufficient to mitigate price tensions.

Fed officials are questioning the need to raise rates further as interest rates are already very tight and financial cracks are beginning to appear

The magnitude of the monetary tightening implemented over the past year is already causing liquidity strains and a few worrying episodes of financial instability. The recent failures of financial institutions in the United States **(Silicon Valley Bank,** Signature Bank and Silvergate Bank) were caused by liquidity problems after important deposit withdrawals and concerns about unrealized losses in their government bonds' portfolios. In Europe, Credit Suisse was forced to accept an integration with UBS in a context of continued regulatory problems and growing distrust from its clients. While the problems of the banks that have experienced liquidity stress are idiosyncratic in nature, we believe that **the context of increased financial fragility will contribute to broadening doubts among monetary authorities about the level of rate tightening needed** to balance the economy without jeopardizing the stability of the system.

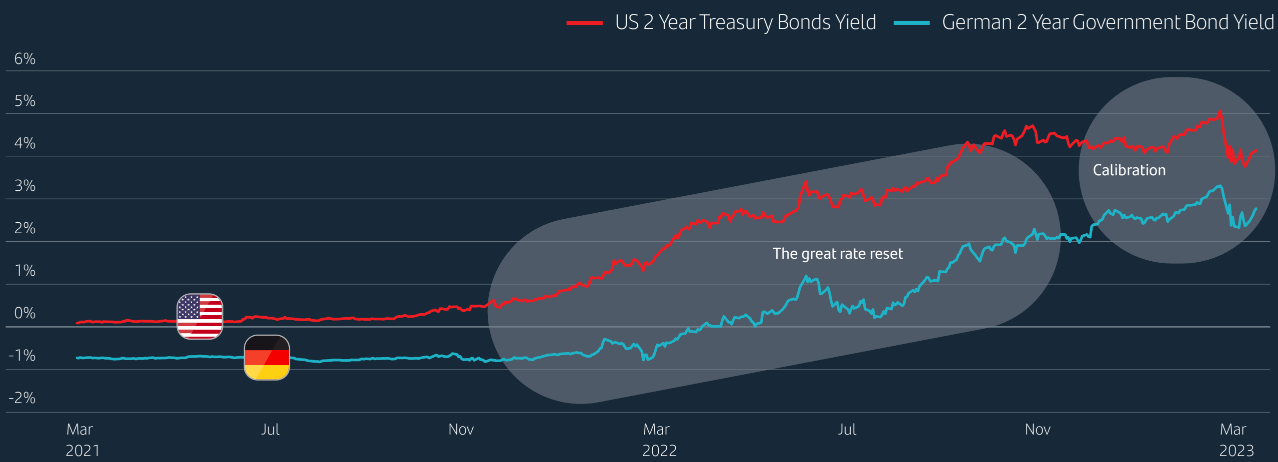
We do not perceive that the global economy is on the verge of another financial crisis as banks are much better capitalized than they were in 2008

The markets are beginning to anticipate a change of direction in the movement of interest rates and yields on the short end of the curve are moving sideways. **High volatility and uncertainty about the interest rate environment persists, but the market's movement is no longer clearly directional.** Our strategy is biased toward increasing duration as the end of the Fed's tightening cycle approaches.

Time has come for calibration as market doubts whether the monetary tightening is sufficient

Source: Bloomberg. Data as of 3/23/2023

Interest rates remain range-bound and the risk of further increases appears to be limited



Inflation focus shifts to services

Statements from the main monetary authorities have been unanimous in their determination to mitigate inflationary pressures in order to rebuild confidence that inflation rates will come down to target levels. **In the coming months the main problem central banks will face is the lag with which the impact of monetary policy actions show in the economy.** Econometric models, leading indicators and past hiking cycles suggest that the adjustment already made should be sufficient. However, **inflation data has yet to validate that the task of abating price pressures is mostly complete.**

Monetary authorities are determined to maintain credibility by subduing inflation

The charts below show the clear downward trend of headline inflation in both the United States and the Eurozone. However, when analyzing the breakdown by components, we can notice how this improvement is not taking place across the board and is mainly based on declining price pressures in goods and energy. Taking a closer look to **U.S. inflation** statistics there is a **worrying upward trend in services inflation.** However, a significant component of the surge in services inflation is linked to housing which is measured in the US via the Owner Equivalent Rent (OER) survey. OER is effectively the rent that the homeowner is giving up by living in their house instead of renting it out. It's influenced by housing prices, but its methodology tends to lag behind movements in nationwide home prices by a year. The **housing market is cooling but it will take some time to show in the inflation statistics.**

The Fed's new interest rate projections reveal a strong consensus around a peak fed funds rate of 5.0%-5.25%

As to **inflation in the Eurozone,** the lagged effect of a second wave of price pressures stemming from the invasion of Ukraine must be considered. This event caused additional price pressures in energy and food, which explains why disinflation is much more incipient compared to the United States. **The European Central Bank is focused on the evolution of core inflation and in particular that related to services and food.**

The downward trend in inflation is entering a complex phase due to the persistent price pressures in the services component

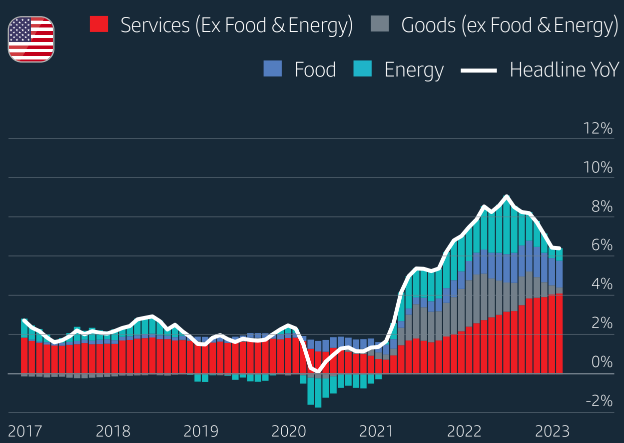
Recent central bank **messages are still hawkish due to the persistence of inflationary pressures in the so-called "sticky" components (where prices do not adjust quickly to changes in supply and demand).** We consider it highly unlikely that monetary authorities will give any message of monetary easing as long as there is no clear turning point in the components where inflation is more difficult to eradicate.

Inflation´s "last mile" is the trickiest: core inflation rates are downward sticky

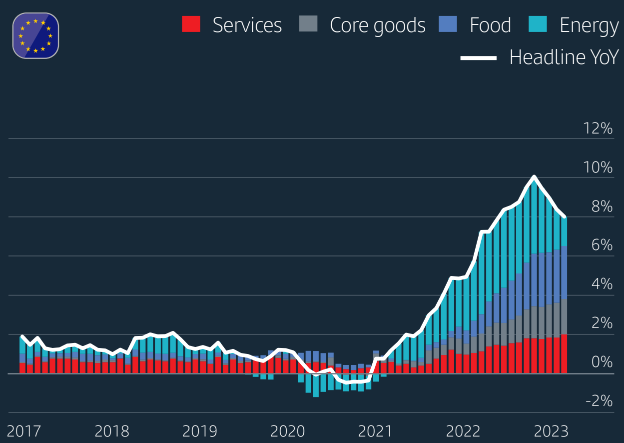
Source: Bloomberg. Data as of 03/06/2023

Services inflation is still on the rise. Meeting the target is going to require more time

US Inflation



Eurozone inflation



No signs of easing in the labor market

Fed members face the dilemma of pausing interest rate hikes when they still perceive that there is work to be done to bring inflation levels back on track towards the 2% target. The transmission channel from higher policy rates to weaker economic growth, and, ultimately, lower inflation is characterised by long lags. **The main concern lies in potential second-round effects coming from upward wage pressures in a context of labor shortages.** In Europe, labor market tightness is lower, although the UK and Germany share similarities with the the US economy.

The risk of a wage-price spiral remains a significant concern for central banks

The chart below shows the **magnitude of the supply/demand imbalance in the U.S. labor market.** According to data from the Bureau of Labor Statistics (BLS), there were 160.1 million Americans in employment at the end of January 2023, and 10.8 million unfilled job openings. Total labor demand of the economy is the sum of people in employment and open vacancies. On the other side, total labor supply is the sum of people in employment and unemployed actively seeking work. The current level of demand exceeds the total supply of jobs by more than 5 million -put another way, there are two jobs available for every unemployed person- which implies an unprecedented level of friction and tightness in the labor market in recent decades. The Federal Reserve is concerned about the fact that **monetary tightening has so far been ineffective in cooling economic activity and rebalancing a labor market with high excess labor demand.**

Employment data continues to show signs of tremendous strength with hiring levels well above expectations

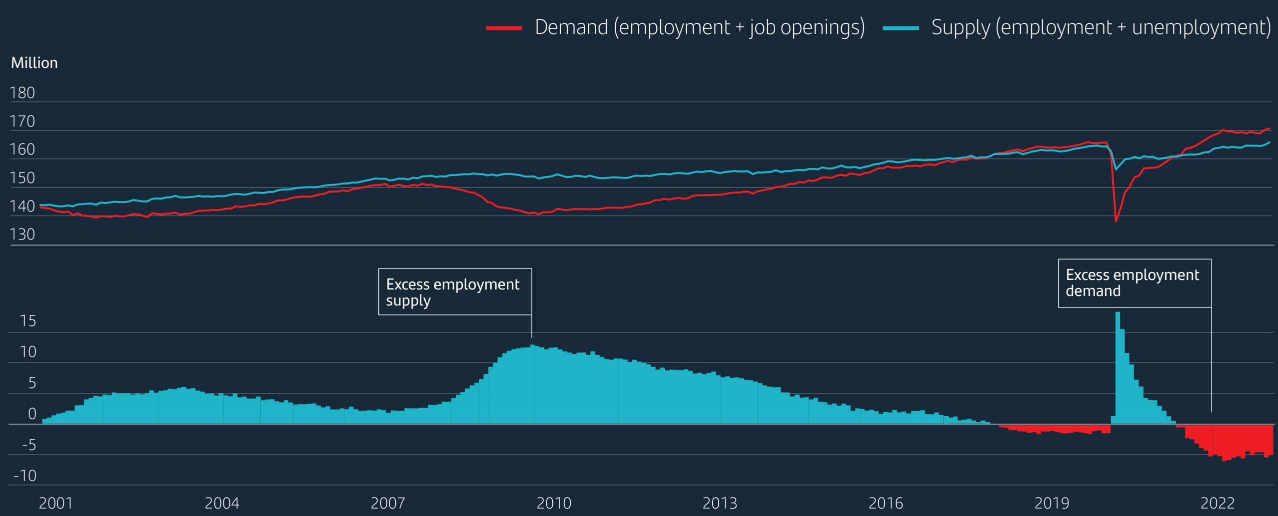
We are entering a phase of enormous complexity in the task of calibrating monetary policy due to the persistence of wage pressures and price tensions in the services sector. **We consider that the room for central banks to act is very limited until there is some adjustment in the labor market, resulting in a clear turnaround in wage increases and in core inflation data.** The language of the central banks' communiqués is beginning to suggest that it would be advisable to pause the upward movement of interest rates after the intense tightening exercise that has been carried out. At the same time, monetary authorities are aware that their credibility as guardians of price stability is at risk. **In this final phase of calibration, the risk of additional rate hikes is becoming very limited, but it is still too early to consider the task of controlling the sources of upward inflationary pressures as complete.** The market is beginning to glimpse the end of interest rate tightening, but has doubts about the economic cost of reaching equilibrium in terms of monetary stability.

Central banks are aware of the high risk of a potential loss of credibility in safeguarding price stability

The US labor market is too tight for Fed comfort as labor pool shrinks

Source: Bloomberg . Data as of 3/7/2023

Employment demand exceeds supply by over 5 million workers



02 Rates will spend some time "on hold"

The first quarter of 2023 was characterized by positive surprises in growth indicators. In **China,** the authorities reversed their "Zero-Covid" policy and relaxed the mobility restrictions that weighed so heavily on consumption growth in 2022. In **Europe,** fears of potential energy supply problems were allayed by mild weather conditions and the successful procurement of alternative sources of supply to Russian gas. In the **United States,** private consumption , supported by savings accumulated during the pandemic and the surprising resilience of the labor market, was surprisingly strong.

Growth indicators surprised to the upside during the first quarter as risks in Europe and China cleared

As a result, growth estimates were revised upwards to some extent, and even the possibility of a "soft landing" or "no landing" scenario began to be considered. Such episodes of **soft or perfect landings after a period of intense monetary tightening have occurred very rarely.** We believe **this is unlikely to materialize in the current circumstances for two reasons: the complexity of the inflationary environment and the current fragility of in the U.S. financial system.**

The odds of a benign disinflation where growth temporarily stays resilient are not very high

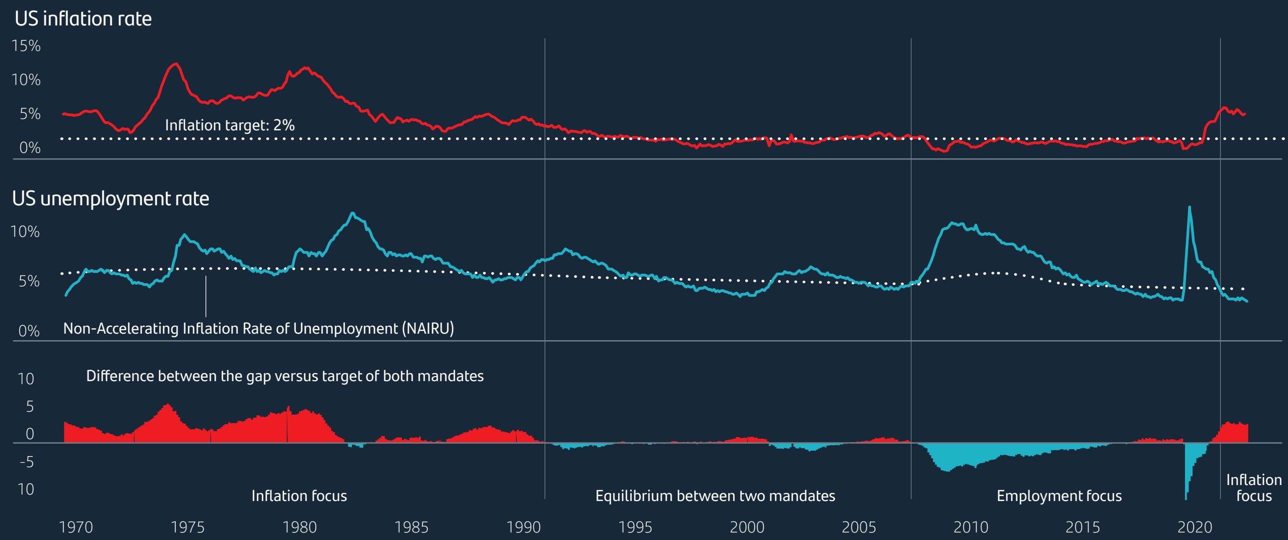
In this context, it is useful to take a closer look at the **monetary policity mandates of the central banks** and in particular those of the Federal Reserve (FED). The reaction function of the Fed is linked to its dual mandate of preserving price stability and achieving full employment. In the graph below we can observe the degree of deviation of these two mandates from the inflation target (2%) and the full employment target (as measured by estimates of the non-inflationary unemployment level or NAIRU). This analysis shows that the deviation from the inflation target is still very high, while in the case of the full employment target we are in a situation of over-fulfillment (unemployment is at minimum levels and below the target). If these two imbalances continue, the Fed would be obliged to raise interest rates even further (or at least keep them high for a prolonged period of time) in an attempt to cool the economy sufficiently to reduce the tightening of the labor market and thus inflationary pressures. **Therefore, we consider it highly unlikely that there will be a change of course in monetary policy (and lower interest rates) without a significant reduction in the current imbalances.**

Both the Fed and the ECB are far from bringing inflation close to their mandated targets

The Federal Reserve dual mandate is currently skewed towards inflation

Source: Bloomberg. Data as of 3/7/2023

Inflation is well above its target while unemployment is still at record lows



Credit tightening adds to monetary tightening

The events of instability in the U.S. financial system are still too recent to be able to determine the final impact on the real economy. However, **we anticipate two potential channels through which a transmission from the financial system to the rest of the economic agents may occur: liquidity and credit supply.** Recent publications of data on liquidity movements in the system after the SVB and Signature Bank crisis (see graph below left) show a high flow of deposits from smaller banks to large institutions and, ultimately, to money market funds. The measures adopted by the monetary authorities have absorbed the impact of liquidity strains in the system, but the movement of cash from deposits to money markets will need to be monitored.

The recent strains in the US banking system serve as a reminder that policy rates have already reached a significantly restrictive level

The U.S. financial system as a whole is highly solvent and liquid, but the existence of a less strict regulatory environment for medium-sized banks clearly generates a climate of less confidence in this segment of the financial system. Another aspect that should be monitored to assess whether the turbulence in the financial sector permeates into the rest of the economy is the supply of credit. The graph on the lower right shows how, prior to the Silicon Valley Bank crisis, credit conditions had already been tightened by commercial banks as a whole. The percentage of banks that were applying more restrictive lending policies was already high before the turmoil. **Credit tightening usually precedes periods of weak growth given the importance of credit availability for the normal functioning of the economy** as a support for investment and discretionary consumption.

This episode of financial turmoil could act as an additional drag on growth if banks tighten lending standards further

An additional factor of concern lies in the **high exposure of U.S. middle market banks to the commercial real estate sector** (particularly office and shopping centers) with less healthy credit fundamentals than those of the mortgage sector. Fed monetary policymakers are aware of the likely deterioration in credit availability in the coming months and the potential impact of financial uncertainty on the economy. **It would not be out of the question for the Fed to announce the end of interest rate hikes at its next meeting on May 3rd if the data show a transmission of liquidity strains to credit availability.**

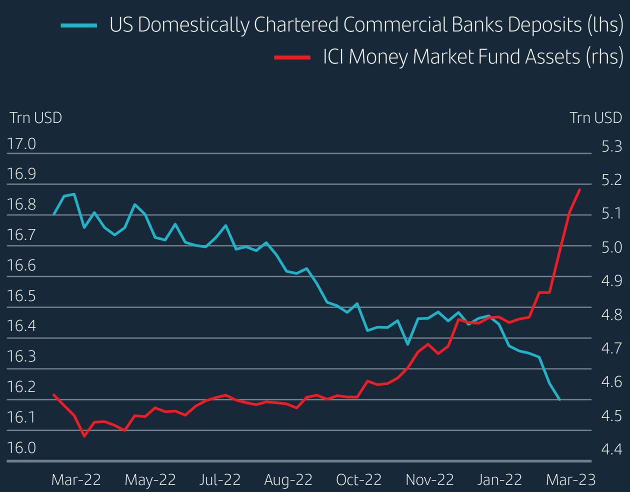
Credit tightening has a similar impact to that of rate hikes. This may accelerate the pause in monetary tightening

Banking sector liquidity strains will reduce credit availability

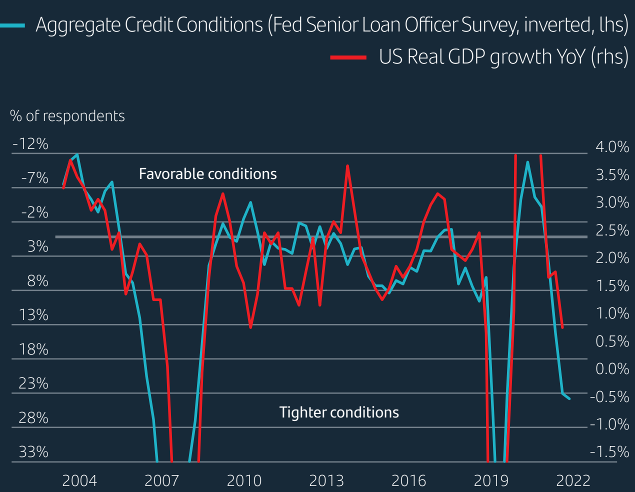
Source: Bloomberg. Data as of March 31st 2023

Current consumption patterns based on credit cannot be sustained

Liquidity flows from deposits to money market funds



Credit tightening often precedes the economic slowdown downturn



Consumption shows signs of fatigue

Private consumption has been the most resilient component of GDP. Its post-pandemic recovery in the United States is quite evident in the graphs in the lower left panel which show how spending levels on goods and services by U.S. households are already well above the pre-pandemic trend. In the graph on the right we can see that some of the spending has been financed by the decline in accumulated savings from fiscal stimulus. If these savings were distributed homogeneously by socioeconomic segment, their decline would not be of concern given the high level of liquidity and solvency of U.S. households as a whole. However, **we note a worrying trend in the increase in consumer credit (credit cards), which is evidence that housholds with less purchasing power have exhausted savings.** We believe that in the coming quarters there could be an economic slowdown as a result of the lower availability of credit, higher financial costs and the loss of real purchasing power.

Households' ability to maintain the current level of consumption has been weakened by the decline in savings and rising cost of credit

We maintain our base case in which **the type of economic adjustment needed to balance inflationary pressures should not be of a large magnitude** given the favorable labor market fundamentals and reduced private sector (household and corporate) leverage. In addition, we believe that the **weaknesses** that have manifested themselves in medium-sized banks in the U.S. are not present in large financial institutions or in European banks. None of the risk factors present in the SVB and Signature Bank liquidity crisis (unstable deposit base, asset-liability mismatch and high balance sheet growth) are present in the rest of the financial sector. Similarly, Credit Suisse's problems were idiosyncratic in nature and do not extrapolate to the rest of the financial sector. **The global economy is in a phase of economic adjustment, but we do not detect the ingredients of a major financial or economic crisis.**

In the absence of any signs of broader systemic risk stemming from the banks, policymakers will remain focused on inflation-fighting

Our view of the growth cycle is cautious given the priority of controlling inflationary pressures and the foreseeable environment of monetary and credit tightening. The expectation is that, at the first signs of trouble, the Fed and other central banks will cut rates and rescue investors. Markets are forecasting big rate cuts in the second half of 2023, but this easing is probably not going to happen as inflation remains sticky and there are other tools to help banks. With a recession likely on the horizon and the Fed unlikely to be as accommodative as the market believes, we recommend investors to remain cautious.

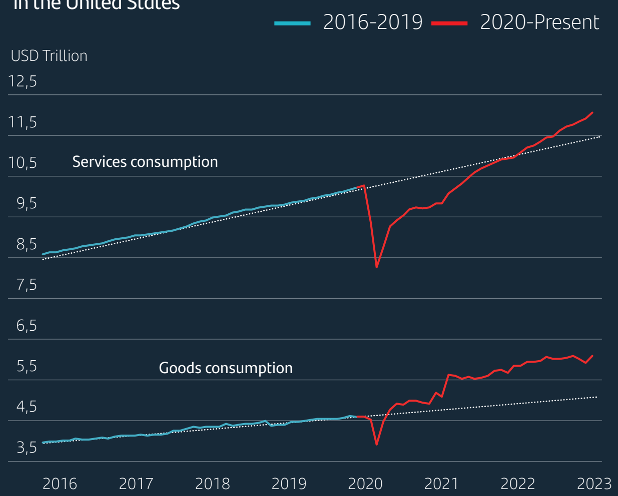
We expect subdued economic growth as tighter credit conditions will translate into much slower credit growth dynamics

High inflation is forcing consumers to dip into their savings and credit cards

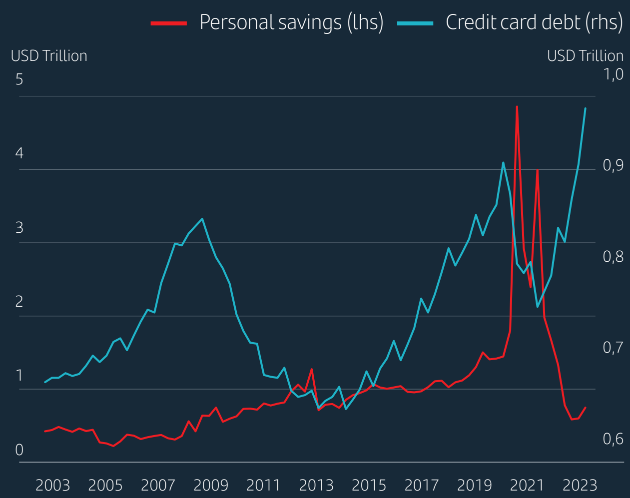
Source: Bloomberg, Santander Calculations. Data as of January 2023

US consumers are beginning to show signs of weakness

Nominal private consumption expenditure on goods and services in the United States



Consumption is increasingly financed by credit



03 Greater conviction in fixed income

In this last section of the report, we analyze the investment implications of our macroeconomic base case: growth slowdown and more stable interest rate environment. We broadly maintain the roadmap we defined in our November annual report entitled "The Great Interest Rate Reset". **We have witnessed a regime change in the monetary framework after the inflation shock, and this includes the assumption that markets are not returning to the artificially low interest rate environment that characterized the decade following the Great Financial Crisis.** The normalization of interest rates is likely to be structural in nature as the adverse side effects of abandoning monetary policy orthodoxy become increasingly evident. **In this sense, we believe that this environment of normalized interest rates is bondholder-friendly, favors investment in fixed income assets and allows the conservative investor to obtain positive returns in nominal and real terms after many years of financial repression.**

The change in the investment environment resulting from the large interest rate reset is more favorable for fixed income

In line with the roadmap we had defined for 2023, we consider it highly likely that the major central banks will communicate a willingness to pause interest rate hikes in the next quarter. **The pause would open a period of assesment in which central banks will verify whether the calibration of monetary tightening is optimal to complete the disinflation process towards the 2% target.** In the second half of 2023, we expect an economic slowdown that would allow progress in balancing price tensions. This would open the door for the Federal Reserve, at the end of the year, to announce the expected pivot or change of bias in the direction of interest rates, so we do not agree with the market consensus that expects a rate cut during the third quarter.

Analysis of previous tightening cycles shows positive returns for fixed income once the rate pause milestone has passed

In the table below we analyze the **return of the main financial assets in the periods following the end of the rate tightening phases.** To do so, we calculate the average annual return in the 24 months following the two milestones of rate pause and monetary policy pivot. This historical analysis gives us two very different readings depending on whether investment was in fixed income or equities. In the case of investment in fixed income assets, we can observe that returns are positive in practically all the episodes analyzed, regardless of whether the investment took place at the time of the pause or during the fall in interest rates.

The outlook for equities is not as clear with episodes of negative returns when there is a recession after the rate pause

Fixed income is the asset most sensitive to rate hikes but also the one that recovers the best after the pause

Source: Bloomberg. Data as of March 2023

The risk-return trade-off favors bond investing after the peak in interest rates

		Fed hiking cycles						Annual returns		
		May-83 Aug-84	Mar-87 Feb-89	Feb-94 Feb-95	Jun-99 May-00	Jun-04 Jun-06	Dec-15 Dec-18	Min	**Average**	Max
Annual average returns 24 months after PAUSE	Short-term US Treasuries	16.5%	11.3%	7.2%	8.7%	6.2%	3.7%	3.7%	**9.0%**	16.5%
	Long-Term US Treasuries	41.6%	14.2%	11.0%	10.1%	9.7%	17.6%	9.7%	**17.4%**	41.6%
	Investment Grade (IG) bonds	27.7%	12.3%	10.4%	11.5%	4.9%	12.9%	4.9%	**13.3%**	27.7%
	High Yield bonds (HY)	26.4%	0.9%	15.0%	2.6%	4.5%	11.2%	0.9%	**10.1%**	26.4%
	Equity (S&P 500)	25.9%	13.5%	31.1%	-12.4%	0.4%	24.9%	-12.4%	**13.9%**	25.9%
Annual average returns 24 months after PIVOT	Short-term US Treasuries	14.4%	9.8%	6.7%	7.1%	5.5%	2.5%	2.5%	**7.6%**	14.4%
	Long-Term US Treasuries	32.2%	7.0%	10.4%	10.5%	10.3%	8.0%	7.0%	**13.1%**	32.2%
	Investment Grade bonds (IG)	22.8%	9.5%	9.5%	9.3%	6.8%	7.0%	6.8%	**10.8%**	22.8%
	High Yield bonds (HY)	24.8%	6.3%	13.4%	-0.1%	4.3%	7.6%	-0.1%	**9.4%**	24.8%
	Equity (S&P 500)	23.4%	8.4%	34.9%	-18.7%	-15.4%	23.7%	-18.7%	**9.4%**	34.9%

Valuations are back to normal

Returns on assets with greater sensitivity to the economic cycle (lower credit quality high yield and equities) have a high degree of performance dispersion in the final phases of monetary tightening depending on the level of deceleration in economic activity. If we focus on the average yield of high yield bonds and compare it to higher credit quality alternatives, we observe that the increase in credit risk does not seem to be rewarded at this stage of the cycle. **Investors may want to be cautious in positioning in lower credit quality corporate bonds until there is more clarity on the growth outlook.**

The combination of tight monetary policies and sluggish growth momentum is not typically a good mix for cyclical assets and risk premiums need to be adjusted upwards. In the graph below, **we have carried out an exercise to parameterize the valuation levels of the different financial assets to allow us to have a homogeneous relative valuation.** To do this, we have compared the current valuation levels with the historical distribution of valuation ratios for the same asset and classified them in terms of percentiles. **A high percentile indicates that the current yield on that instrument is at the high end (more attractive) of its own historical distribution of returns.** The selection of the valuation ratio depends on the type of instrument. In equities we have used a weighted average (dividend yield, multiples over book value and earnings).

The first conclusion we draw from this exercise is the **general improvement in valuation levels that has occurred over the last twelve months as a result of the normalization of interest rates.** This abrupt readjustment has allowed the investment community to move away from the TINA ("There Is No Alternative") environment, where the absence of returns on risk-free assets meant that risk positions had to be increased in order to obtain some return. The second conclusion validates the cautious positioning in cyclical assets, as **the valuation levels of the most conservative assets (government bonds and investment grade) are higher than those of the most growth-sensitive assets (high yield bonds and equities).**

We maintain a preference for quality (both in terms of balance sheet strength and revenue stability) over growth

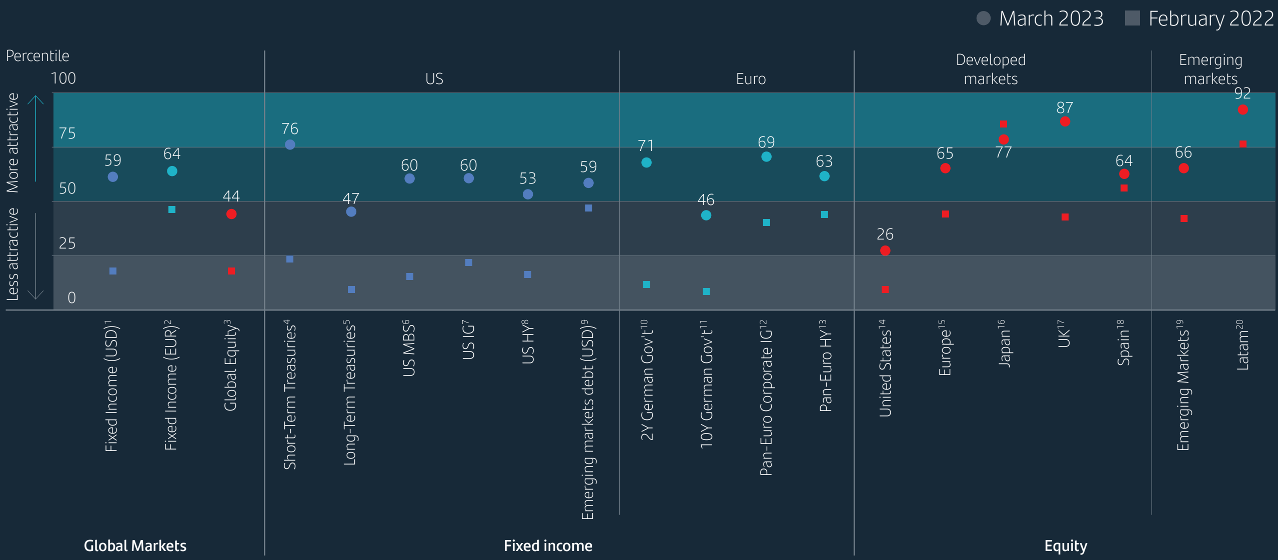
All assets have improved their valuation metrics as a result of the market adjustment in 2022

The relative valuation of the different assets supports the cautious positioning in risky assets

Asset valuation levels in general have improved significantly following the interest rate adjustment

Source: Bloomberg and Santander. Data as of 3/23/2023

Lower-risk options no longer compare unfavorably in terms of valuation



The valuation of each asset is based on its historical levels. For fixed income, the nominal and real levels of interest rates and the spread against the risk-free asset are taken into account. For equities, the price/earnings ratio, dividend yield and price/book value are taken into account. (1) Bloomberg US Agg Total Return Value Unhedged USD (2) Bloomberg Pan-European Aggregate Total Return Index Value Un (3) MSCI ACWI (4) US 2Y Treasury (5) US 10Y Treasury (6) Bloomberg US MBS Index Total Return Value Unhedged USD (7) Bloomberg US Corporate Total Return Value Unhedged USD (8) Bloomberg US Corporate High Yield Total Return Index Value Unhedged USD (9) Bloomberg EM USD Aggregate Total Return Index Value Unhedged (10) GERMANY GOVT BND 2 YR BKO (11) GERMANY GOVT BND 10 YR DBR (12) Bloomberg Pan European Aggregate Corporate TR Index Value Un (13) Bloomberg Pan-European High Yield Total Return Index Value U (14) S&P500 (15) Stoxx 600 Europe (16) Nikkei (17) FTSE 100 (18) IBEX 35 (19) MSCI EM (20) MSCI Latam.

Bond-stock market diversification works again

The chart below allows us to re-validate these two conclusions: generalized improvement in valuation and greater support from a historical comparison for fixed income. We plotted the evolution over the last decades of corporate investment grade yield in US$ and compared it with the earnings yield of the S&P 500. This comparison allows us to observe that **the end of ultra-expansionary monetary policy has made it possible to re-establish the valuation parameters that existed before the Great Financial Crisis.** Investors with focus on capital protection can once again obtain attractive nominal returns relative to expected inflation levels, and relative to other financial assets.

Quality fixed income yields offer again value in absolute and relative terms

Another positive aspect of fixed income investment has to do with the recovery of its attribute as a portfolio diversifier. One of the most negative factors for investors in 2022 was the inability to diversify risk in portfolios due to the positive correlation of the two main assets: both bond and equity prices behaved similarly in the crisis. The volatility experienced by the markets in March 2023 has shown that the normalization of interest rates has brought the positive consequence that the duration attribute of fixed income portfolios is once again working as a stabilization mechanism. **Diversification is back and this makes it possible to improve the risk-return profile of balanced investment solutions.**

Investors are once again enjoying the benefit of diversification in balanced portfolios

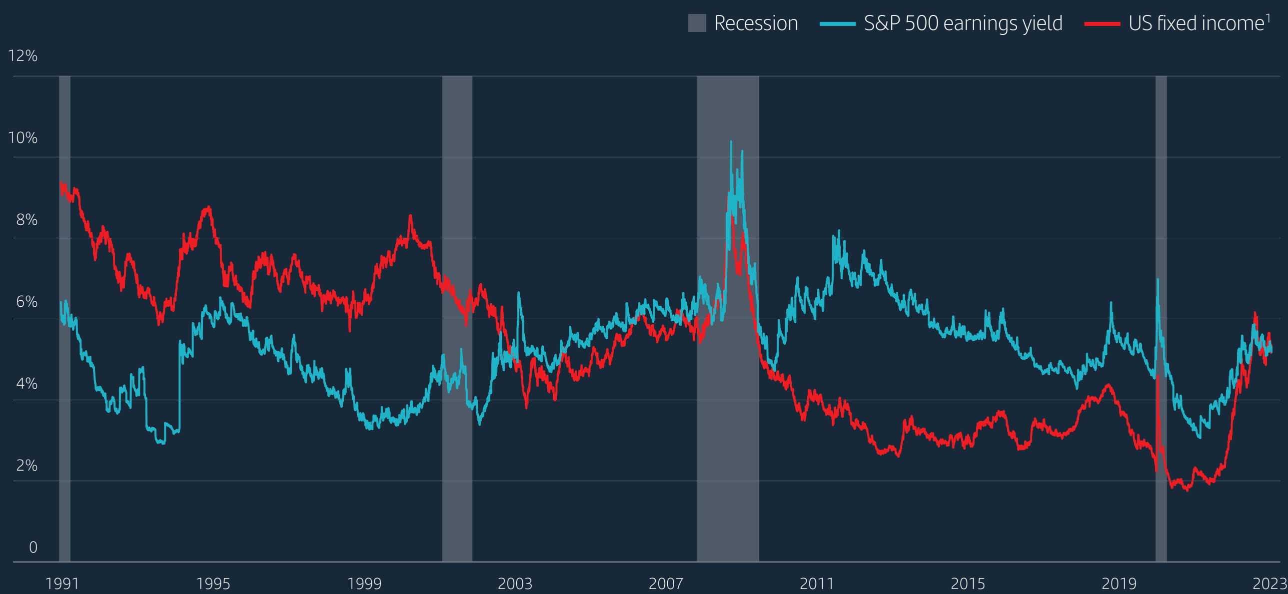
Investors with longer investment horizon and higher risk tolerance should maintain a significant allocation to equity despite our cautious cyclical outlook. As we saw in the chart on the previous page, in some geographical areas (Europe and Emerging Markets mainly) the adjustment of the stock markets has brought the relative valuation back to very attractive levels. In parallel, we are witnessing innovations and structural changes in many sectors and this offers interesting growth opportunities. **Thematic investments can help investors seek long term growth, while expressing a view on the innovative companies (artificial intelligence, energy transition, green hydrogen...) that can shape the global economic future.**

The potential of disruptive themes (AI, renewable energy, etc.) is even greater in environments with low growth rates

Investors no longer need to stretch out of bonds for income

Source: Bloomberg. Data as of 3/23/2023

Yields have come a long way and fixed income is attractive again



(1) Bloomberg U.S. Corporate Investment Grade Index

Appendix: Tables.

Returns of main assets in last 10 years.

Source: Bloomberg.

Data as of 03/31/2023							Returns			Annualized returns
	2017	2018	2019	2020	2021	2022	YTD	3 years	5 years	10 years
Short-term (USD) (1)	**1.0%**	**1.9%**	**2.2%**	**0.4%**	**0.1%**	**1.7%**	**1.1%**	**1.0%**	**1.4%**	**0.9%**
Short-term (EUR) (2)	**-0.4%**	**-0.4%**	**-0.4%**	**-0.5%**	**-0.5%**	**0.1%**	**0.6%**	**-0.1%**	**-0.2%**	**-0.2%**
Global Fixed Income (3)	**7.4%**	**-1.2%**	**6.8%**	**9.2%**	**-4.7%**	**-16.2%**	**2.9%**	**-3.6%**	**-1.4%**	**0.1%**
Fixed Income (USD) (4)	**3.5%**	**0.0%**	**8.7%**	**7.5%**	**-1.5%**	**-13.0%**	**2.5%**	**-3.0%**	**0.8%**	**1.3%**
Sovereign (USD) (5)	1.1%	1.4%	5.2%	5.8%	-1.7%	-7.8%	2.0%	-2.4%	1.0%	0.9%
Corporates (USD) (6)	6.4%	-2.5%	14.5%	9.9%	-1.0%	-15.8%	2.8%	-0.6%	1.5%	2.2%
High Yield (USD) (7)	7.5%	-2.1%	14.3%	7.1%	5.3%	-11.2%	2.7%	5.8%	3.0%	4.0%
Fixed Income (EUR) (8)	**0.7%**	**0.4%**	**6.0%**	**4.0%**	**-2.9%**	**-17.2%**	**1.7%**	**-5.0%**	**-2.1%**	**0.7%**
Sovereign (EUR) (9)	0.2%	1.0%	6.8%	5.0%	-3.5%	-18.5%	2.1%	-5.8%	-2.2%	1.0%
Corporates (EUR) (10)	2.4%	-1.3%	6.2%	2.8%	-1.0%	-13.6%	1.4%	-1.7%	-1.3%	1.0%
High Yield (EUR) (11)	6.2%	-3.6%	12.3%	1.8%	4.2%	-11.1%	2.7%	4.7%	1.0%	3.6%
Emerging Global Fixed Income (USD) (12)	**8.2%**	**-2.5%**	**13.1%**	**6.5%**	**-1.7%**	**-15.3%**	**1.7%**	**0.1%**	**0.2%**	**2.0%**
LatAm (USD) (13)	10.6%	-4.9%	12.3%	4.5%	-2.5%	-13.2%	1.3%	2.5%	-0.6%	1.6%
MSCI World (USD)	**20.1%**	**-10.4%**	**25.2%**	**14.1%**	**20.1%**	**-19.5%**	**6.0%**	**13.8%**	**6.0%**	**6.8%**
S&P 500 (USD)	19.4%	-6.2%	28.9%	16.3%	26.9%	-19.4%	5.5%	15.5%	8.9%	9.9%
MSCI Europe (EUR)	7.3%	-13.1%	22.2%	-5.4%	22.4%	-11.9%	7.2%	13.1%	4.1%	4.2%
MSCI Emerging Markets (USD)	34.3%	-16.6%	15.4%	15.8%	-4.6%	-22.4%	3.1%	5.8%	-3.4%	-0.5%
MSCI Asia Pac. ex-Japan (USD)	37.0%	-13.9%	19.2%	22.4%	-2.9%	-17.5%	3.5%	9.1%	0.9%	3.7%
MSCI Latin America (USD)	20.8%	-9.3%	13.7%	-16.0%	-13.1%	-0.1%	3.6%	11.7%	-6.2%	-5.3%

(1) Barclays Benchmark Overnight USD Cash Index; 2) Barclays Benchmark 3mEUR Cash Index; 3) Bloomberg Barclays Global Aggregate Total Return Index Value Unhedged USD; 4) Bloomberg Barclays US Agg Total Return Value Unhedged USD; 5) Bloomberg Barclays US Intermediate Treasury TR Index Value Unhedged SD; 6) Bloomberg Barclays US Corporate Total Return Value Unhedged USD; 7) Bloomberg Barclays US Corporate High Yield Total Return Value Unhedged USD; 8) Bloomberg Barclays EuroAgg Total Return Index Value Unhedged EUR; 9) Bloomberg Barclays EuroAgg Treasury Total Return Index Value Unhedged EUR; 10) Bloomberg Barclays Euro Aggregate Corporate Total Return Index Value Unhedged EUR; 11) Bloomberg Barclays Pan-European Aggregate High Yield TR Index Value Unhedged EUR; 12) Bloomberg Barclays EM Aggregate Total Return Value Unhedged USD; 13) Bloomberg Barclays Emerging Markets LatAm Total Return Value Unhedged USD

Equities indices.

Source: Bloomberg.

Data as of 03/31/2023

			Change	Last 10 years			Return			Annualized returns			
		Last Price	12 months	Low	Range	High	2021	2022	YtD	1 year	3 years	5 years	10 years
US	S&P 500	4,051		1,598		4,766	26.9%	-19.4%	5.5%	-10.6%	15.5%	8.9%	9.9%
	DOW JONES INDUS.	32,859		14,810		36,338	18.7%	-8.8%	-0.9%	-5.2%	13.7%	6.4%	8.5%
	NASDAQ	12,013		3,329		15,645	21.4%	-33.1%	14.8%	-15.5%	15.6%	11.2%	13.9%
Europe	Stoxx 50	3,914		2,605		3,914	22.8%	-4.4%	7.2%	5.5%	13.2%	5.7%	3.8%
	Eurozone (EuroStoxx)	4,285		2,603		4,298	21.0%	-11.7%	13.0%	9.8%	15.7%	5.0%	5.0%
	Spain (IBEX 35)	9,207		6,452		11,521	7.9%	-5.6%	11.9%	9.0%	11.4%	-0.8%	1.5%
	France (CAC 40)	7,263		3,739		7,268	28.9%	-9.5%	12.2%	9.1%	18.4%	7.0%	6.9%
	Germany (DAX)	15,522		7,914		15,885	15.8%	-12.3%	11.5%	7.7%	16.5%	5.1%	7.1%
	United Kingdom (FTSE 100)	7,620		5,577		7,876	14.3%	0.9%	2.3%	1.4%	11.1%	1.5%	1.7%
	Italy (MIB)	27,021		15,239		27,478	23.0%	-13.3%	14.0%	8.0%	17.0%	3.8%	5.8%
	Portugal (PSI 20)	6,025		3,945		7,608	13.7%	2.8%	5.2%	-0.2%	14.8%	2.2%	0.3%
	Switzerland (SMI)	11,032		7,683		12,876	20.3%	-16.7%	2.8%	-9.3%	6.3%	4.8%	3.5%
LatAm	Mexico (MEXBOL)	54,199		34,555		56,537	20.9%	-9.0%	11.8%	-4.1%	16.6%	3.3%	2.1%
	Brazil (IBOVESPA)	103,713		40,406		126,802	-11.9%	4.7%	-5.5%	-13.6%	11.6%	4.0%	6.3%
	Argentina (MERVAL)	251,639		2,976		253,549	63.0%	142.0%	24.5%	176.6%	117.7%	51.9%	53.9%
	Chile (IPSA)	5,309		3,439		5,855	3.1%	22.1%	0.9%	7.5%	17.0%	-0.9%	1.8%
Asia	Japan (NIKKEI)	28,041		13,389		29,453	4.9%	-9.4%	7.5%	0.8%	13.7%	5.5%	8.5%
	Hong Kong (HANG SENG)	20,415		14,687		32,887	-14.1%	-15.5%	3.2%	-7.2%	-4.1%	-7.5%	-0.9%
	South Korea (KOSPI)	2,477		1,755		3,297	3.6%	-24.9%	10.8%	-10.2%	13.0%	0.3%	2.1%
	India (Sensex)	58,669		18,620		63,100	22.0%	4.4%	-3.6%	0.2%	27.3%	12.2%	12.0%
	China (CSI)	4,047		2,146		5,352	-5.2%	-21.6%	4.5%	-4.2%	3.3%	0.7%	5.0%
World	MSCI WORLD	2,760		1,434		3,232	20.1%	-19.5%	6.0%	-9.6%	13.8%	6.0%	6.8%

Equities by factor and sector.

Source: Bloomberg.

Data as of 03/31/2023

			Change	Last 10 years			Return			Annualized returns				Ratios	
		Last Price	12 months	Low	Range	High	2021	2022	YtD	1 year	3 years	5 years	10 years	PE Ratio	Divi-dend Yield
	MSCI World	2,760		1,434		3,232	20.1%	-19.5%	6.0%	-9.6%	13.8%	6.0%	6.8%	16.09	2.23
Factor	MSCI World High Dividend Yield	1,340		969		1,447	12.6%	-7.4%	0.0%	-6.8%	9.1%	2.4%	3.0%	13.08	3.90
	MSCI World Momentum	3,155		1,214		3,978	14.6%	-17.8%	-1.9%	-14.5%	10.7%	7.4%	10.2%	12.29	2.78
	MSCI World Quality	3,446		1,183		4,058	25.7%	-22.2%	9.2%	-7.2%	15.1%	10.9%	11.3%	19.97	1.82
	MSCI World Minimum Volatility	4,323		2,099		4,730	14.3%	-9.8%	1.3%	-5.8%	7.7%	5.5%	7.2%	17.10	2.63
	MSCI World Value	11,060		6,013		11,827	21.9%	-6.5%	0.0%	-5.9%	15.2%	4.8%	6.4%	12.04	3.52
	MSCI World Small Cap	582		283		705	15.8%	-18.8%	3.0%	-10.5%	17.1%	4.2%	7.5%	15.60	2.35
	MSCI World Growth	7,788		2,823		9,693	21.2%	-29.2%	13.5%	-11.1%	15.1%	10.1%	10.7%	23.74	0.99
Sector	Energy	432		164		464	40.1%	46.0%	-3.7%	7.6%	38.2%	6.8%	2.9%	8.10	4.67
	Materials	537		229		590	16.3%	-10.7%	4.8%	-13.0%	19.0%	6.0%	5.7%	13.44	3.57
	Industrials	469		212		509	16.6%	-13.2%	6.0%	-7.4%	14.9%	4.6%	7.7%	17.54	2.12
	Consumer Discretionary	452		181		595	17.9%	-33.4%	14.1%	-25.4%	10.7%	4.8%	8.6%	19.13	1.52
	Consumer Staples	449		232		465	13.1%	-6.1%	2.9%	-2.6%	9.3%	5.9%	6.3%	19.11	2.65
	Health Care	478		185		518	19.8%	-5.4%	-2.5%	-2.1%	13.2%	10.5%	10.5%	17.46	1.81
	Financials	226		124		263	27.9%	-10.2%	-2.3%	-8.8%	17.2%	3.5%	6.6%	10.12	3.55
	Information Technology	563		112		682	29.8%	-30.8%	19.4%	-23.0%	13.5%	12.4%	15.6%	24.56	0.97
	Real Estate	384		260		517	28.7%	-25.1%	-0.9%	-20.5%	5.5%	1.9%	3.3%	23.51	4.20
	Communication Services	149		94		220	14.4%	-36.9%	16.0%	-29.6%	2.3%	1.5%	3.4%	16.11	1.42
	Utilities	312		165		331	9.8%	-4.7%	0.0%	-5.9%	7.5%	6.9%	6.5%	15.92	3.71

Government Bonds.

Source: Bloomberg.

Data as of 03/31/2023

		Interest rate			Change	Last 10 years			10 years			Yield curve
	Rating (S&P)	C. Bank*	2 years	10 years	12 months	Low	Range	High	Month	YtD	YoY	10-2 years
Developed												
U.S.	AA+	5.00%	4.12%	3.55%		0.53%		4.05%	-37	204	121	-0.57
Germany	AAA	3.00%	2.78%	2.37%		-0.70%		2.65%	-28	255	182	-0.41
France	AA	3.00%	2.92%	2.88%		-0.40%		3.12%	-24	268	190	-0.04
Italy	BBB	3.00%	3.28%	4.23%		0.54%		4.72%	-25	306	219	0.95
Spain	A	3.00%	3.04%	3.41%		0.05%		4.77%	-19	284	197	0.36
United Kingdom	AA	4.25%	3.46%	3.52%		0.10%		4.09%	-31	255	191	0.06
Greece	BB+	3.00%	n.d.	4.30%		0.61%		15.42%	-14	296	163	n.d.
Portugal	BBB+	3.00%	2.82%	3.22%		0.03%		6.73%	-29	276	187	0.41
Switzerland	AAA	1.50%	1.18%	1.24%		-1.05%		1.58%	-20	139	66	0.05
Poland	A-	6.75%	6.01%	6.05%		1.15%		8.34%	-48	241	86	0.04
Japan	A+	-0.10%	-0.06%	0.35%		-0.27%		0.86%	-16	28	13	0.40
Emerging Markets												
Brazil	BB-	13.75%	11.97%	12.81%		6.49%		16.51%	-64	197	120	0.84
Mexico	BBB	11.00%	10.43%	8.87%		4.49%		9.85%	-46	130	60	-1.56
Chile	A	11.25%	6.49%	5.17%		2.19%		6.79%	n.d.	n.d.	n.d.	n.d.
Argentina	CCC-	78.00%	n.d.	n.d.		0.00%		0.00%	n.d.	n.d.	n.d.	n.d.
Colombia	BB+	12.75%	10.45%	11.94%		4.88%		13.79%	-132	375	n.d.	1.49
Turkey	B	8.50%	11.96%	n.d.		6.21%		23.00%	n.d.	n.d.	n.d.	n.d.
Russia	A+	2.64%	2.37%	2.85%		2.51%		4.58%	-6	8	7	0.48
India	BBB-	6.50%	7.17%	7.29%		5.84%		8.86%	-14	83	45	0.11

*Central Bank lending facility, except in Eurozone countries, where the marginal deposit facility is used.

Currencies.

Source: Bloomberg.

Data as of 03/31/2023

	Last	Change	Last 10 years			Return	Annualized returns			
	Price	12 months	Low	Range	High	YtD	1 year	3 years	5 years	10 years
EUR/USD	1.0903		0.98		1.39	1.8%	-1.5%	-0.4%	-2.4%	-1.6%
EUR/GBP	0.88		0.70		0.92	0.6%	4.4%	-0.4%	0.0%	0.4%
EUR/CHF	1.00		0.97		1.24	-0.6%	2.5%	2.1%	3.4%	2.0%
EUR/JPY	145		114		148	3.4%	-7.2%	-6.4%	-2.0%	-1.8%
EUR/PLN	4.67		4.04		4.86	0.2%	-0.6%	-1.0%	-2.1%	-1.1%
GBP/USD	1.24		1.12		1.71	2.6%	-5.7%	-0.1%	-2.4%	-2.0%
USD/CHF	0.91		0.88		1.03	1.2%	1.0%	1.6%	0.9%	0.4%
USD/JPY	133		97		149	-1.5%	-8.6%	-6.8%	-4.4%	-3.4%
USD/MXN	18.09		12.13		24.17	7.8%	9.8%	9.6%	0.1%	-3.8%
USD/ARS	208.58		5.19		208.58	-15.1%	-46.8%	-32.4%	-37.3%	-31.0%
USD/CLP	790		472		969	7.8%	-0.5%	2.6%	-5.2%	-5.0%
USD/BRL	5.09		2.00		5.75	3.6%	-6.9%	0.6%	-8.3%	-8.8%
USD/COP	4.623		1.824		4.940	5.0%	-18.4%	-4.2%	-9.6%	-8.9%
USD/CNY	6.86		6.05		7.31	0.5%	-7.6%	1.1%	-1.8%	-1.0%
EUR/SEK	11.28		8.54		11.37	-1.1%	-7.8%	-0.6%	-1.8%	-2.9%
EUR/NOK	11.32		7.60		11.48	-7.2%	-14.0%	1.0%	-3.1%	-4.0%

Commodities.

Source: Bloomberg.

Data as of 09/30/2022

	Last	Change	Last 10 years			Return			Annualized returns		
	Price	12 months	Low	Range	High	2021	2022	YTD	3 years	5 years	10 years
Crude Oil (Brent)	77.7		21		120	51.4%	9.7%	-8.5%	52.2%	4.0%	-10.7%
Crude Oil (W. Texas)	74.4		19		115	58.7%	4.2%	-7.3%	54.7%	4.6%	-8.5%
Gold	1.982.6		1.060		1.979	-3.5%	-0.1%	8.6%	6.9%	14.4%	7.5%
Copper	9.001.0		4.561		10.375	25.2%	-13.9%	7.5%	23.6%	10.3%	6.1%
CRB Index	264.4		117		317	38.5%	19.5%	-4.8%	29.5%	10.6%	-3.7%
Natural Gas (USA)	2.1		2		6	34.2%	29.4%	-46.3%	-2.0%	-8.9%	-29.1%
Natural Gas (Europe)	43.7		14		206	130.1%	132.9%	-44.5%	46.1%	41.8%	n.d.

"Periodic table" of asset returns.

Asset Class	Reference Index	Calendar Year Returns										
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
US Equities	S&P 500 TR	54.4% Japan Equities	71.3% Eurozone Government	12.1% Japan Equities	14.8% Global High Yield	37.3% Emerging Market Equities	3.3% Spain Government	0.3% US Equities	18.4% US Equities	38.5% Commodities	22.0% Commodities	13.4% Spain Equities
Japan Equities	Topix TR	32.4% US Equities	61.3% Spain Government	6.4% Europe Equities	12.0% US Equities	22.4% Global Equities	0.1% Eurozone Government	0.3% Europe Equities	18.3% Emerging Market Equities	28.7% US Equities	0.1% Liquidity	12.4% Europe Equities
Spain Equities	Ibex35 TR	27.8% Spain Equities	13.7% US Equities	1.4% US Equities	11.2% Emerging Market Equities	22.2% Japan Equities	-0.4% Liquidity	0.3% Global Equities	0.2% Global Equities	23.2% Europe Equities	-2.0% Spain Equities	6.5% Japan Equities
Emerging Markets Equities	MSCI EM TR	26.7% Global Equities	10.3% Japan Equities	-0.1% Liquidity	9.7% Commodities	21.8% US Equities	-1.2% Europe IG	0.2% Emerging Market Equities	8.0% Global High Yield	21.8% Global Equities	-2.5% Japan Equities	6.1% Global Equities
Europe Equities	Eurostoxx50 TR	21.5% Europe Equities	8.6% Spain Equities	-0.5% Europe IG	7.5% Global Equities	11.3% Spain Equities	-3.3% Global High Yield	0.2% Japan Equities	0.1% Japan Equities	12.7% Japan Equities	-9.5% Europe Equities	6.0% US Equities
Commodities	Commodity RB TR	21.1% Spain Government	8.3% Europe IG	-0.8% Global Equities	6.6% Eurozone Government	10.2% Global High Yield	-4.4% US Equities	0.2% Spain Equities	6.4% Eurozone Government	10.8% Spain Equities	-13.2% Global High Yield	3.48% Emerging Market Equities
Global Equities	MSCI World TR	8.0% Global High Yield	4.9% Global Equities	-3.6% Spain Equities	5.7% Spain Government	9.2% Europe Equities	-8.7% Global Equities	0.1% Global High Yield	4.4% Spain Government	1.4% Global High Yield	-14.4% Europe IG	1.8% Global High Yield
Europe IG	ERL0 TR	2.4% Europe IG	4.0% Europe Equities	-4.2% Global High Yield	4.8% Europe IG	2.5% Europe IG	-10.7% Commodities	0.1% Commodities	2.7% Europe IG	-0.5% Liquidity	-17.7% Spain Government	1.8% Spain Government
Liquidity EUR	Eonia TR	0.1% Liquidity	0.1% Liquidity	-10.5% Spain Government	3.7% Europe Equities	1.7% Spain Government	-11.5% Spain Equities	0.1% Spain Government	-0.5% Liquidity	-1.1% Europe IG	-17.8% Eurozone Government	1.8% Eurozone Government
Global High Yield	HW00 TR	-2.6% Emerging Market Equities	-0.1% Global High Yield	-16.3% Eurozone Government	2.6% Spain Equities	1.7% Commodities	-12.0% Europe Equities	0.1% Eurozone Government	-3.2% Europe Equities	-2.5% Emerging Market Equities	-18.1% US Equities	1.3% Europe IG
Spain Government	SPAIN 10 YR	-5.0% Commodities	-2.2% Emerging Market Equities	-14.9% Emerging Market Equities	0.6% Japan Equities	-0.2% Eurozone Government	-14.6% Emerging Market Equities	0.1% Europe IG	-0.1% Commodities	-2.7% Eurozone Government	-18.1% Global Equities	0.6% Liquidity
Eurozone Government	GERMANY 10 YR	-46.6% Eurozone Government	-17.9% Commodities	-23.4% Commodities	-0.3% Liquidity	-0.4% Liquidity	-16.0% Japan Equities	0.0% Liquidity	-0.1% Spain Equities	-3.1% Spain Government	-20.09% Emerging Market Equities	-3.7% Commodities

+
Returns
-

*Data as of 03/31/2023
*Total return indices track both the capital gains as well as any cash distributions, such as dividends or interest, attributed to the components of the index.

Global team.

Investment Strategy.

Santander Private Banking.

Private Banking

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