

Cash and fixed income assumptions

MAIN ASSUMPTIONS

More supportive growth in the US, and secular deflationary trends and "Common Prosperity" ambitions in China, should put upward and downward pressure on rates, respectively.

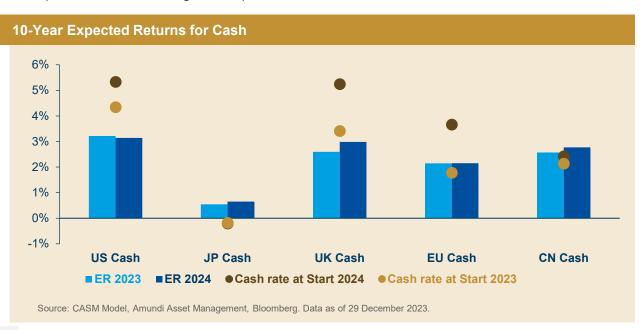
We expect a broad reduction in expected returns for bond indices and term premiums, compared to December 2022 forecasts, as a consequence of less attractive valuations, but expected returns remain well above the levels of the past decade.

We see a marginal reduction in returns across the credit assets space. High Yield (HY) and Emerging Market (EM) bond spreads are expected to widen towards equilibrium levels. However, EM bond returns are still expected to remain highly attractive.

Macro themes affecting fixed income assumptions: Our updated macro central scenario continues to envisage a delayed and inefficient energy transition, where countries implement net zero policies in an asynchronous fashion, causing additional costs in the short to medium term compared with a scenario where this transition is not taking place. This inevitably puts upward pressure on inflation, which is expected to stay slightly above central banks' targets on average over the long term for developed market (DM) countries. In EM, especially China, we see inflation picking up in the medium term and moderating again to below historical levels in the long run, as secular trends (ageing population, consumption shifts, etc.) prevail. These macro considerations, together with the expectations on central bank balance sheets' dynamics, will put upward pressure on rates resulting in higher long-term yield levels for the US and UK.

Cash

Assumptions: We have revised equilibrium cash rates up to 3% for the US and UK. Meanwhile, we kept the equilibrium levels unchanged for Japan and the Eurozone and moved it lower for China.



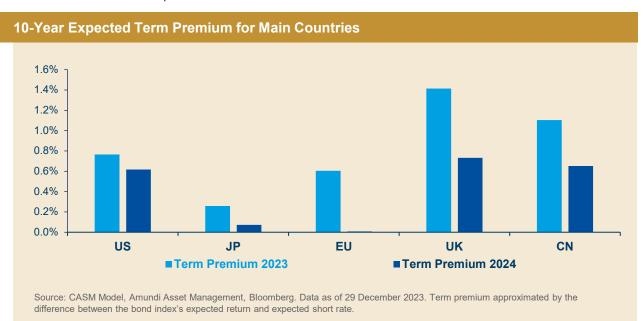


Expected returns 10-year expected returns for cash are pretty much aligned with last year's expectations, notwithstanding the fact that the pattern we expect from current yields to the long-term targets has changed because of the different starting point, the dynamics of monetary policy and long-term changes. We expect cash yields to be around their respective long-term levels at the end of the decade, except for China where we assume a slower normalisation towards lower cash rates, also driven by inflation dynamics.

Government Bonds

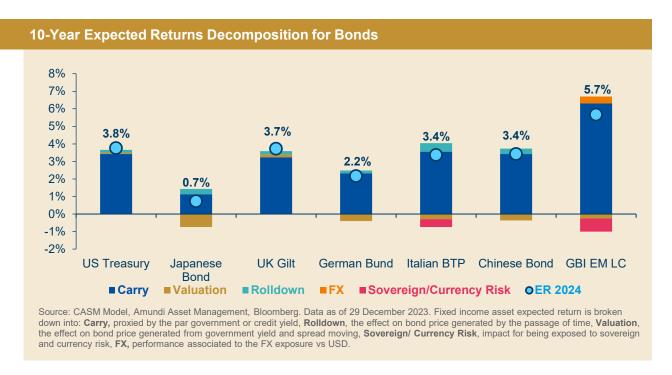
Assumptions: Moving to long rates and equilibrium levels were upgraded versus our December 2022 assumptions by roughly 50 bps in the US and UK. We trimmed equilibrium Chinese yields by 70 bps as a consequence of secular forces weighing on growth and inflation which will shift the entire curve level. Eurozone and Japan long-rates targets are unchanged compared to last year's assumptions. Overall, the impact of the new assumptions on long-term expected returns for govies is marginal. Looking at Eurozone rates, while we confirm the spread levels for semi-core (France) and Spain, our assumptions on the Italian BTP saw a slight widening of the sovereign spread over German Bunds in the long term.

We see a reduction in the expected term premium across the board, particularly for European and UK government bonds. Even if UK long interest rates are now very close to our expected equilibrium levels, the slight uptick in expected cash returns and the decrease in bond index return prospects make the premium for holding longer-dated bonds less attractive. Notwithstanding the similar behaviour of US yields, the decrease is less pronounced than in the UK because of lower duration. In the case of European bonds, the term premium reduction is entirely driven by lower expected returns on bonds, while in China the reduction is mostly due to the upward adjustment we expect on yields. Term premiums are almost null for both Euro core and Japanese bonds.



Expected returns: Starting with core DM curves, we expect US Treasuries and UK Gilts to deliver a nominal return of approximately 4% p.a. over a 10-year horizon. German Bunds and Japanese bonds are lagging, penalised by lower carry and relatively expensive long-rate valuations, with expected returns close to 2% and 0.7% respectively. Moving to EM, expectations for China bonds are set at 3.5%, while EM Local Currency (LC) bonds are expected to deliver returns close to 6%, thanks to their high interest rate levels.





With regards to the return attribution, carry is obviously the main contributor to expected returns across the regions. For US and UK curves, a marginal role is played by rolldown and valuation, as rates are close to equilibrium levels. This is not the case for the other core regions (Germany and Japan), where we expect long-term rates to rise from current levels and therefore valuations to represent a headwind for returns. EU periphery (BTP) expected returns are lower because of a small valuation adjustment and negative impacts related to potential sovereign risk.

China bonds' expected returns could be penalised by valuations due to the expected upside normalisation of yields. EM LC bonds are benefitting from large carry and a minor positive contribution from foreign exchange exposure, while sovereign risk is the main return detractor in addition to slightly negative valuations.

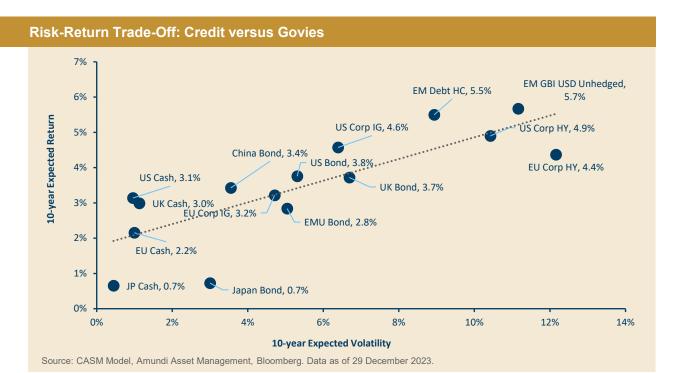
Fixed income markets have continued to experience high volatility. We expect volatility for government yields to remain sustained in the future. An important factor to consider is the lower duration associated with the bond indices versus the latest decade, due to higher average yields. This could help offset the increased volatility associated with the scenario of macro uncertainty that we have embedded.

As a side point, DM government yields have been under pressure since the start of 2024. We acknowledge that because current levels are significantly higher than our starting points, our estimates on valuation and rolldown would have been different if we ran the update today.

Credit and EM bonds

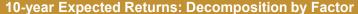
Assumptions: We expect a general decrease in credit expected returns versus last year as the carry is lower and valuations have worsened. At the end of the year, spreads were lower than their long-term level, with the exception of EU IG which is a bit higher than long-term value. Our expectations imply a spread widening in the medium to long term, associated with a normalisation of the risks priced into the credit market. Long-term spread levels are stable compared to last year.

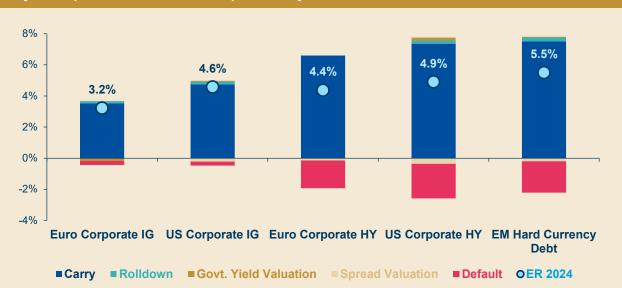




Expected returns: We confirm a **positive outlook** for credit assets, mainly for **high-grade segments** and **EMBI**. Our expectations for **High Yield** are greater than for high quality, but the **advantage is too** small to compensate for the increase in intrinsic risk. 10-year expectations are mainly explained by the carry and default for HY and EM debt, while valuations are less impactful considering the horizon.

Fixed income markets have continued to deliver high volatility, particularly for the government segment, and we expect volatility to pick up for credit.





Source: CASM Model, Amundi Asset Management, Bloomberg. Data as of 29 December 2023.

Fixed income asset expected return is broken down by: **Carry**: proxied by the par government or credit yield, **Valuation**: the effect on bond price generated from government yield and spread moving, **Default**: assumption on the loss from the default, **Others** include Rolldown: the effect on bond price generated by the passage of time and other residual due to not linear components and simulation effect.



Equities

KEY TAKEAWAYS

Expected Returns (ER) for equity are **decreasing** at the aggregate DM level, while they are stable at the EM aggregate level. We confirm a slight **preference for EM vs DM.** This is moderate due to the **higher risk profile for EM** in a portfolio allocation context.

The **US** could generate quite **decent EPS growth**, but the market has **almost priced in what we expect**. Slightly higher EPS and DY and less stretched valuations vs last year **support Pacific and Europe**. **Japan** benefits from **higher buyback** estimates linked to revised corporate governance.

Expected returns on EM equity remain stable compared to last year, but we note some interesting evolutions at country and regional levels. China expectations have been downgraded reflecting our cautious stance on Chinese macro and fundamentals. EM ex China and India will be the areas offering the highest return potential.

Slight preference for EM vs DM.
Downgrade of both the US and China with respect to DM and EM.
EM ex China and India are the new favourites in terms of return expectations.

Macro assumptions and main change versus last year's Capital Market Assumptions (CMA):

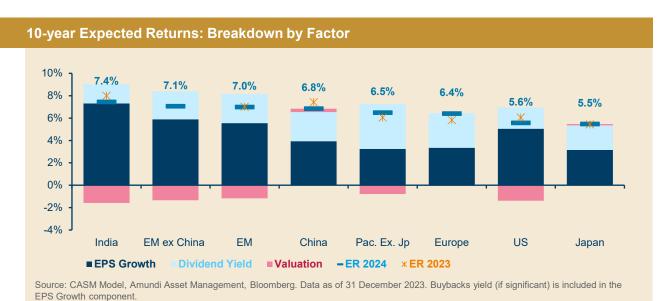
Our macro scenario supports a slightly upward consolidation of equity fundamentals, thanks to the positive contribution from artificial intelligence gains in particular, which leads to better overall Earnings Per Share (EPS) forecasts for the next 10 years. However, valuations are less favourable following the market's strong repricing in 2023, resulting in lower expected returns across the board compared to last year's forecasts.

Valuations have deteriorated particularly in the US. Hence, while we remain optimistic about the potential for continued EPS growth in the US and assume increased support from buybacks (or in line with long-term averages), a 10-year horizon is long enough to assume a catch-up in valuations. However, we note that the US equity market is highly concentrated, and excesses are visible, particularly in the mega caps space. Therefore, an equal-weight approach could offer better return potential.

The **Pacific and Europe** expected returns have increased because of slightly higher EPS growth, dividend yields and improved valuations. The **Japanese** market is currently more fairly valued following last year's strong performance. Our base scenario suggests that demographic and productivity challenges may limit its growth potential, but improvements in corporate governance and increased buybacks could provide some support.

Our scenario on **Chinese** equity is aligned with the prevailing conditions today, characterised by low investor appetite amid regulatory uncertainty and geopolitical risks. We are cautious about Chinese macro and fundamental assumptions (with the most recent update on the long-term inflation environment). While acknowledging the elevated uncertainty, we assume a partial re-emergence of valuations could provide a tailwind, particularly for the onshore market. We anticipate a shift in preferences within the EM basket, with potential growth driven by countries other than China.

Regional dynamics: Our 2024 expected returns ranking sees India, EM ex China and EM at the top with expected returns above 7%, followed by China, Pacific ex Japan and Europe above 6.5%. This ranking shifts when focusing on risk-adjusted returns (see page 22): India remains at the top of the range, while lower expected returns for China compared to last year favours EM ex China: this year's new addition to the universe of asset classes covered.



Next 10 years expected returns vs long-term (LT) history and LT expectations (next 30 years). The last 10 years have been exceptional for some developed markets such as the US and Japan (blue bars in the below chart) and less appealing for EM, with the exception of India. Over the next 10 years (orange bars) we expect a reversal of this trend towards LT historical averages (light blue lines in the chart). Hence, US equity and Japan equity should deliver lower returns, while Emerging Market and China equity should fare better.

Looking at the long-term future (30-year horizon, green bars in the chart), expectations for the US will normalise towards 7%, while Japan should decrease following macro and demographic trends, but remain above the LT history thanks to the structural changes and governance reforms being enacted. Europe emerges as the asset class with the most stable expectations, also thanks to the stable dividend contribution (which is less volatile vs EPS). Looking at EM equities, return expectations will deteriorate according to the macro scenario (around 6% ER on an annualised basis, in local currency). China equity will see 30-year return expectations slowing to reflect the transition towards a structurally lower growth paradigm. India will also experience a slowdown in return expectations moving towards the 30-year horizon, amid changes in demographics and lower long-term growth. EM ex China preference vs EM will be confirmed and even amplified moving towards the 30-year horizon.





Source: CASM Model, Amundi Asset Management, Bloomberg. Data as of 31 December 2023. *LT Average is the historical 30-year annualised return for DM and 20-years for EM due to shorter time series availability.

Foreign Exchange

KEY TAKEAWAYS

The main factors shaping our foreign exchange (FX) outlook are unchanged from last year. Most FX pairs should follow the pattern of lower expected cross-sectional inflation volatility.

The Swiss Franc (CHF) is the only expensive G10 currency versus the US dollar (USD), while most others still trade at a relative discount: these gaps should gradually close in the long run.

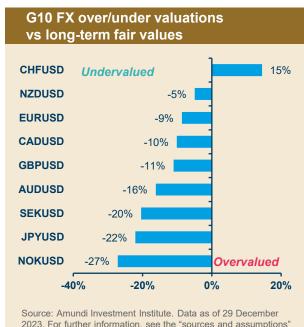
Strong US growth and productivity gains relative to the world economy are supporting the appetite for the US dollar (USD) in the short term. While we acknowledge the risks of a stronger USD in the short term, most of this positive growth outlook already seems priced in, and we don't believe the greenback will extend much further from current levels in the long term.

The post-pandemic reopening and global supply chain bottlenecks in 2021 induced a rapid increase in cost inflation, with broader commodities indices surging and peaking in 2022. Commodity-importing countries experienced a negative terms of trade (TOT) shock and a steep increase in production costs, which in the Eurozone were already running at 31% year-on-year a month before the invasion of Ukraine. Given that FX reflects relative dynamics, that was sufficient to push USD valuations higher.

2024 paints a very different picture: energy prices, and therefore producer prices, are substantially lower, G10 importers experienced a positive TOT shock throughout 2023 and the sharp drop in Eurozone productivity has gradually reversed since August 2022. The USD's valuation has subsequently dropped and has an average premium of around 12% relative to other G10 currencies. Within this group, the Norwegian Krone (NOK) and the Swedish Krona (SEK), the Japanese Yen (JPY) and the Australian Dollar (AUD) exhibit more than a 21% discount on average, whereas the Euro (EUR), the British Pound (GBP) and the Canadian Dollar (CAD) exhibit a more limited upside.

We expect the USD will maintain its international role as the dominant reserve and trade currency over our long-term capital market assumptions horizon. However, there are a few challenges in sight that can accelerate the currency's mean reversion to fair valuation levels:

- Over the last decade, international financial flows have moved to the US thanks to its growth potential and, importantly, the huge amount of negativeyielding debt in the rest of the world. The post-pandemic world is experiencing a regime shift, and some countries may be less inclined to finance the US in the long term.
- The USD is used extensively to finance global trade and financial transactions, reflected in international banking activities. While there is no credible alternative at this moment, rapid technological advances and the changing geopolitical landscape imply less dependence on the USD in the future. In fact, the USD's wide use is not matched by the relatively contained US share of global GDP and world trade.



2023. For further information, see the "sources and assumptions" section



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SOURCES AND ASSUMPTIONS

Sources and assumptions

Sources of CMA: CMA: Amundi Asset Management CASM Model, Amundi Asset Management Quant Solutions and Amundi Investment Institute Teams, Bloomberg. Macro figures as of last release. Starting date as of 29 December 2023. Equity returns based on MSCI indices. Reference duration are average figures. If not otherwise specified, expected returns are geometric annualized average total returns at the specific horizon. EM Debt HC, Global Infrastructure and Hedge Funds are in USD, all other indices are in local currency. Returns on credit assets are comprehensive of default losses. Real estate refer to all property unlevered real estate. The expected returns do not consider the potential alpha, generated by portfolio management that can be significant above all for real and alternative assets. Those returns are gross of fees, except Private equity and Infrastructure returns that are net of fees.

The arithmetic average returns are derived using the price generated by our simulation engine. By definition, the arithmetic mean is always greater than or equal to the geometric mean. In particular, higher volatility of returns and higher frequency of returns and / or a longer time horizon will increase the difference between the two measures.

Simulated volatilities are calculated on simulated prices over a 10-year horizon.

Expected returns are calculated on Amundi central scenario assumptions, which include climate transition. Forecast and fair values up to a 3-year horizon provided by Amundi Investment Institute Research team (macro, yields, spread and equity).

Forecasts for annualised returns are based upon estimates and reflect subjective judgments and assumptions. These results were achieved by means of a mathematical formula and do not reflect the effect of unforeseen economic and market factors on decision-making. The forecast returns are not necessarily indicative of future performance.

Data sources: Bloomberg, MSCI, Edhec Infra, Cambridge Associates, Global Financial Data.

Sources of sectoral expected returns: The expected returns of sectoral indices consider: 1. long-run earnings growth, 2. expected change in valuation and 3. the income component. Long-run earnings growth: for sectoral indices we consider two distinct periods. The first period (2023-2025) is based on the IBES consensus estimates, which allows us to incorporate bottom-up considerations. The second period (2025-2033) is derived from the long-term trend in earnings growth for a given region in our central scenario with the addition of the buyback component. It is also tilted by a coefficient depending on the growth or value characteristics of the sector. As a final step, the outcome is aggregated to match the long-term earnings per share trend of each region. Expected change in valuation: to assess this repricing component, we look first at the PE ex growth of a given region and adjust it from the repricing of the region, making sure it is consistent with the outcome of the regional equity section, which integrates the climate risk by definition at a regional level. Then from this adjusted regional Target PE, we derive a Target PE for each sector, depending on its long-run earnings growth (as defined previously). Finally, we compare this sectoral Target PE with its average historical PE to get the sector valuation change and we adjust for ESG and climate change flows as well a sector low carbon and NetZero risk premia, as explained on page 31 of this paper. For income, we use the average of 2021-2023 consensus dividend yield of each sector, here again adjusted to be consistent with the regional outcome.

G10 FX Fair Valuation models: The literature is full of theoretical foundations at the basis of currency fair valuation. Our battery of models leverages two main concepts: 1) Purchasing Power Parity equilibria (which in turn expresses FX equilibria as a function of relative price dynamics across countries) and 2) Behavioural Exchange rate equilibria (where we focus on short to long-term fundamental drivers. Purchasing Power Parity models: Standard PPPs rely on CPI differential, we enrich our framework to take into account two additional variations: 1) PPP based on PPI differential (to take into account the differential in costs of production) and 2) a standard PPP but adjusted for productivity (we proxy with CPI-PPI differentials, following the Balassa-Samuelson framework). Both CPI and PPI induce a negative contribution to the FX (i.e. higher inflation means a depreciation in the long run), whilst higher productivity (i.e. higher CPI-PPI differential) empirically translates into stronger FX Behavioural Exchange rate models: We leverage here on the theoretical findings of Clark and McDonald and estimate FX equilibrium based on short to medium- and long-term fundamental drivers. On top of inflation (our longest-term driver, given the empirical convergence rate from spot), we do consider 1) interest rates differentials, 2) terms of trade, 3) fiscal spending, 4) productivity (GDP per capita) and 5) the degree of openness of each G10 economy.

SOURCES AND ASSUMPTIONS

CASM model

We believe capital markets are not always efficient and they deviate from long-term fair values. We follow a disciplined approach to asset allocation that blends quantitative input and qualitative assessment to identify superior asset allocations. Our multivariate approach to modelling assets and liabilities focuses on complex relationships between risk factors over multiple investment horizons. Simulating asset prices that are consistent with our risk factor models allows us to capture complex market dynamics. Macro and financial risk factors explain asset returns and the correlations between assets.

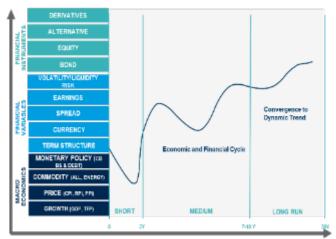
Cascade Asset Simulation Model (CASM) is a platform developed by Amundi in collaboration with Cambridge University*. CASM combines our short-term financial and economic outlooks. It incorporates medium-term dynamics into long-term dynamic trends, to simulate forward-looking returns for different asset classes over multiple horizons. CASM generates asset price scenarios and underlying economic and financial factors that determine Amundi's expected returns. It is a valuable tool for strategic asset allocation and asset-liability management analysis. The flexibility of CASM allows us to provide highly customised solutions to our clients.

We estimate model parameters quarterly to incorporate new market data and our short-term outlook. The process for calibrating models that reflect our view of economic and financial market trends is a close collaborative process between many teams at Amundi. We reach a consensus for the short-to-medium-term outlooks for macro and financial variables for each region under consideration (US, Eurozone (core, semicore and periphery), UK, Japan, China, India, EM area). The models are calibrated to be consistent with these outlooks and long-run estimates. At each step in the process, results are analysed against stylised facts and checked for consistency. The estimation process for each region progresses from calibrating macro and financial variables to simulating asset prices, where asset prices are driven by the underlying macro and financial variables.

Price returns are generated using a Monte Carlo simulation. Stochastic generation of risk factors and price scenarios allows us to analyse a wide range of possible outcomes and control the uncertainty surrounding these. We can change starting assumptions and see the effect on possible future asset prices. The platform allows us to simulate consistent scenarios across any instrument in a multi-asset portfolio, a feature that is particularly relevant for institutional investors with long time horizons.

The CASM platform covers macro and financial variables for major regions, in particular the US, UK, Eurozone, Japan, China, India and Emerging Markets as an aggregate. Models are constructed to capture the main drivers of economic variables that affect asset prices. The definition of the building blocks within the cascade structure has been enhanced to incorporate the climate policy actions and their implications.

Cascade Asset Simulation Model (CASM) is a platform developed by Amundi used to simulate forward-looking returns and derive expected returns (see a more detailed description at the end). We distinguish between macro-economic, financial and pricing models as described in the following chart:



The architecture of CASM can be described in two dimensions. The first dimension is a "cascade" of models. Asset and liability price models are made up of market risk factor models. Market risk factor models are made up of macroeconomic models. Initially proposed by Wilkie (1984) and further developed by Dempster et al. (2009), this cascade structure is at the root of the platform's capability to model linear and non-linear relationships between risk factors, asset prices and financial instruments. The second dimension is a representation of the future evolution of the aforementioned "cascade" effect. The unique formulation allows us to simulate asset price scenarios that are coherent with the underlying risk factor models. In the short term, CASM blends econometric models and quantitative short-term outlooks from inhouse practitioners. In the long term, we assume the market variables are subject to a mean reverting process, defined formally through structural break analysis and general equilibrium models. The short term evolves into a long-run state through the medium-term dynamic driven by business cycle variables.

Source: Amundi Asset Management – CASM model.

*A.D. Wilkie. (1984), A stochastic investment model for actuarial use [with discussion]. Transaction of the Faculty of Actuaries, 341-403

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Amundi Investment Institute

In an increasing complex and changing world, investors need to better understand their environment and the evolution of investment practices in order to define their asset allocation and help construct their portfolios.

This environment spans across economic, financial, geopolitical, societal and environmental dimensions. To help meet this need, Amundi has created the Amundi Institute. This independent research platform brings together Amundi's research, market strategy, investment themes and asset allocation advisory activities under one umbrella; the Amundi Institute. Its aim is to produce and disseminate research and **Thought Leadership** publications which anticipate and innovate for the benefit of investment teams and clients alike.





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