

10-year Expected Returns

Towards a reordering of asset class profiles

Annual edition 2024

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ASSET MANAGEMENT



WHAT'S NEW

Capital market assumptions: what's new in this year's edition

Dear Client,

Last year we enhanced our Capital Market Assumptions approach by including a social dimension considering the impact of rebalancing labour / profits on earnings. This social component was added to the climate change assumptions introduced in 2022, which evaluate how the future trajectory of the energy transition will affect the key economic variables driving our forecasts (GDP growth, inflation, productivity, etc.), and the way we model asset class behaviour – with regards to earnings growth in particular.

This year, we have taken additional steps to answer our clients' most relevant questions:

- How is the climate scenario evolving amid the delays in climate policies?
- How will artificial intelligence impact productivity?
- What would be the impact of a carbon tax on economies and sectors in a stress test scenario?
- How is the relative appeal of asset classes evolving and what could the risk / return profile look like for Emerging Market equity ex China?
- What should Strategic Asset Allocation look like for the next decade?

We have also developed a completely new digital experience that will allow investors to navigate the full set of expected returns data in various currencies and delve into the main assumptions driving our asset class modelling process, which includes examples of optimised portfolios for Euro and USD investors with different risk profiles.

I would like to thank all of the colleagues who have contributed to this collective project, as well as the NGFS Climate Scenarios Team of the ECB for answering our questions on the evolution of NGFS scenarios. I wish you a pleasant and informative read,



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A disorderly transition with winners and losers

Climate change, the energy transition and geopolitics will likely drive countries towards different growth paths. New winners may emerge, while central banks will have to manage a delicate equilibrium, maintaining price stability and affordable debt servicing costs to finance the transition.

Towards a reordering of asset class profiles over the next decade

The next decade should see a change in the relative attractiveness of different asset classes. Bonds are the anchor for investors and their renewed appeal extends to Emerging Markets. EM equities should be favoured, in particular India. European equities should also regain some appeal.



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Time to revisit strategic asset allocation and broaden diversification

A turning point in central bank policy, future valuation resets in Developed Market equities and fragmented growth in Emerging Markets could offer opportunities for rethinking strategic asset allocation and enhancing diversification with real and alternative assets.



KEY INSIGHTS

Key highlights on scenarios and return forecasts for the next decade

Climate delays, Artificial Intelligence gains and valuations will drive a reordering of asset class profiles

Delays in climate policy, rising geopolitical tension and the adoption of Artificial Intelligence (AI) are reshaping the long-term economic pathway. The evolution of these trends and the impact of high valuations in some areas will determine future expected returns. Bonds as a portfolio engine are back, while equity will see a reversal with the renewed appeal of global and Emerging Market equities. Emerging Market bonds, Hedge Funds and Private Debt will also become more attractive thanks to their diversification benefits.

- 1 | A disorderly transition, helped partially by Artificial Intelligence**
 Delays in climate policy and rising geopolitical tension point towards a disorderly transition. The higher costs of the transition will be deferred to later years. The overall transition path is getting riskier as delays increase physical risks. Productivity gains from AI may help to marginally offset some of the economic impact of the transition. We expect AI adoption to be gradual as social and energy costs will also need to be assessed.
- 2 | Central banks' efforts to balance price stability with low yields for investors**
 We continue to see sustained inflation in the short term, converging towards central bank targets in the medium term. Central banks will have to reconcile their price stability and balance sheet reduction objectives with maintaining relatively low yields for markets to fund the transition's financing requirements.
- 3 | A challenging net zero road for many emerging markets, with some winners**
 The road to net zero looks more challenging for many emerging markets, and differences across countries will become more pronounced. However, countries that are rich in minerals which are critical for the energy transition could benefit the most.

2.3%

Average GDP growth gap in favour of Emerging Markets vs Developed Markets in 2024-2033.

-2.3%

Average annual 10-year expected return loss for a 60% Equity- 40% Bond US allocation* compared to the past 10 years.

>7%

Private Equity, Indian Equity and Emerging Markets ex China 10-year expected returns are above 7%.

~50%

Between 45% and 55% is the optimal allocation to Global Aggregate bonds for moderate risk profile investors.

~20%

Recommended allocation to a basket of real and alternative assets.

Source: Amundi 2024 Capital Market Assumptions. *60% MSCI USA TR USD, 40% US Aggregate Bond.



4

A carbon tax will need to be assessed in a fair transition framework

A carbon tax would have a significant impact on growth and inflation, with Emerging Markets particularly affected. A fair transition is at the heart of the case for carbon taxation.

5

Expect lower returns and higher volatility, particularly for equities

On average, 10-year expected returns are slightly lower compared to last year's forecasts, particularly for Developed Market equities. A traditional 60% equity-40% bonds US allocation could see much lower returns compared to the past 10 years (from 7.5% to 5.2% Ann. Ret.).

6

Bonds are back as a portfolio engine, with quality in focus

From an asset allocation perspective, and following last year's strong comeback, we continue to see fixed income as a key engine for portfolio returns, particularly high-quality assets.

7

In search for diversification consider EM Debt, Hedge Funds and Private Debt

In a challenging risk-return backdrop for risky assets, investors should consider enhancing diversification by adding Emerging Market Debt, Hedge Funds and Private Debt. These assets may offer an appealing risk-return payoff with low correlations to bonds and equities.

8

In equities, India and EM ex China offer the most appealing returns. The US (overall market) should lag. An equal-weight approach will be favoured in the US

US equity may see lower returns compared to the past, amid some areas of tight valuations. An equal-weight approach within the US market, as well as a global approach, may deliver higher returns. India and EM ex China should offer the highest expected returns in equities.

9

Sector opportunities will help enhance return potential

Long-term trends such as the rise of net zero investing and Artificial Intelligence will likely drive sector opportunities. Healthcare, IT and Communications Services are expected to be the global winners, together with Financials benefitting from higher rates.

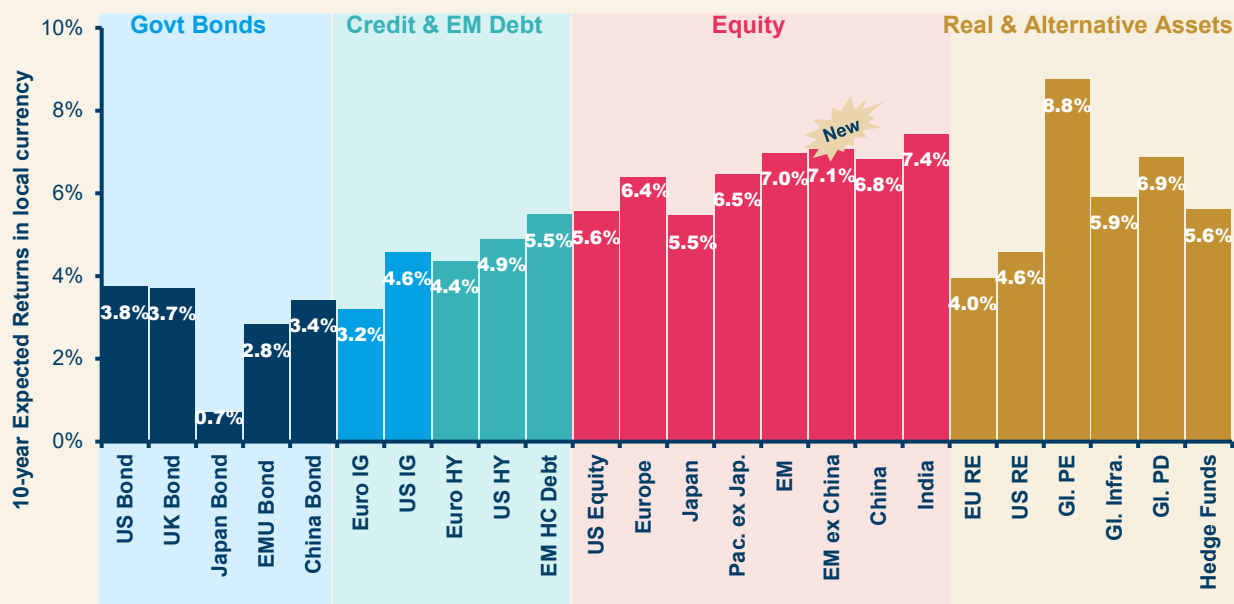
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Real and alternative assets deserve a place in Strategic Asset Allocation

In the real and alternative space, Hedge Funds and Private Debt continue to have an attractive profile, Infrastructure is a good diversifier, while Real Estate is more challenged. Private Equity remains a key growth engine for investors with a higher risk and illiquidity tolerance.

The traditional 60:40 allocation will be challenged by lower equity prospects for developed markets. Go global, embrace illiquid asset and seek sectoral opportunities to navigate a lower expected return backdrop.

10-year expected returns

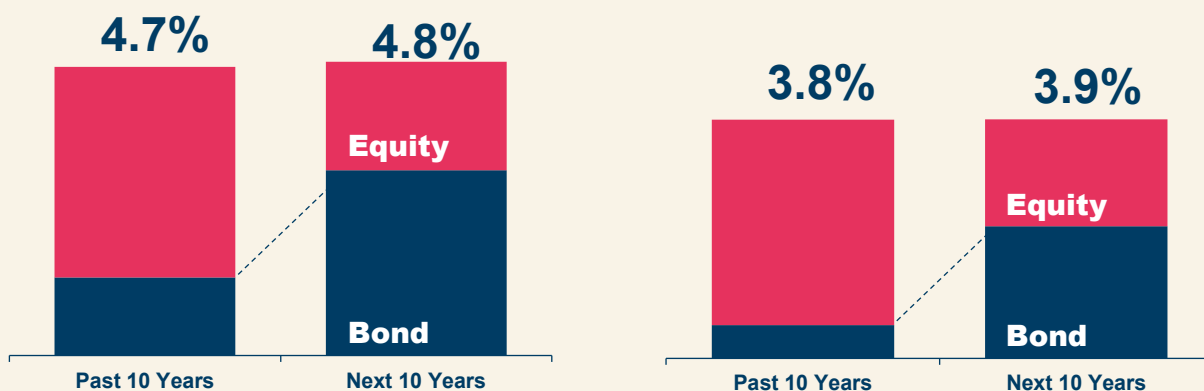


Bonds: the return of the conservative portfolio engine

US Conservative Allocation in USD
70% US Aggr. Bond – 30% MSCI USA

Global Conservative Allocation in EUR
70% Global Aggr. Bond Hedge Eur – 30% MSCI World Eur

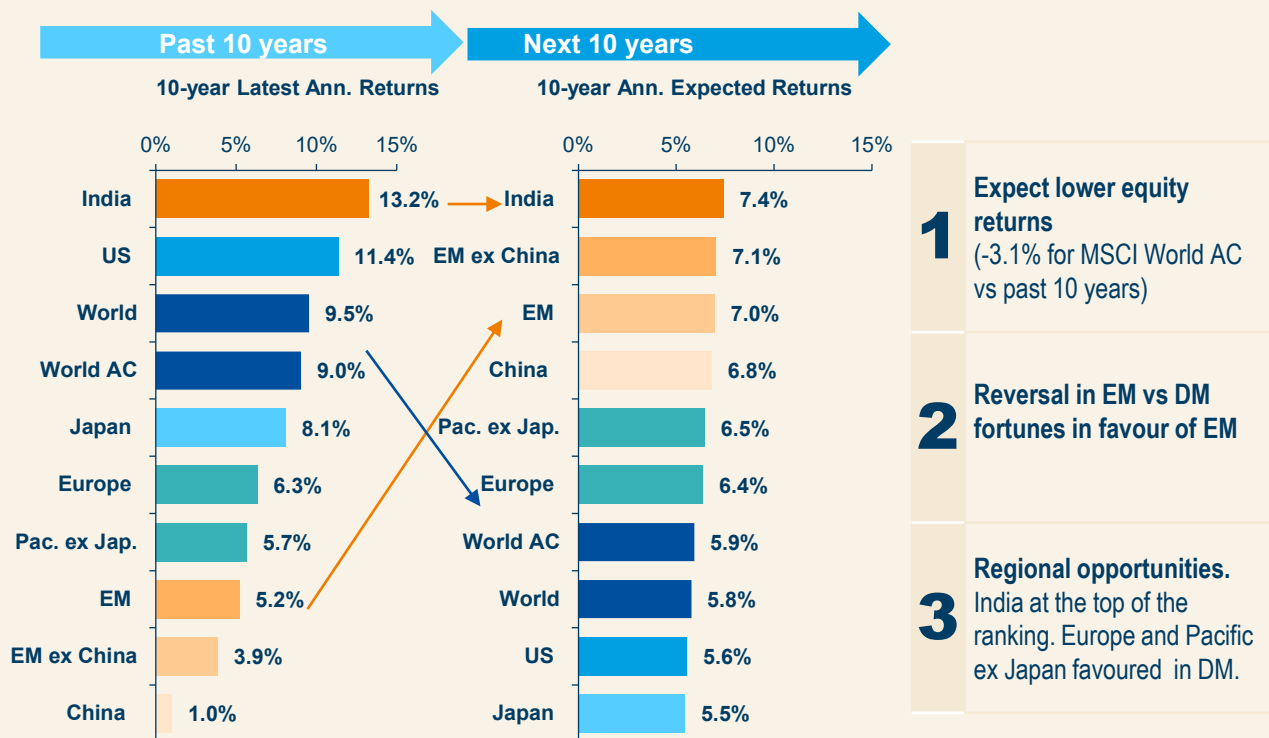
Conservative allocation (70% bonds – 30% equities) will see similar performances compared to the past decade thanks to better return potential from bonds which should regain their role as a major performance contributor.



Source: Amundi CASM Model. Data as of 29 December 2023. For additional information see 'Sources and Assumptions' section at the end of this document. The forecast returns are not necessarily indicative of future performance, which could differ substantially. IG=Investment Grade, HY=High Yield, RE=Real Estate, PE=Private Equity, PD= Private Debt, Infra.=Infrastructure. EM Debt HC, Global Infrastructure and Hedge Funds are in USD, all other indices are in local currency.

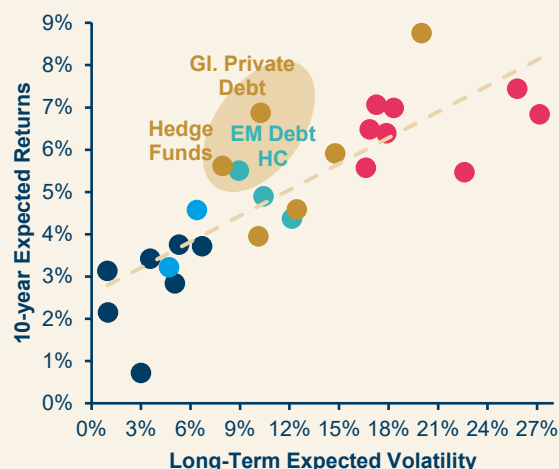
Three insights on the reordering of global equities

Ranking of past and expected equity returns in local currency



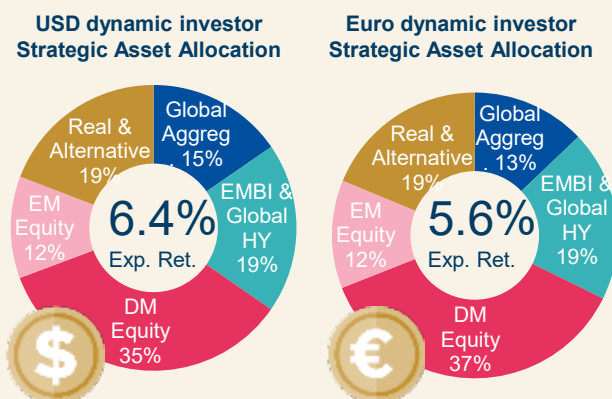
The top diversifiers: EM Debt, Private Debt and Hedge Funds

Rising star asset classes for their favourable risk-return profile and diversification appeal will be Emerging Market Debt, Hedge Funds and Private Debt.



Strategic Asset Allocation: widen the investment universe

Lower expected equity returns will be a challenge for the traditional 60% equity - 40% bond allocation. Investors will have to add to EM Bonds, EM Equity and Real Assets to seek returns in the 6% range.



Source: Amundi CASM Model. Data as of 29 December 2023. For additional information see 'Sources and Assumptions' section at the end of this document. The forecast returns are not necessarily indicative of future performance, which could differ substantially. EM Debt HC, Global Infrastructure and Hedge Funds are in USD, all other indices are in local currency.

THEMES TRANSFORMING THE ECONOMY

A disorderly transition with risks of delay

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No straightforward productivity gains from Artificial Intelligence

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Who will finance the green transition?
Can central banks help?

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Five questions on the impact of carbon taxes on economies and markets

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MACRO THEMES

A disorderly transition with risks of delay

Since 2022, when we started to factor energy transition pathways into our long-term economic assumptions, three major themes have prompted adjustments to our central scenario.

First, climate change has been accelerating at a time when the implementation of climate policies is being delayed. Last year was the hottest on record and January 2024 marked the first 12-month period in history when temperatures exceeded an average 1.5°C of warming (above pre-industrial temperatures)¹. Second, the Russia-Ukraine conflict and rising geopolitical tensions in the Middle East have made the trajectory of the transition more disorderly. Resurgent nationalism, concerns regarding competitiveness and security, and regional conflicts are pushing countries to increasingly focus on domestic issues. Third, the adoption of Artificial Intelligence (AI) is becoming a relevant theme with potential long-term impacts on the global economy.

Therefore, we have revised our central scenario to capture these changes. In particular:

- 1. Ongoing climate policy delays have reduced the prospects of an orderly transition and increased transition risks around reaching a 1.5-2°C target. Accounting for a higher probability of delays, our central scenario is centred around lower overall transition risks and higher physical risks, as costs are transferred into the future.**

The Network for Greening the Financial System (NGFS) framework remains the starting point for our scenario. Last year, to model increasing geopolitical fragmentation, our central scenario incorporated a disorderly 'Divergent Net Zero' path characterised by higher short-term costs due to divergent policies resulting in abrupt adjustments to phasing out the use of oil. To some extent, this disorderly path has been subsumed this year by orderly scenarios reflecting 1.5-2°C global temperature rises, which have consequently become more disorderly. Moreover, a more adverse 'Fragmented World' scenario, as well as a more benign 'Low Demand' one, were added to the NGFS framework. We think these are too extreme and very unlikely, so we have built a central scenario of a disorderly transition that combines the orderly scenarios ('Net Zero 2050' and 'Below 2°C') with the 'Delayed Transition' scenario² (see the infographic on the next page). Our assumptions also acknowledge some countries' decisions to smooth their commitments to net zero over a longer time horizon.

- 2. For the first time, we considered current and future AI developments in our central scenario,** to account for both the small, positive productivity gains as well as the risks that AI adoption entails (see article on page 13).
- 3. Our central scenario also embeds greater granularity in Emerging Markets' (EM) transition pathways,** based on their current policies and commitments to the transition.

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Our central scenario combines orderly and disorderly transition pathways to account for a world characterised by geopolitical fragmentation and lower commitments from some countries.

¹ Based on global surface air temperature according to the latest [Climate Bulletin](#) of the Copernicus Climate Change Service

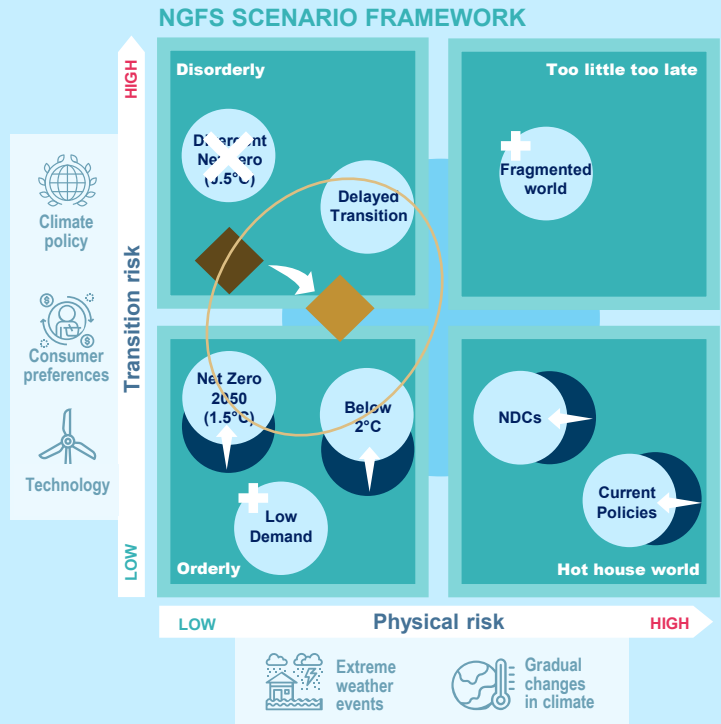
² We have also included part of the 'Rocky Road' Shared Socioeconomic Pathways (SSPs3), defined in the [IPCC](#) Sixth Assessment Report on climate change in 2021.

A transition with higher risks

AMUNDI INVESTMENT INSTITUTE CENTRAL SCENARIO 2024

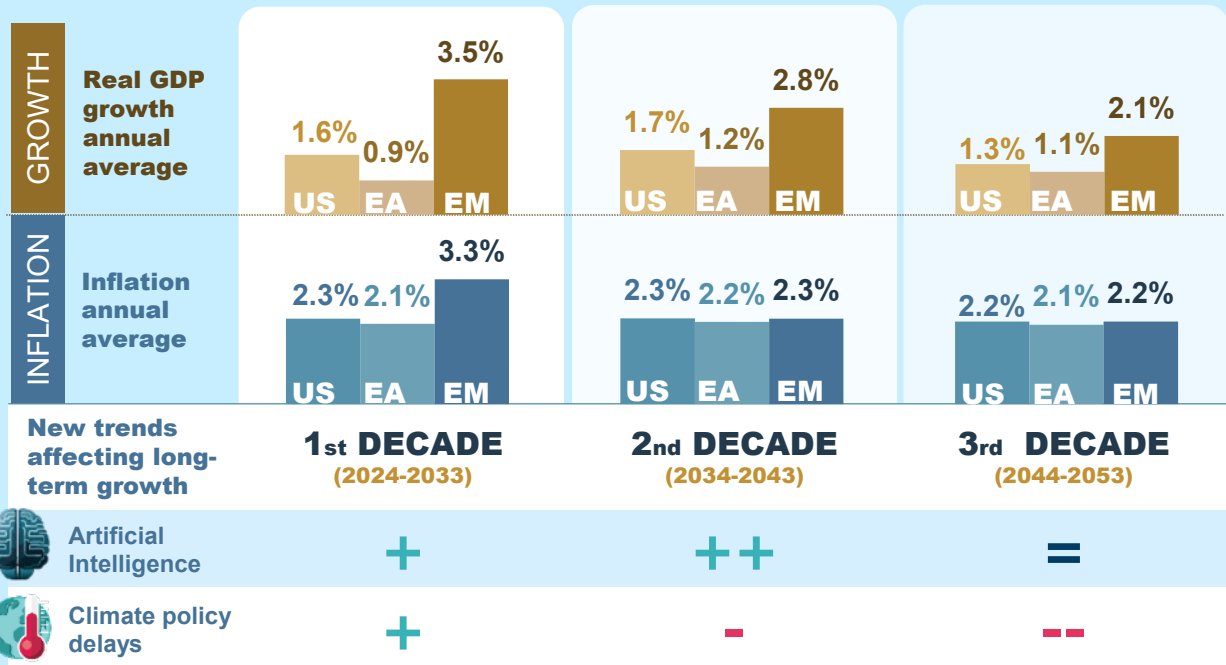
High probability of limiting global warming below 2°C with increasing physical risks compared to our 2023 central scenario.

- Orderly** Net zero 2050 and below 2°C scenarios assume climate policies are introduced early and gradually become more stringent. Both physical and transition risks are relatively subdued.
- Disorderly** Delayed transition explores higher transition risks due to policies being delayed or divergent across countries and sectors.



◆ Amundi Central Scenario 2023 ◆ Amundi Central Scenario 2024

Growth and inflation paths



Source: Amundi Investment Institute, NGFS. Data as of 31 December 2023. Qualitative assessment of each trend's impact on GDP growth in each decade. From ++ (most positive impact on the growth and inflation mix) to -- (most negative impact). NGFS is The Network of Central Banks and Supervisors for Greening the Financial System. US= United States, EA=Euro Area, EM= Emerging Markets.



Our central scenario has some important macro implications:

- We continue to see higher inflation in the short to medium term, but much lower compared to last year, given transition delays are spreading costs over a longer time period.** The short-term inflation pattern is driven by geopolitical fragmentation and some delays in productivity gains due to slow investments into renewable energy (because of the high rates environment), particularly in EM where the needs are higher due to problematic energy transmission and grid stability. In addition, the green transition and the technological transformation are placing further strain on the commodities supply, driving prices up. Over the medium-to-long term, an increase in productivity (as outlined in the article on Artificial Intelligence) together with more general cost reductions will drag inflation down to more moderate levels, notably in many EM, at around the current lower bound of central bank targets.
- On the growth front, we expect Developed Markets (DM) to see stronger growth compared to last year, in the first and second decades.** This is due to the positive effects of the productivity gains generated by adopting AI and fewer short-term costs involved in delayed climate policies. In the third decade, the diminishing effects of AI and higher physical risks should bring growth down.
- The road to net zero looks more challenging for many EM, resulting in progressive GDP losses and significantly lower growth standards by 2050.** Important exceptions can be found among countries rich in critical minerals (such as Chile and Indonesia) that are better positioned to offset incoming strains from climate mitigation and adaptation. Overall, the challenge is greater where the sense of urgency is highest, as low-income and emerging countries are more exposed to droughts and storms than developed ones, and the impact on growth is more severe. In addition, the impact of fiscal 'loitering' limits the resources necessary for climate financing and the ability to react to natural disasters.
- Beyond domestic resources, multilateral climate funds and (so far limited) contributions from the private sector are needed. Sustainable capital mobilisation in Emerging Markets is crucial** (see [Amundi Responsible Investment Views 2024](#)). At the same time, emerging countries need to multiply their efforts by introducing a clear taxonomy (i.e., sovereign and quasi-sovereign entities, formal and informal sectors) and improving climate data in general. Finally, one of the most important topics at COP 29 in November should be more precise guidelines on the mobilisation of funds from developed to emerging economies. The New Collective Quantified Goal (NCQG) needs to be defined better in terms of ambition, structure and timeline, with more funds progressively moving to 'mitigation' goals from 'adaptation' and loss and damage funds.

Emerging Market winners in the climate transition

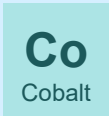
CHILE

The world's second largest extractor of Copper and Lithium

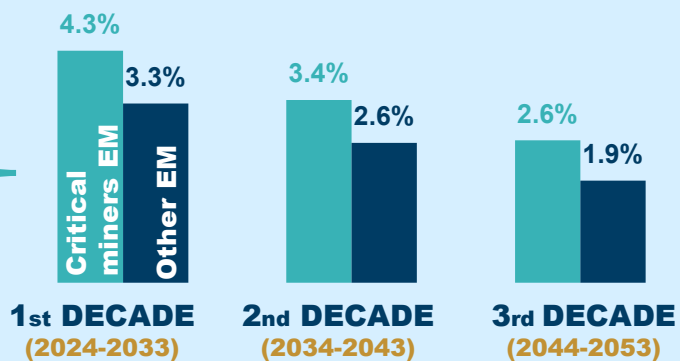


INDONESIA

The world's largest extractor of Nickel and the second largest of Cobalt



Average GDP growth by decade in our Central Scenario



Source: Amundi Investment Institute forecasts using NGFS. Data as of 31 December 2023. Critical miners EM shows the GDP-weighted average of Chile and Indonesia, Other EM refers to the GDP-weighted average of Brazil, China, Czech Republic, Hungary, India, Malaysia, Mexico, Poland, Russia, South Africa, South Korea, Taiwan, Turkey.



LONG-TERM THEMES

AUTHORS

No straightforward productivity gains from Artificial Intelligence

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Global investment into Artificial Intelligence (AI) is rapidly increasing across sectors, from manufacturing to services, with a focus on generative AI, leading to higher output in the sectors most involved. This trend is also relevant when looking at long-term growth patterns, as AI has the potential to significantly increase total factor productivity across the economy but will also have possible social impacts that will need to be managed.

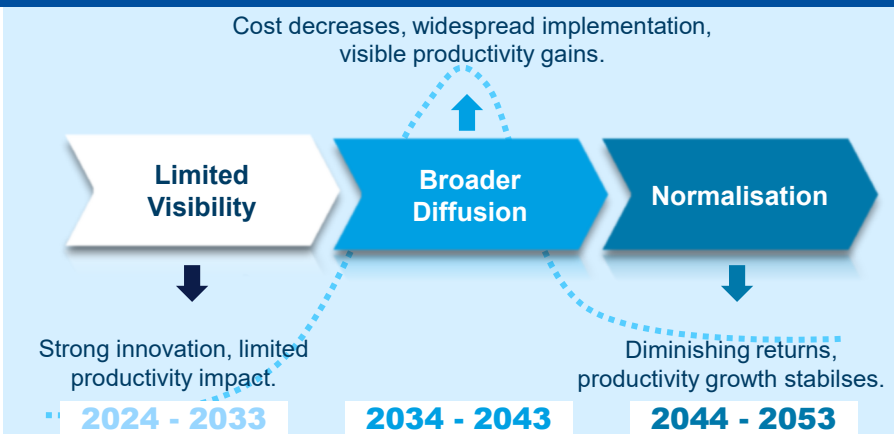
However, the process will not be linear: there will be many hurdles, and realising productivity gains at the aggregate level will take time due to barriers such as the huge energy usage of generative AI models and political concerns regarding potential misuse. Regulation may also limit the speed of broader adoption.

We expect the adoption of AI to proceed in three phases. The first is characterised by strong innovation and capital accumulation but no widespread adoption. Productivity benefits are partly offset by losses in some sectors and there is limited visibility on the net impact. In the second, the cost of using and investing in new technologies falls, implementation becomes more widespread and productivity gains spread to the economy. Divergences may remain, but the benefits are more visible. In the third, there are diminishing marginal returns to further adoption and the productivity growth boost tapers off, returning to a more moderate longer-term trend.

In this way, the productivity impact on potential growth from AI follows a bell-shaped curve with a maximum impact in the 2030s, coincident with broader diffusion across sectors and economies. Some Emerging Markets and low-income countries are more likely to experience more immediate disruptions, given their lack of an adequate digital infrastructure and digitally skilled workforce. While the impact on potential growth may be perceived as temporary, AI will produce a technological shift able to permanently increase the level of per capita GDP.

In the long term, it is inevitable that AI will be widely adopted, but social and political factors, as well as economic barriers, could limit the rapid diffusion and fast adoption across countries.

AI adoption phases and how to factor them into the long-term macro outlook



Source: Amundi Investment Institute, for illustrative purposes.

AI Assumptions: Economic theory posits that, in competitive markets, the impact of a productivity boost in a given sector on aggregate productivity and output is equal to the size of the productivity boost weighted by the relative size of that sector in the economy. Thus, assuming AI increases productivity by 10% in one-third of the economy over a period of 10 years, aggregate productivity would be 0.3% higher, representing a significant increase.



LONG TERM THEMES

Who will finance the green transition? Can central banks help?

The green transition presents an unprecedented financing dilemma. The long-term financing requirement for countries to meet the net zero transition will require very large annual outlays, with the private sector taking on the lion's share if these ambitious targets are to be met. With public debt also at unprecedented levels in most advanced countries – following unusually large fiscal outlays to deal with recent shocks – it is difficult to see how governments could consider contributing any sizeable amounts. This begs the obvious question: What role can central banks play? Could accommodative monetary policy, similar to the long period of low policy rates following the Global Financial Crisis (GFC) be part of the solution?

The prolonged period of unconventional monetary policy following the GFC – low interest rates and large asset purchases (Quantitative Easing) – was possible because growth and inflation were unusually low due to impaired private sector balance sheets, particularly the balance sheets of financial institutions. Now, with inflation still above central bank targets and monetary policy still in restrictive mode, including a gradual unwinding of their balance sheets (Quantitative Tightening), central banks are not in an accommodative mode at this stage. But the demand for climate-related investment, while notionally high with respect to ambitious targets, is not high in practice. This is partly because many governments have recently scaled down their near-term ambitions to meet net zero targets.

With public debt at unprecedented levels, it is difficult to see how governments could consider contributing any sizeable amounts.

AUTHORS

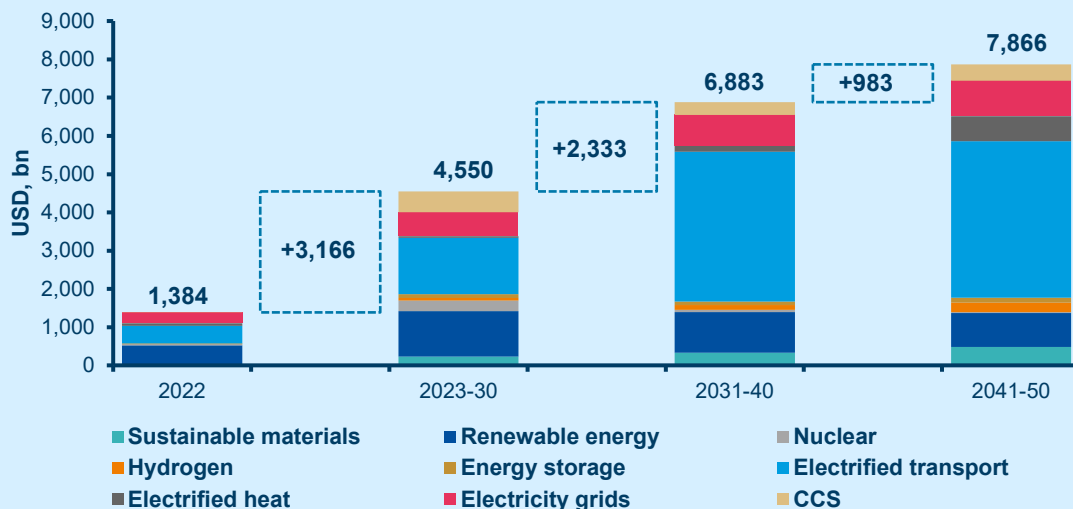
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CHART: Required investment should triple in the short term to get on track for net zero



Source: Amundi Investment Institute, BloombergNEF on Energy Transition Investment Trends 2023. 2022 energy transition and grid investment versus required annual investment in 2023-30, 2031-40, and 2041-50 in NEO 2022 Net Zero Scenario. Note: future values are from the New Energy Outlook 2022, except electrified transport, which is from the Electric Vehicle Outlook 2021 Net-Zero Scenario. The Net-Zero Scenario target global net zero by 2050 in line with 1.77 degrees Celsius of warming. Investment includes electricity grids. Data is as of January 2023.



Fiscal space in most countries is an important constraint, particularly in the face of the other demands governments are facing – higher defence expenditure and addressing the impact of higher inflation on low-income segments of their populations.

Private financing of the green transition will also face challenges. **Investment in green energy will require incentives in the form of higher expected returns than investments in old energy.** Governments can, and will need to, incentivise private investment through changes in relative prices that make old energy more expensive, primarily through higher carbon taxes (see article on page 16 for potential impact of carbon taxes), and other incentives, such as the Inflation Reduction Act in the United States. Technological advances, such as improvements in battery technology and more efficient use of renewable energy will likely also contribute to the net transition, and these may not require tax incentives, but the pace of such advances is inevitably uncertain.

Governments will also need to contribute, both through financing the necessary infrastructure (the public good element of the net transition) and participation with the private sector in financing larger projects. And these demands will compete with other demands on the public sector.

Regardless of the relative contributions of the public and private sectors, the aggregate demand for climate investment will be high and will extend over a long period. Climate experts estimate that the annual global demand for climate investment will be in the order of USD 4-5 trillion from 2030 to 2050. If the world manages to get to net zero by around 2050, markets will need to provide this funding at yields that are consistent with expected returns. This is a tall challenge. It almost certainly means that macroeconomic policy, including central bank actions, will need to ensure conducive financial conditions.

The challenge for central banks, especially in advanced economies, will be to reconcile their narrow monetary policy objectives – maintaining price stability at around 2 per cent inflation and gradually unwinding their large balance sheets – with maintaining relatively low long-term yields for markets to fund large public and private sector financing requirements. In principle, this can be done if real interest rates are not structurally higher, which would lead to higher neutral policy rates. Long-term productivity and demographic trends suggest real rates will revert to pre-GFC levels of around 1 per cent.

But returning to low real rates depends a lot on investment demand. Adverse geopolitical trends that lead to higher defence expenditure and a lack of private funding for climate investment, could raise real rates substantially. Central banks would then have to both scale back their QT programmes and indirectly fund investment demands through accommodative policy. This, however, will not be as simple to accomplish as during the period after the GFC, because they will also have to be mindful of a very different inflation environment.

The challenge for central banks will be to reconcile their narrow monetary policy objectives with maintaining relatively low yields for markets to fund large public and private sector financing requirements.



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MACRO THEMES

Five questions on the impact of carbon taxes on economies and markets

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1. What is a carbon tax and how does it affect the economy?

The primary objective of a tax is to reduce greenhouse gas emissions, particularly carbon emissions. By putting a price on carbon, the tax provides a financial incentive for businesses and individuals to adopt cleaner technologies, improve energy efficiency and switch to alternative low-carbon products. We estimate that a global carbon tax of \$100 per tonne of CO2 emitted would, in total, be the equivalent of 5.01% of global GDP. However, this cost would be partially offset by a 2.83% increase in government tax revenues, leading to a net economic cost of 2.18% (of global GDP). The region most affected would be Emerging Markets, starting with India, followed by Russia, China, Bulgaria and Taiwan. We also note that the introduction of a \$100 carbon tax could lead to an inflation shock, as the carbon tax would be passed from the producer to the rest of the supply chain: +4.08% for the producer price index and +3.53% in terms of the consumer price index.



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2. Why are the total costs more than the carbon tax revenues?

Governments would earn revenue directly equivalent to the cost of the carbon tax, but the net economic cost is the indirect cost that results from passing the tax down the supply chain to the consumer. The amount passed on depends on factors, such as the market structure (e.g. monopolistic, competitive) and the price elasticities (i.e. sensitivities) of supply and demand. For example, economists assume that the pass-through rate for energy products is close to 100%, meaning that a carbon tax will generally be borne by end consumers because the demand for energy products is highly inelastic. In the above example, the net cost of 2.18% of global GDP was the amount passed through but within the 5.01% total figure, 0.93% was paid by the producers and 4.08% by the supply chain and consumers. This meant that only 20% of the carbon tax was borne by the producers.

A carbon tax would have a significant impact on growth and inflation, with Emerging Markets particularly affected.

Carbon Tax – most and least affected countries

by Net Cost

Most negatively affected		Least affected	
1	India	1	Switzerland
2	Russia	2	Denmark
3	China	3	Norway
4	Bulgaria	4	Ireland
5	Taiwan	5	France

by Inflation (CPI)

Most negatively affected		Least affected	
1	Indonesia	1	Switzerland
2	China	2	Norway
3	France	3	Sweden
4	India	4	USA
5	Russia	5	Denmark

Source: Roncalli T., Le Guenedal T., Desnos B., Morais P., "From climate stress testing to climate value-at-risk: A stochastic approach", Amundi Investment Institute, July 2023. [From climate stress testing to climate value-at-risk: a stochastic approach](#)



3. What would be the impact of a carbon tax at the sector level?

There are big differences between sectors, depending on the impact of the tax on each sector’s cost of supply and downstream supply chain. A sector near the top of its global value chain receives few costs from its suppliers.

Hence, it can pass on more costs than it receives. Conversely, if a sector is at the bottom of its global value chain, it receives a high number of costs from its suppliers due to a snowball effect. Thus, it can only pass on fewer costs than it receives. Our analysis finds (see chart) that when the pass-through rate is low (25% or less), the energy and utilities sectors are most affected. However, a realistic assumption (best estimates) for a high pass-through rate, given their positions at the top of their global value chains, finds that their earnings could be boosted by a carbon tax. In contrast, the consumer discretionary and consumer staples sectors would see their earnings notably reduced given their high dependency on other sectors. It is important to analyse the upstream and downstream supply chains in depth to understand how a carbon tax affects sectors differently.

4. Why examine the potential impact of a carbon tax within sectors?

The impact of a carbon tax not only varies across sectors, but also exhibits a wide dispersion of its effect within sectors. In particular, the tax effect appears relatively homogeneous within the communication services, financials, health care, technology and real estate sectors, while there is a higher dispersion among materials and industrials companies.

5. What are the main challenges in implementing a carbon tax?

A carbon tax is aimed at changing demand in order to change supply. However, if demand is almost inelastic, a tax may only result in an inflationary shock and a net economic cost to society. To be effective, it must be accompanied by green electricity supply policies aimed at growing the number of green power projects as well as offering subsidies to the utility sector to encourage investment. Also, it would be necessary for taxation to be coordinated across countries. Thus, a regional carbon tax at the European Union level would be an option. Our research showed that such a tax would result in more than 95% of the costs falling on the countries within the Union, while the impact outside it would be relatively small. A Carbon Border Adjustment Mechanism to prohibit production from moving to countries outside the Union with lower carbon prices has been set up. Importantly, a carbon tax can have a social impact with low-income households potentially more affected than high-income ones (see [Amundi’s research](#)). Therefore, the redistribution of government revenues from carbon taxation between green investment and social aid must be addressed to ensure carbon taxation is effective.

Illustrative impact at sector level of a Carbon Tax

	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Health Care	Financials	Information Technology	Comm Services	Utilities	Real Estate
Pass-through (PT) = 25%	Red	Red	Light Pink	Light Pink	Light Pink	Light Pink	Light Pink	Light Pink	Light Pink	Red	Light Pink
PT Best estimates	Teal	Light Pink	Light Pink	Light Pink	Light Pink	Light Pink	Light Pink	Light Pink	Light Pink	Teal	Light Pink
Dispersion within the sector	HIGH	HIGH	HIGH	LOW	MEDIUM	LOW	LOW	LOW	LOW	HIGH	LOW

Source: Roncalli T., Guenedal T., Desnos B., Morais P., “ From climate stress testing to climate value-at-risk: A stochastic approach”, Amundi Investment Institute, July 2023. [From climate stress testing to climate value-at-risk: a stochastic approach](#)

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ASSET CLASS VIEWS

10-year expected returns: the reordering of asset class profiles

Under our updated central macro scenario, the next decade could see fundamentals slightly improving compared to last year's assumptions. In detail:

- Procrastination around the implementation of climate policies is leading to a less volatile short- to medium-term inflation path, but with long-term inflation levels in some cases remaining slightly above central banks (CBs) targets. CBs will also have to manage higher levels of debt, while trying to maintain manageable long-term yields for markets to fund large public and private sector financing requirements, with implications regarding equilibrium rate levels.
- On the growth side, developed markets could initially benefit from milder transition risks in the medium term and Artificial Intelligence (AI)-induced productivity gains. However, regions like the EU and Japan are still expected to show growth rates below historical norms due to the negative effects of secular trends, such as the ageing population.
- EM countries will be challenged by the transition, so our estimates for long-term growth and inflation levels have been revised down. However, due to every EM economy's uniqueness, it is of paramount importance to be granular in this space. Hence, in our equity forecasts, we assess China and India equity separately and we have also introduced a new equity aggregate, EM ex China, to gauge the potential of this region beyond the structural slowdown that is affecting the Chinese economy.

Overall, despite some improvement in fundamentals, our new 10-year expected returns are, on average, slightly lower than last year's forecasts (see chart on the next page), as our models also take starting valuations into account, which are now more stretched compared to last year.

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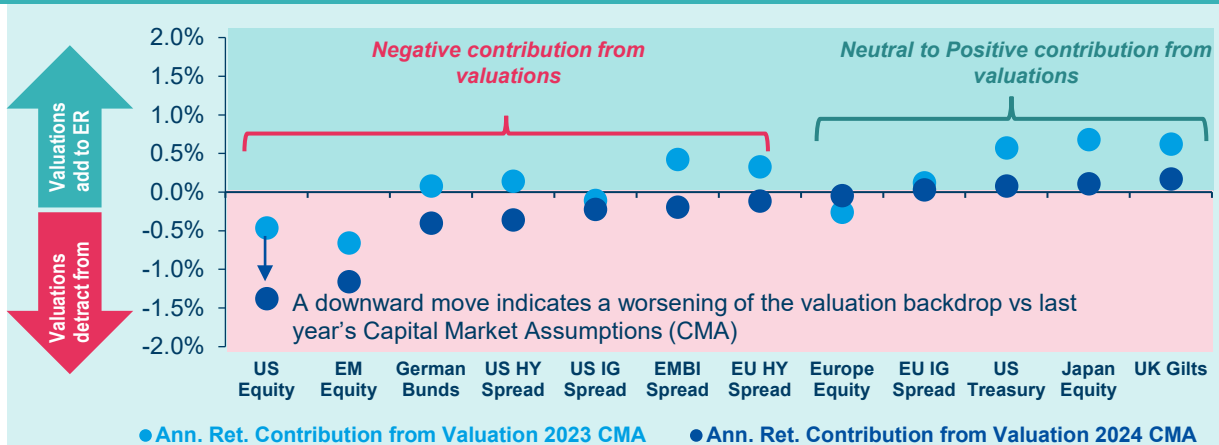
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SCAN OR CLICK TO VIEW DIGITAL VERSION

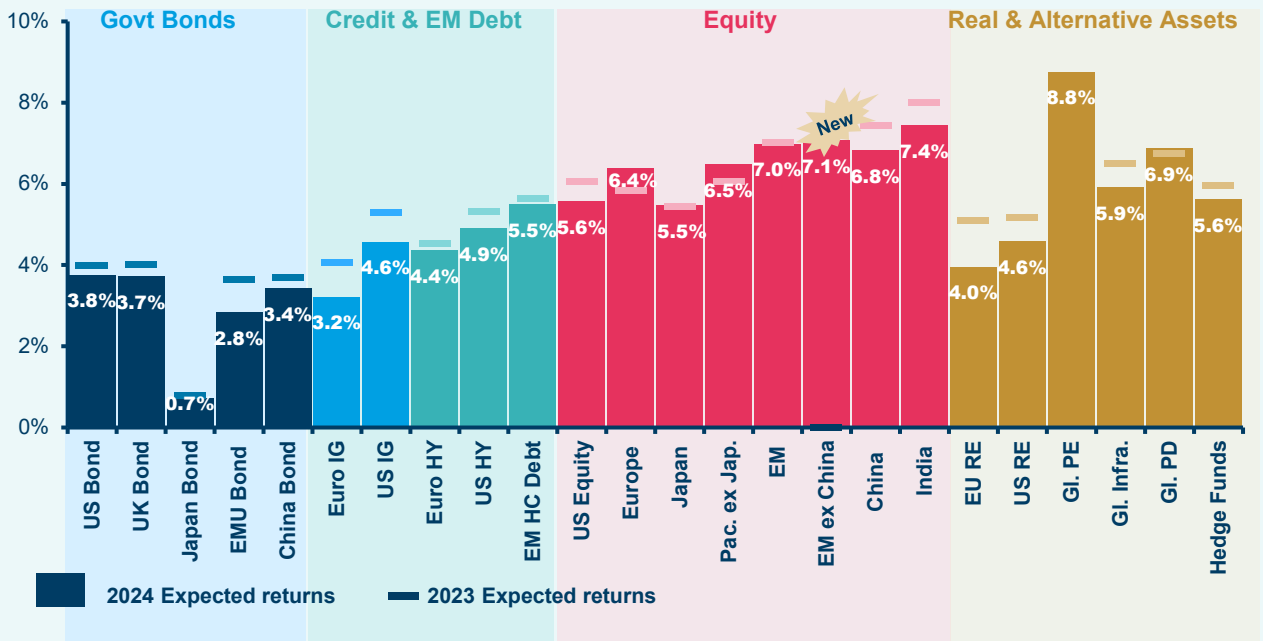
Valuations contribution to 10-year expected return comparison vs last year



Source: Amundi CASM, data as of 29 December 2023. Analysis show the valuation contribution to the 10-year expected by asset class.



10-year Expected returns vs last year's forecasts in Local Currency



Source: Amundi CASM Model. Data as of 29 December 2023. For additional information see 'Sources and Assumptions' section at the end of this document. The forecast returns are not necessarily indicative of future performance, which could differ substantially. IG=Investment Grade, HY=High Yield, RE=Real Estate, PE=Private Equity, PD= Private Debt, Infra.=Infrastructure. Red arrows down indicate lower expected returns vs last year's forecasts, green arrows up indicate higher expected returns. EM Debt HC, Global Infrastructure and Hedge Funds are in USD, all other indices are in local currency.

Fixed Income: the outlook remains positive, particularly for EM debt and IG credit

Across Developed Markets, spot government yield curves remain inverted. However, we expect them to steepen in the medium term amid monetary policy normalisation. More expensive valuations should cause reductions in bond indices' expected returns and term premiums (particularly in core Europe), while they have slightly improved in Japan, however, where expected returns remain at the low end of the return spectrum.

Looking at credit, spreads are significantly narrower than their long-term levels, except for Euro Investment Grade which is more fairly valued. We expect widening spreads in the medium-to-long term, associated with a normalisation of the risks priced into the credit market. This leads to a general decrease in expected returns on credit versus last year, due to lower carry and less attractive valuations.

Overall, the outlook for fixed income assets remains positive, particularly relative to the other asset classes and notably for the high grade segment and EM bonds. With regards to High Yield, although return expectations are greater than for Investment Grade, this relative advantage does not compensate for the higher intrinsic risks, particularly in the US market.

On the risk front, we anticipate that volatility in government yields may remain elevated in the future and may also return in the credit space.



Fixed income remains a key portfolio engine for the next decade with Emerging Market bonds and Investment Grade credit in focus.



Equity: Lower returns overall - Europe, India and EM ex China favoured

In equities, we downgraded US market return expectations on the assumption that, although the US could continue generating solid EPS growth, the market has almost entirely priced in growth expectations, particularly in certain parts of the market (Mega Caps). Hence, investors will have to look deeper within markets in the search for the most appealing opportunities.

Slightly higher EPS and dividend yields, and more attractive valuations, benefit Pacific ex-Japan and European equities. With regards to Japan equity, although new corporate governance rules are supportive, the Japanese market maintains lower growth potential compared to other DM.

We maintain a slight preference for emerging over developed market equities. In a risk-return context, however, the EM returns advantage fades amid its higher risk profile.

Within the EM basket, we anticipate a shift in preferences, as potential growth will be driven by countries other than China. In particular, India and EM ex-China may offer returns greater than 7%, ranking them higher in the spectrum of asset class returns. With regards to China equity, we expect a 6.8% annual return. We remain cautious about Chinese fundamental and macro assumptions (reflecting the most recent update on the long-term inflation environment). While acknowledging China's elevated uncertainty, we assume extreme valuations can provide a partial tailwind, particularly for the onshore market.

Finally, the energy transition and other secular trends will cause more uncertainty in the financial system and equity volatility should normalise, trending higher towards long-term historical levels.

However, it is important to note that this assessment solely focuses on asset class expectations in local currencies, without considering foreign exchange (FX). This can significantly alter investor preferences as pointed out in the table below showing the expected returns for local government bonds and equity indices expressed in G4 currencies unhedged. The returns are reported in excess of cash to identify the premium attached to the asset class. For example, Japan Equity is the most attractive asset class in every currency, benefitting from the exposure to JPY. EM and EM ex China show promising return premiums, while US equity appears less favourable.

Tight valuations lead to lower expected returns, notwithstanding the positive effect from AI productivity gains.

Foreign exchange dynamics are highly relevant given the compressed nature of expected returns, and significant FX deviations from their long-term fair value.

Equity Expected Premium at 10-year horizon by Currency

	USD	EUR	GBP	JPY
Cash Return	3.1%	2.2%	3.0%	0.7%
10-year Expected Premium vs Cash				
Local Government	0.6%	0.7%	0.7%	0.1%
US Equity	2.4%	2.5%	1.3%	2.2%
Europe Equity	4.3%	4.3%	3.2%	4.1%
Japan Equity	5.1%	5.1%	3.9%	4.8%
Emerging Markets Equity	4.7%	4.7%	3.5%	4.4%
China Equity	3.7%	3.7%	2.5%	3.5%
EM ex China Equity	4.7%	4.7%	3.5%	4.4%
Average Equity Expected Premium				
Global Equity	3.1%	3.3%	2.0%	3.1%
AC Global Equity	3.3%	2.8%	1.5%	3.2%

Source: Amundi CASM Model. Data as of 29 December 2023. For additional information see 'Sources and Assumptions' section at the end of this document. The forecast returns are not necessarily indicative of future performance, which could differ substantially.



Real and Alternative Assets remain attractive

Our 2024 CMA outlines the general attractiveness of real and alternative assets compared to listed assets and confirms good opportunities in terms of risk/return profiles. The attractiveness of these assets is linked to the remuneration for the liquidity risk exposure (see article on page 32).

Hedge Funds maintain their role of diversifier in the portfolio showing interesting returns associated with moderate risk. Infrastructure is mainly supported by public equity returns and inflation trends. Private Debt could benefit from its floating rate profile showing a superior risk-return trade-off. Private Equity is confirmed as the asset to look at in the search for more appealing returns even if higher yields could limit return prospects. Real Estate could suffer due to expensive valuations and physical risks, even if the expected asset income and rental growth are in line with historical averages.

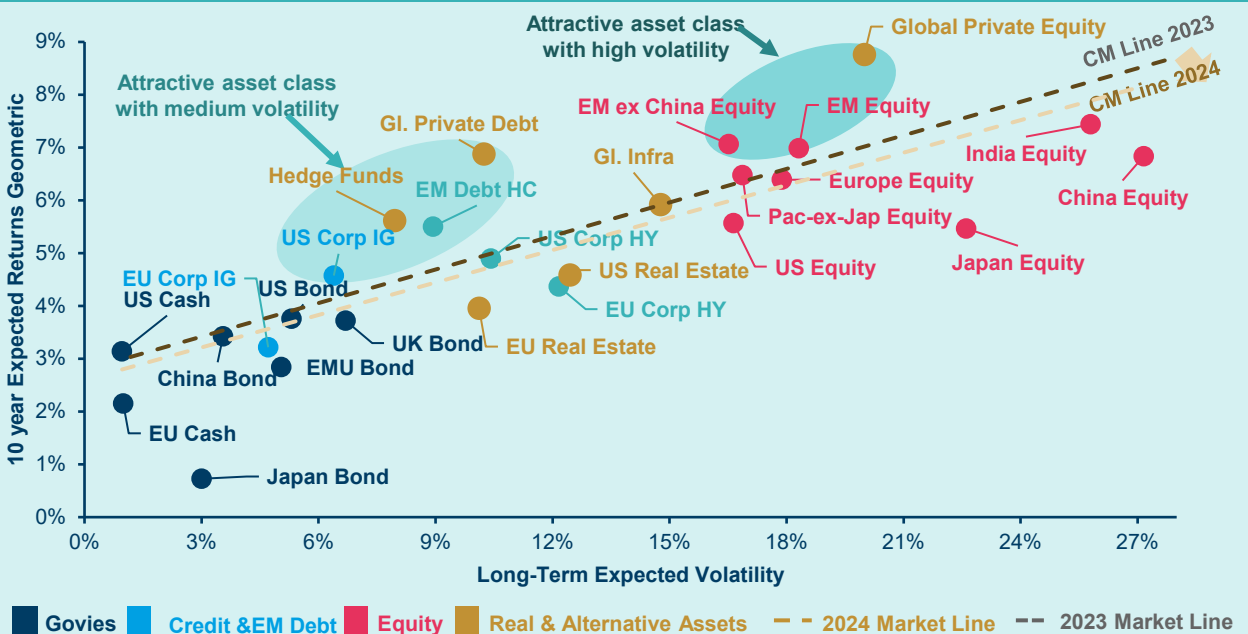
Capital market line: a downwards shift versus last year

Compared to last year, the 2024 capital market line (based on our full asset class coverage including real and alternative assets and EM equity regional markets) has shifted downwards on average and slightly flattened.

Cash and government assets remain a stable anchor to the risk-return trade-off, with Investment Grade credit assets (mostly in the United States), Hedge Funds, Emerging Market Bonds (EMBI) and Global Private Debt offering attractive returns with a commensurate risk profile. Expectations for High Yield (HY) assets are less favourable from a risk-return perspective versus Investment Grade (IG) assets as well as Real Estate.

Equities cover a very broad space in the scatter plot, spanning from DM equities, with expected volatility near 18%, to India and China equity with volatility above 25%. Within risky assets, Global Private Equity, EM equity and EM ex China equity stand out as the ones with the most appealing risk-return profile. Whereas, China and Japan equity appear less appealing on a risk-return basis as they lie below the market line. We also note that a diversified approach to EM (or EM ex China) investing is preferable rather than investing in a single country where volatility is much higher.

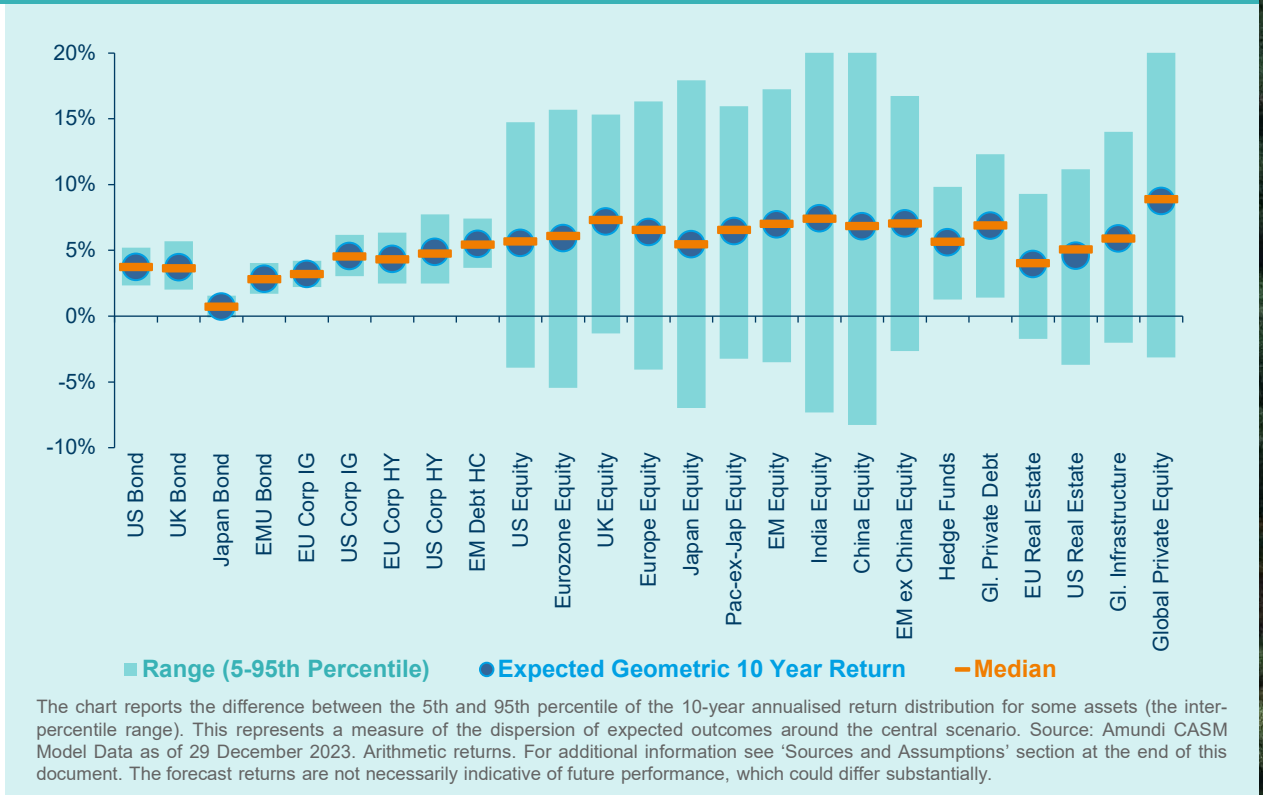
10-year Expected Returns vs Volatility scatter plot in local currency



Source: Amundi CASM Model Data as of 29 December 2023. For additional information see 'Sources and Assumptions' section at the end of this document. The forecast returns are not necessarily indicative of future performance, which could differ substantially.



Inter-percentile range of expected returns in local currency



Asset Classes' Return Distribution

We believe it is crucial for investors to consider a distribution around our expected returns for every asset class. The width of the distribution goes hand in hand with the asset risk profile.

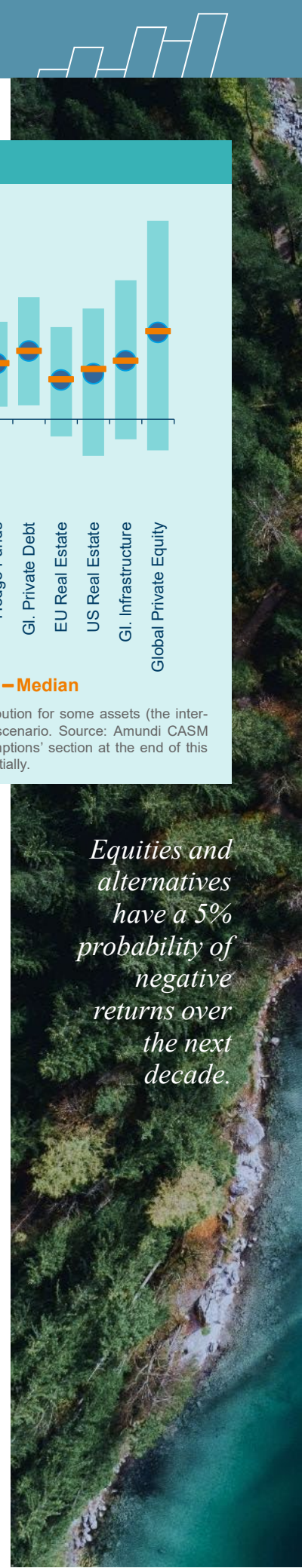
Fixed-income assets typically exhibit a narrower distribution range in comparison to riskier assets such as equities and alternatives. When analysing equities, we can register a difference when comparing developed markets (DM) and emerging markets (EM). In addition, dispersion increases notably when comparing single EM countries such as India and China versus EM aggregates.

It is key for investors to understand that for some equity and alternative assets, there is a 5% chance of experiencing negative returns over the next decade. On the real and alternative spectrum, Hedge Funds and Private Debt tend to have a moderate dispersion range, greater than fixed income but less than other equity alternatives. Infrastructure and Private Equity assets, on the other hand, demonstrate a wide dispersion range, with the lower end nearing zero.

10-year versus 30-year Expected Returns

Looking at very long-term expected returns (30-years) versus 10-years provides valuable insights into the relationship of asset returns with different factors such as macro trends, reversion to long-term equilibrium levels and specific climate factors (transition and physical risk).

Equities and alternatives have a 5% probability of negative returns over the next decade.



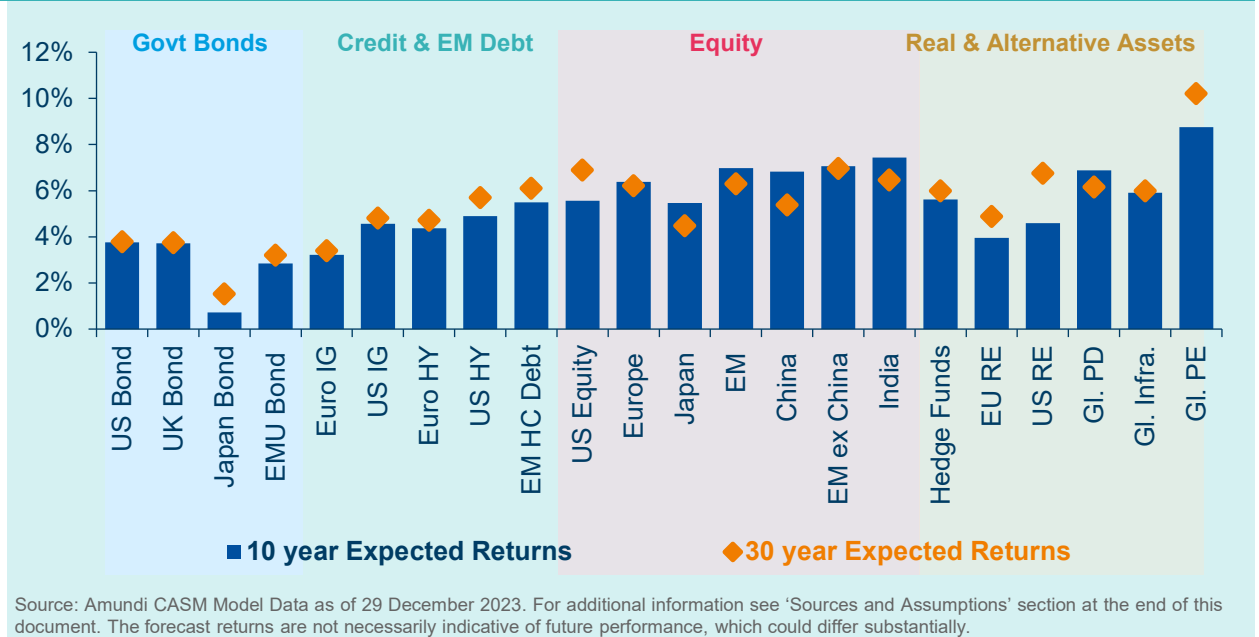


In fact, over a longer horizon, the repricing effect of valuations converging towards equilibrium is diluted, allowing for a better assessment of these long-term trends.

Comparing the 30-year versus the 10-year expected returns, some asset classes offer higher returns, indicating that in the long-term the impacts of negative repricing dissipate and macroeconomic drivers, such as AI productivity gains, represent a tailwind.

This is observed for US equity, Real Estate, Private Equity and for Japan bonds and US High Yield in the fixed income space. Conversely, some equity markets will see a deterioration of return expectations over a 30-year horizon. This is the case for Japan, China, India and, to a lesser extent, Emerging Markets and Europe. For these areas, macro headwinds (demographics, lower growth, lower inflation) and higher physical risks due to the delays in the energy transition will drive lower long-term return potential.

Expectations on a 10- year and 30-year horizon



MAIN ASSUMPTIONS AND LIMITATIONS OF OUR LONG-TERM APPROACH

We assume a 'business-as-usual' case for macro-financial dynamics over a 1-3-year horizon, with more aggressive climate policy action starting from 2027 onwards.

We maintain our modular approach, providing a cascade architecture that insulates the numerous models and focuses on the connection between the various elements of the narrative. This methodology may somewhat limit our field of vision, as the outlook for the granular variables becomes more blurred moving into the long term.

The macro scenarios we simulated are coherent with different active climate policies. These will define the patterns for macro fundamentals (therefore incorporating climate transition), and will eventually be used to derive expected returns.

Our analysis largely relies on first-order effects. Second-order effects and potential tipping points are complex to estimate and are excluded from this analysis. Future innovations are not visible currently and could also alter the results we describe in this report.



Capital Market Assumptions

Assets in local currency	Reference Index	Duration Av. next 10 years	Average Annualised GEOMETRIC		Average Annualised ARITHMETIC	10-year SIMULATE D Volatility	2003-2023 Historical Ann. Returns	2003-2023 Historical Ann. Volatility
			5-year Expected Returns	10-year Expected Returns	10-year Expected Returns			
Cash								
Euro Cash	JPCAEU3M Index	0.2	2.3%	2.2%	2.2%	1.0%	1.3%	0.9%
US Cash	JPCAU3M Index	0.2	3.4%	3.1%	3.1%	1.0%	1.9%	0.9%
Government Bonds								
US Bond	JPMTUS Index	6.1	4.0%	3.8%	3.8%	5.3%	2.9%	5.5%
UK Bond	JPMTUK Index	9.6	4.8%	3.7%	3.9%	6.7%	3.3%	7.8%
Japan Bond	JPMTJPN Index	9.2	0.8%	0.7%	0.8%	3.0%	1.2%	2.6%
Emu Bond - Core	JPMTWG Index	6.9	2.0%	2.2%	2.2%	4.8%	2.5%	5.2%
Emu Bond - Semi Core	JPMTFR Index	7.2	2.6%	2.7%	2.8%	5.0%	2.8%	5.4%
France	JPMTFR Index	7.2	2.6%	2.7%	2.8%	5.0%	2.8%	5.4%
Italy Bond	JPMTIT Index	6.0	3.2%	3.4%	3.6%	7.1%	3.7%	6.7%
Spain Bond	JPMTSP Index	6.6	3.0%	3.2%	3.3%	6.3%	3.4%	5.8%
EMU Bond All Maturity	JPMGEMUI Index	6.8	2.7%	2.8%	2.9%	5.0%	3.0%	5.2%
Barclays Global Treasury	BTSYTRUH Index	6.9	2.8%	2.7%	2.7%	3.7%	3.3%	3.9%
Credit Investment Grade								
Euro Corporate IG	ER00 index	4.5	3.0%	3.2%	3.3%	4.7%	2.9%	4.7%
US Corporate IG	COA0 index	6.8	4.7%	4.6%	4.7%	6.4%	4.1%	6.6%
Barclays Euro Aggregate	LBEATREU Index	6.3	2.8%	2.9%	3.0%	4.6%	2.8%	4.6%
Barclays US Aggregate	LBUSTRUU Index	6.3	4.3%	4.1%	4.1%	4.8%	3.2%	4.4%
Barclays Global Aggregate	LEGATRUH Index	6.7	3.5%	3.4%	3.5%	4.1%	3.4%	3.7%
Credit High Yield								
Euro Corporate HY	HE00 index	2.8	3.6%	4.4%	5.0%	12.2%	6.2%	12.7%
US Corporate HY	HOA0 index	3.3	4.4%	4.9%	5.3%	10.4%	6.5%	10.5%
Emerging Market Debt								
EM Hard Currency Debt*	JPEIDIVR Index	6.7	5.3%	5.5%	5.8%	8.9%	5.7%	9.4%
EM-Global Diversified**	JGENVUUG Index	5.0	5.7%	5.7%	6.3%	11.2%	4.7%	11.8%
GBI-EM China LOC	JGENCNTL Index	5.2	2.5%	3.4%	3.4%	3.6%	na	na
Convertible Bond								
Europe Index (Eur Hedged)	UCBIFX20 Index		3.9%	4.3%	5.3%	15.3%	3.7%	10.1%
Equities								
US Equity	NDDLUS Index		6.5%	5.6%	6.7%	16.6%	9.1%	16.1%
Europe Equity	NDDLE15 index		6.9%	6.4%	7.7%	17.9%	6.4%	15.0%
Euro zone Equity	NDDLEMU Index		6.5%	5.9%	7.6%	19.6%	5.8%	17.8%
UK Equity	NDDLUK Index		7.4%	7.2%	8.0%	14.8%	6.6%	13.4%
Japan Equity	NDDLJN Index		7.1%	5.5%	7.7%	22.6%	6.0%	19.4%
Pacific ex Japan Equity	NDDLJPXJ Index		7.6%	6.5%	7.6%	16.9%	7.6%	15.1%
Emerging Markets Equity	NDLEEGF Index		10.0%	7.0%	8.3%	18.3%	8.1%	16.9%
China Equity	NDELCHF Index		9.6%	6.8%	10.0%	27.2%	6.5%	25.1%
India Equity	NDELSIA Index		8.7%	7.4%	10.4%	25.8%	13.8%	23.3%
EM ex China***	M1CXBRV Index		10.2%	7.1%	8.2%	17.3%	7.3%	21.1%
World Equity	NDDLWI Index		6.7%	5.8%	6.9%	16.8%	8.0%	15.2%
AC World Equity	NDEACWF Index		7.1%	5.9%	7.1%	16.8%	7.9%	15.1%

* Hard Currency USD, China Bond starting date is beginning of 2019. ** USD Unhedged, including the USD currency expectation towards EM currencies. *** LC for expected returns and simulated volatility, USD unhedged for historical statistics. Amundi CASM Model. Data as of 29 December 2023. For further information see the "Sources and Assumptions" section. The forecast returns are not necessarily indicative of future performance, which could differ substantially.



PORTFOLIO CONSTRUCTION

Diversification shines with new asset classes in focus

KEY TAKEAWAYS ON STRATEGIC ASSET ALLOCATION

Portfolio expected returns decrease slightly compared to last year for all investor profiles, as the returns of the investment universe are on average revised down. The final allocation will have to be even more diversified to cope with higher expected volatility in risky assets.

From an asset allocation perspective, and following last year's strong comeback, we continue to see fixed income as a key engine for portfolio returns, in particular high-quality assets.

Higher equity volatility compared to recent decades will require investors to look for additional sources of diversification. Emerging market debt and hedge funds deserve a greater role in strategic asset allocation, particularly for investors with a moderate risk profile.

In the search for more appealing returns, Indian and emerging market equity ex-China are favoured, while investors with a higher level of liquidity risk tolerance should consider private equity.

Real and alternative assets are even more attractive this year as they help enhance portfolio risk-adjusted returns. Investors will have to carefully calibrate their liquidity profile.

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In this article, we present the annual update of the strategic asset allocation (SAA) exercise over a 10-year horizon. The global investment universe is unchanged versus last year, it includes fixed income, equity, and real and alternative assets. We assess the SAA from the perspective of US dollar and euro investors. For each base currency, we consider two risk profiles: moderate (around 6% volatility) and dynamic (around 12% volatility). We also consider an illiquidity tolerance which penalises real and alternative assets relative to public ones, in accordance with investor preference.

Before going through the results of the SAA update, it is worth remarking that, as a consequence of broadly lower expected returns across the universe, our CMA line has partially shifted lower. This explains the reduction of our SAA long-term return prospects for the investor types considered.



Strategic asset allocation for a EURO-BASED INVESTOR

A moderate risk profile for euro investors exhibits an expected return of 4.1% which rises to 4.4% when allowing for investments in real and alternative assets. The most important pillar of the SAA remains the global aggregate space (45-55%), reaffirming the importance of exposure to IG credit and government bonds for investors with a mild risk appetite. The remaining wealth can be distributed across Emerging Market bonds and Global High Yield (around 25% of the portfolio), for which the allocation increases significantly compared to last year’s optimisation. The remaining allocation goes to equities (around 20%, if real assets are not included) with a preference for Developed Markets.

For investors willing to accept some illiquidity risk, a diversified basket of real and alternative assets can partly replace the equity and global aggregate allocations. The addition of these assets improves the **portfolio’s** expected **Sharpe Ratio and marginally reduces the shortfall risk**. Within alternatives, Hedge Funds and Private Debt look more attractive compared to Infra, Real Estate and Private Equity for a moderate risk profile allocation.

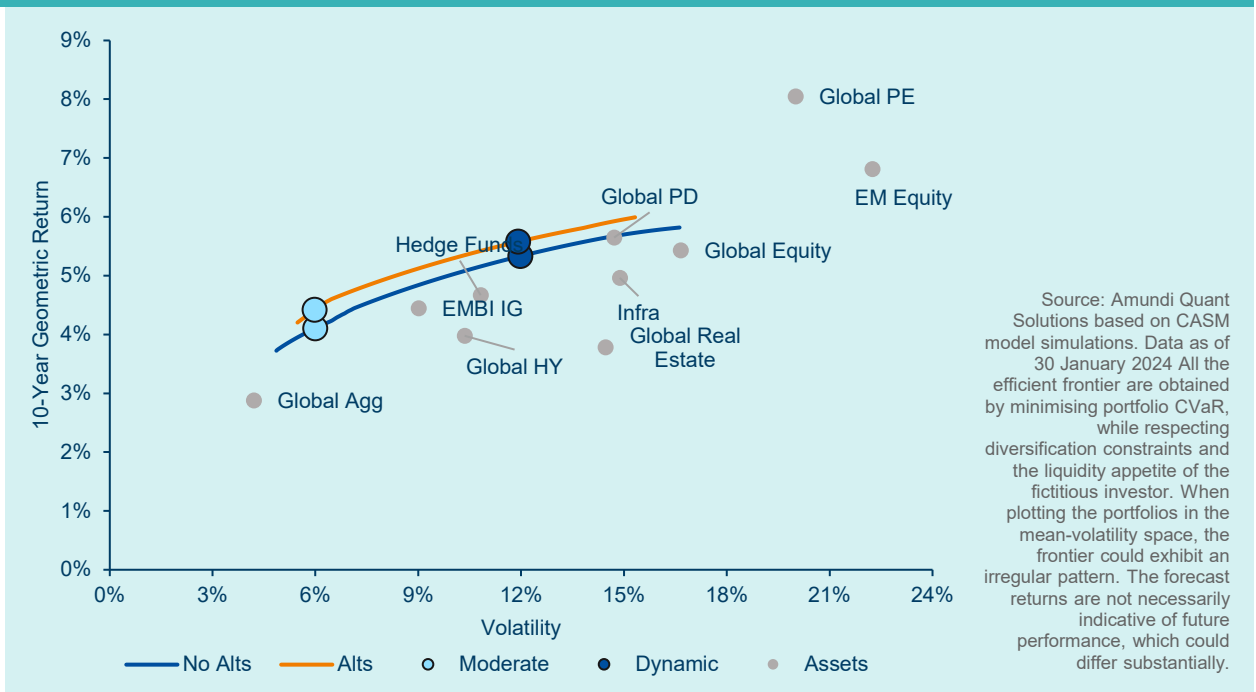
Moving to a more aggressive risk profile, we see return expectations increasing by around 100 bps, ranging between 5.3% and 5.6%. As expected, exposure to high-quality fixed-income assets decreases significantly compared to the more conservative allocation, in favour of a higher allocation to equities to capture growth opportunities. For this dynamic profile, **Private Equity and debt get the lion’s share within alternatives**.

It is interesting to note that the allocation to alternatives is lower for a euro dynamic risk investor compared to the moderate risk one. In fact, for a higher-risk portfolio, the allocation will favour Private Equity as the highest-yielding asset class, but also the most illiquid together with Infrastructure in the investment universe. However, given the liquidity constraints the optimal allocation to alternatives is reduced compared to the moderate portfolio.

EM bonds and alternative assets will be key to enhancing portfolio risk-adjusted returns.

Within real and alternative assets, Hedge Funds and Private Debt are favoured for moderate risk profile investors and Private Equity for investors with a dynamic risk profile.

Efficient Frontier for EUR Investors





Strategic asset allocation for a US DOLLAR-BASED INVESTOR

We expect an annual return of 5% for a **US dollar**-based investor portfolio with a moderate risk profile. The expected return increases to 5.3% when real and alternative investments are added to the SAA. As with the euro investor, **the main portfolio building block is the global aggregate**, with a weight mildly larger than for the euro investor due to the asset's higher expected return hedged to the US dollar. The inclusion of real and alternative assets is financed by a reduction in high-quality fixed income and equity. A combination of Hedge Funds and Private Debt and, to a lesser extent, other strategies, represents the optimal allocation to illiquid assets.

As with the euro investor, the main portfolio building block is the global aggregate.

Moving to the dynamic risk profile, return expectations are close to 6.1%, and 6.4% with alternatives. The allocation to the global aggregate accounts for slightly more than a fifth of the total allocation, while equity is the asset class with the highest exposure. An investor willing to gain additional exposure to **alternatives** will have to reduce the allocation to global aggregate and equity. The addition of the alternatives bucket (similar in composition to the euro dynamic investor) **helps improve the Sharpe Ratio, while keeping the tail risk roughly unchanged.**

Euro & USD 10-year optimised portfolios for Moderate and Dynamic risk profiles

Investor Currency	Euro				US Dollar			
	Moderate		Dynamic		Moderate		Dynamic	
Risk Appetite	Moderate		Dynamic		Moderate		Dynamic	
Asset Universe	No Alts	With Alts	No Alts	With Alts	No Alts	With Alts	No Alts	With Alts
Portfolio Statistics								
Geometric Exp. Return	4.1%	4.4%	5.3%	5.6%	5.0%	5.3%	6.1%	6.4%
Exp. Volatility	6.0%	6.0%	12.0%	11.9%	5.9%	6.0%	11.9%	11.9%
Sharpe Ratio	0.33	0.38	0.27	0.29	0.32	0.36	0.25	0.28
CVaR 95% at 10-Year	-0.9%	-1.4%	2.1%	1.9%	-2.5%	-2.6%	0.8%	0.9%
Max Drawdown 95%	22.2%	22.3%	55.7%	55.2%	19.3%	20.9%	50.5%	52.0%
P(Ret < 0) at 10-Year	0.4%	0.2%	6.6%	5.8%	0.0%	0.0%	3.4%	3.5%
Arithmetic Exp. Return	4.2%	4.5%	5.9%	6.1%	5.1%	5.4%	6.7%	6.9%
Portfolio Composition								
Global Aggregate	54%	48%	16%	13%	57%	48%	21%	15%
EMBI & Global HY	25%	18%	25%	19%	25%	21%	25%	19%
DM Equity	16%	8%	44%	37%	14%	8%	41%	35%
EM Equity	5%	3%	15%	12%	5%	2%	14%	12%
Real and Alternative Assets	0%	24%	0%	19%	0%	21%	0%	19%
Global PE		5%		6%		5%		6%
Global Real Estate		2%		2%		2%		2%
Infrastructure Equity		3%		2%		4%		2%
Global Private Debt		7%		6%		4%		6%
Hedge Funds		7%		3%		6%		4%
Changes vs Last Year								
Global Aggregate	[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]	
EMBI & Global HY	[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]	
DM Equity	[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]	
EM Equity	[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]	
Real and Alternative Assets	[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]		[Bar chart showing change]	

Source: Amundi Quant Solutions based on CASM model simulations. Data as of 30 January 2023. The efficient frontier is obtained by minimising portfolio CVaR at the 10-year horizon, while respecting diversification constraints and the liquidity appetite of the fictitious investor. A negative value for CVaR means a positive compounded return over 10 years. Real and Alternative assets include Global Private Equity, Global Real Estate, Infrastructure Equity, Global Private Debt, Hedge Funds. The forecast returns are not necessarily indicative of future performance, which could differ substantially.



A euro vs US dollar-based investor comparison

Like last year, a US dollar-denominated investor will benefit from higher returns than a euro investor. However, portfolios denominated in euros show higher expected Sharpe Ratios due to the lower risk-free rate.

- The inclusion of a **diversified basket of real and alternative assets is beneficial in terms of portfolio efficiency**, demonstrated by a higher Sharpe Ratio and lower shortfall risk.
- The positive effect of having alternatives in the portfolio diminishes for a US dollar-denominated investor, or when the risk profile increases from moderate to dynamic. This first instance is mostly explained by the higher correlations between alternatives and traditional assets for a US dollar investor. While the second is a function of the illiquidity ceiling constraint.
- The dynamic euro portfolio is more tilted towards equity than the US dollar one, with the latter having more exposure to the global aggregate. This can be explained by the **higher return profile the US dollar investor can get from fixed income assets**.

Portfolios denominated in euros show lower nominal returns compared to US dollar portfolios, but higher expected Sharpe Ratios due to the lower risk-free rate.

Amundi methodology for determining strategic asset allocation

The investment universe is global top-down and includes fixed income, equity and real and alternative assets. We consider the SAA from the perspective of US-dollar and euro-based investors. The fixed income assets are fully hedged, while equity and alternatives are unhedged against the investor's currency. The currency hedging is obtained by applying the expected cash yield differential (local minus foreign) to foreign asset prices. Unhedged expected returns are obtained by incorporating the currency cross's expected return to foreign asset prices. For each asset class, we simulated 10,000 scenarios over a 10-year horizon using the Amundi CASM model.

The scenarios are consistent with Amundi's medium and long-term macroeconomic forecasts and climate transition model. The underlying return distributions are modelled with fat tails, tail co-dependence and heteroskedastic volatility, which are important elements when modelling portfolios containing alternative asset classes. Our optimisation framework minimises the Conditional Value at Risk (CVaR) of an expected return distribution to build an efficient frontier. The tail risk, which is peculiar for real and alternative asset classes, motivated our choice of a CVaR minimisation approach.

A liquidity rank is assigned to each asset class. The investor's liquidity preference is reflected by a linear constraint whereby the total liquidity budget of the optimal portfolios cannot exceed a specified level. Every asset class is given a liquidity rank based on several characteristics, including time horizon, cash flow curve and liquidity among others. The investor's liquidity preference for this exercise is set to medium; this choice allows careful control of the allocation to alternative asset classes, thereby aligning the SAA to the investor's market and liquidity risk profile.

Additionally, we have included group constraints to limit the exposure to alternative fixed income (EMBI, global high yield and private debt), as well as to EM, and real and alternative assets. These constraints are equal for euro and US dollar investors and represent a medium-risk appetite. We also included some diversification constraints to balance the real and alternative baskets. The different SAA are simulated assuming a yearly rebalancing rule, selected as a compromise between different rebalancing frequencies according to asset class liquidity. Finally, each return statistic comprises a rebalancing premium ranging from 40 to 60 bps depending on the portfolio.



ASSET CLASS VIEWS

Real and Alternative Assets in Focus

Our 2024 CMA outlines attractive risk/return profiles for real and alternative assets (see chart below) and confirms the additional performance of these assets versus listed ones, linked to their remuneration for their liquidity risk exposure.

Private Equity is confirmed as the asset to look at in the search for more appealing returns. The higher cost of capital, compared to previous decades could represent an issue for some Private Equity GPs*. In fact, it makes the use of leverage less appealing and forces GPs to focus more on cost rationalisation and margin expansion, making selection in Private Equity even more important than in the past. Strategies that employ high debt levels could have a hard time finding the desired returns compared to Growth and VC strategies. Among the megatrends affecting the asset class there is the use of Artificial Intelligence which could represent a tailwind for both LPs and GPs in screening opportunities, reducing due diligence costs, and generating efficiencies within portfolio companies. Overall, our 10-year expected returns for the Global Private Equity aggregate, mainly represented by Buyout strategies, are reduced due to lower prospects for public equities and to the lower expected value add from these strategies.

Infrastructure returns are mainly driven by public equity returns and inflation trends. However, as shown previously, the former are expected to be below historical norms mainly as a consequence of high starting valuations. And given we expect inflation to remain slightly above CB targets on average, Infrastructure should benefit from indexation mechanisms typical of their contract structure. Physical risk may represent an important factor affecting future returns. On the one hand, extreme climate events with increasing frequency could generate material losses. On the other, significant Capex aimed at climate mitigation and adaptation will be beneficial for the Infrastructure asset outlook.

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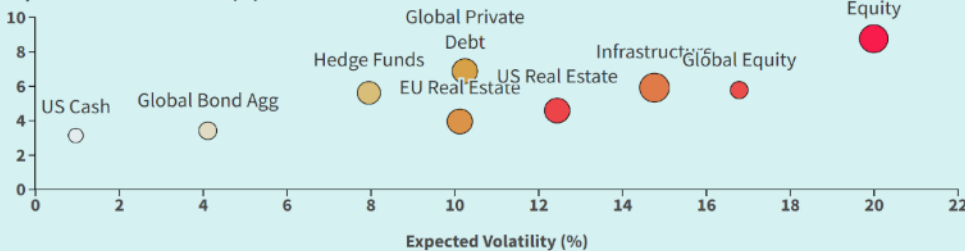
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*A private equity firm is called a general partner (GP) while the investors are called limited partners (LPs) and generally consist of pension funds, institutional investors and wealthy individuals. VC is Venture Capital.

10-year expected returns, volatility, shortfall and liquidity risk** in local currency

Shortfall Risk (%) 0 37

Expected Return Geometric (%)



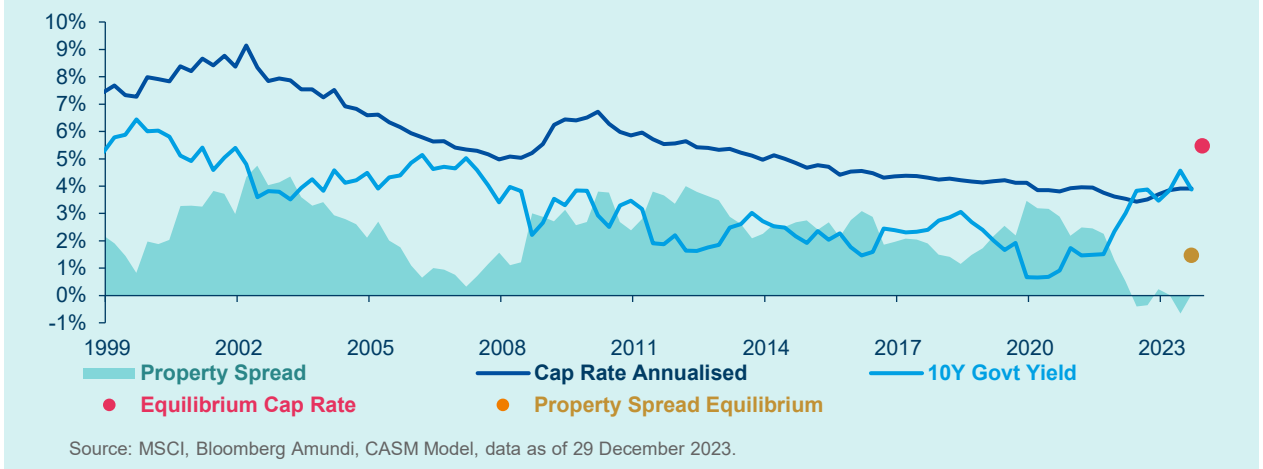
Dot size represents the liquidity risk embedded into each asset class (big means less liquid)

Source: Amundi, CASM Model, data as of 29 December 2023. Real estate refers to all property unlevered real estate. Private equity and Infrastructure returns are net of fees. The expected returns do not consider the potential alpha, generated by portfolio management that can be significant above all for real and alternative assets.

**Shortfall Risk is defined as the 95% CVaR based on the distribution of the year-on-year simulated returns at the 10-year horizon. The liquidity risk is defined as a liquidity rank based on several characteristics, including time horizon, cash flow curve and liquidity among others.



US Real Estate valuations still look expensive, while our illiquidity yield estimate has reached our long-term equilibrium



The model for **Real Estate** is enhanced to account for valuations and fundamental data about properties held in professionally managed portfolios. The purpose of our new approach is being able to establish relationships between Real Estate fundamental value drivers and macro/financial variables.

Based on the latest available information, the US all properties aggregate valuation is currently not attractive as the property spread is significantly below our equilibrium level. In Europe, valuations are still somewhat expensive, however, less so than for the US market. Rental growth staying in line with equilibrium levels and net income reverting to long-term targets are not enough to offset these current expensive valuations, especially in the US. Hence, unlevered Real Estate assets are expected to deliver a return slightly above 4%, below last year’s forecasts and close to high grade corporate bonds. However, we expect levered real estate returns to be marginally better, as leverage is not an attractive option at the moment due to the high cost of debt.

Real Estate Model – Methodology

Our new approach breaks down the asset class total return into building blocks – as we do for other assets – where income, growth and valuation represent the most important ones. The most relevant fundamentals are property rents, capital expenditure (Capex) and the capitalisation rate (cap rate), which is the most common return on investment measure for Real Estate assets*. While future rental growth can relate reasonably well to inflation and economic expansion (i.e., nominal GDP), the cap rate evolution is more challenging to estimate. This rate can also be thought of as a risk premium once it is compared to the 10-year government bond yield to derive the property spread. The lower this spread is relative to an assumed equilibrium level, the higher the current asset class valuation. A similar approach can be applied to equity markets with the well-known Fed Model.

The property spread in equilibrium is derived from our expectations about future corporate spreads and equity returns. The rationale for including corporate spreads in the property valuation model is to link real estate valuations to credit line access for property buyers. While the inclusion of equity capital market movements allows us to capture the positive link between equity prices and property values, which in turn should make property spreads narrower. Combining our interest rate expectations with the property spread, we calculate the equilibrium cap rate.

In addition to estimating growth and valuation return components, we take property income into account, proxied by operating income adjusted for Capex and physical risks as well. The latter will inevitably affect properties even more in the long term due to the increased frequency of extreme climate events.

We thank our colleagues Thomas Baron and Nicholas Holford for their support and insights while building this new model.



Real Estate is challenged by expensive valuations, even if the asset class’s expected income and rental growth are in line with historical averages

* Capitalisation rate (or cap rate) is expressed as net operating income divided by the property value, where net operating income is represented by the difference between rental income and the costs for managing the property itself (Opex) and the taxes.



Hedge Funds' expected returns model is based on premia on top of a cash contribution. We do not model any alpha contribution (which is unpredictable over the long run) and returns are gross of fees. Cash rates, which have become a key variable for hedge funds, are expected to be little changed compared to last year's forecasts. The change in hedge funds' long-term return expectations thus mostly reflects lower expected returns from equity and credit. Hedge funds are still expected to deliver a risk/return profile similar to that of fixed income assets.

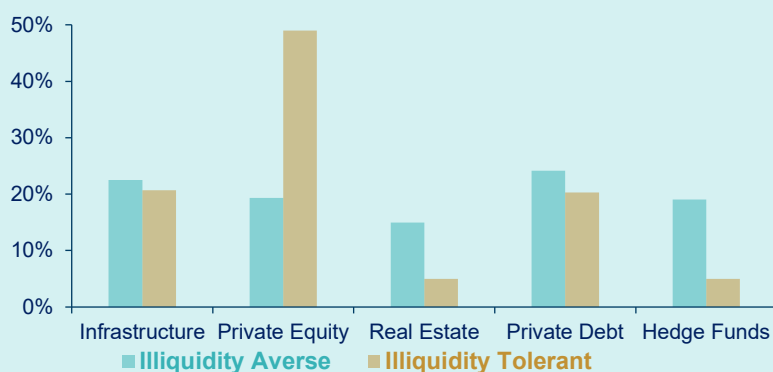
Private Debt remains attractive and its risk-adjusted profile stands out when compared to liquid fixed income investments and moderate-risk assets. Our estimates of the illiquidity premium are now in line with the long-term average level. The asset class can benefit from its floating rate structure and an environment of generally high interest rates.

Building block approach to alternative investing. The appealing risk-return and diversification characteristics of real and alternative asset classes make them a perfect tool for improving portfolio efficiency and explain rising institutional investors' demand for these assets. However, having an allocation to assets that are not frequently valued and with capital being locked up for many years can provide investors with mark-to-market and rebalancing challenges. Therefore, an investor could decide to manage this portfolio building block separately from the rest of their liquid assets.

We show the result of an optimisation minimising portfolio CVaR over a 10-year horizon for a US dollar-denominated portfolio. To assess how an allocation to an alternative assets building block may evolve when illiquidity and risk tolerance change, we consider two types of investors :

- 1. An Illiquidity-Averse investor** could be a **family office** with a focus on income generation. This investor would most likely need a shorter cash-flow curve, lower extension risk and a more mature secondary market to potentially enable portfolio rebalancing. The Illiquidity Averse portfolio shows a balanced allocation with Private Debt and Hedge Funds, characterised by a higher degree of liquidity, and Infrastructure, thanks to its diversification features.
- 2. An Illiquidity-Tolerant investor** could be a **pension fund with long-dated liabilities** that **favours growth assets**. This investor could expect to earn more than 100 bps in extra returns compared to the Illiquidity Averse. However, beyond the incremental illiquidity of the portfolio, this incremental gain comes at a cost in terms of higher volatility and CVaR. The Illiquidity-Tolerant portfolio would favour less liquid and return-seeking assets such as Private Equity, at the expense of Real Estate which does not provide sufficient risk-adjusted returns for its level of illiquidity. Hedge Funds are also less favoured by a growth-oriented investor, due to their low return potential among real and alternative assets. Notwithstanding the positive return premium captured by the more illiquid portfolio, every investor must carefully calibrate their respective preferences in terms of the liquidity of assets, cash flow structure, the efficiency of secondary markets and the opportunity cost of locking in capital for a long horizon.

Optimised weights of the two alternatives portfolios on a 10-year horizon



	Averse	Tolerant
Return	6.8%	8.0%
Volatility	10.4%	13.7%
CVaR 95%	21.1%	27.4%
Sharpe Ratio	0.36	0.35

Source: Amundi Quant Solutions based on CASM model simulations. Data as of 29 December 2023. portfolios are obtained by minimising portfolio CVaR, while the liquidity appetite of the fictitious investor. The forecast returns are not necessarily indicative of future performance, which could differ substantially. Expected Returns, Volatility, CVaR and Sharpe Ratio are simulated statistics over 10-year horizon. Assets are sorted based on their illiquidity profile, with the most illiquid asset placed to the left.



PORTFOLIO CONSTRUCTION

Equity sectors: a mix of Growth and Value should benefit from AI and climate change over the next decade

KEY TAKEAWAYS

In terms of expected returns, a mix of Value and Growth sectors are due to outperform over the next decade, with Healthcare and Financials as frontrunners.

Energy is the most negatively affected by ESG and climate change dimensions while Information Technology (IT) is the most overweight in these indices.

Artificial Intelligence (AI) will primarily benefit Healthcare, IT and Communication Services.

A net zero transition with geopolitical risks and nearshoring trends will favour Utilities at the expense of Energy, Materials and Industrials, while Consumer sectors will be less in favour.

The expected returns outcome is mixed between Growth and Value sectors. Among the top-performing global sectors in our ranking, one is classified as Growth (Healthcare) and one as Value (Financials). Among the first six, there is a perfect parity as Industry and Utilities are more Value-leaning sectors and Communication Services and IT are more Growth.

The combination of ESG and climate indices composition, and low carbon and net zero risk premia is mostly negative for Energy and positive for IT. This impact on expected returns is shown on the x-axis of the chart on the next page. Potential flows, due to index compositions, should mostly positively impact IT and negatively impact Energy and Staples. Otherwise, at a global level, Real Estate, Healthcare, Financials and Industrials are positively tilted, with the opposite for Materials.

Responses to climate change should favour Utilities to Materials and Energy, with Japan as an exception. Utilities are increasingly driven by renewable energy companies versus 'traditional' producers. Renewable energy names could face some pressure from higher rates, but this should be balanced by a structural shift towards low carbon and green energy, supported by government transition initiatives across regions such as the United States' Inflation Reduction Act and the European Green Deal. **Energy**, the sector most affected by net zero policies, should see the demand for oil, gas and coal peak sometime in the next decade. High returns in Emerging Markets (EM) and Japan reflect firms in these regions' deep discounts.

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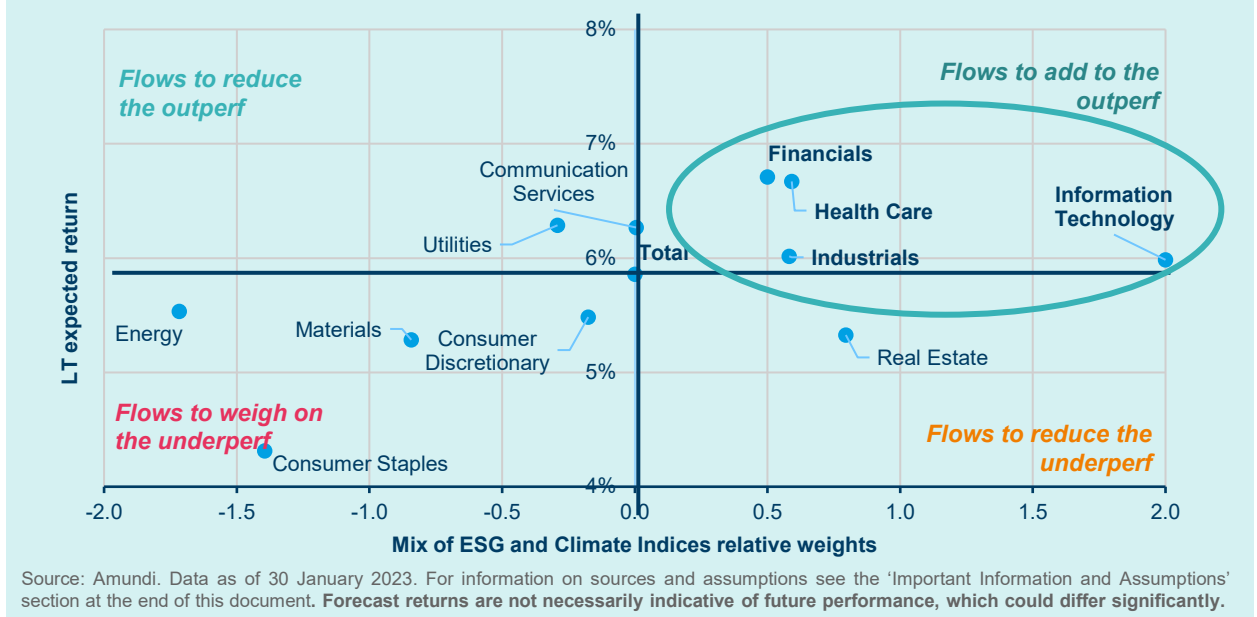
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Rising demand for climate change and ESG indices over the next decade should benefit IT, while Energy will likely suffer.



MSCI ACWI - LT Expected Returns & Index weights



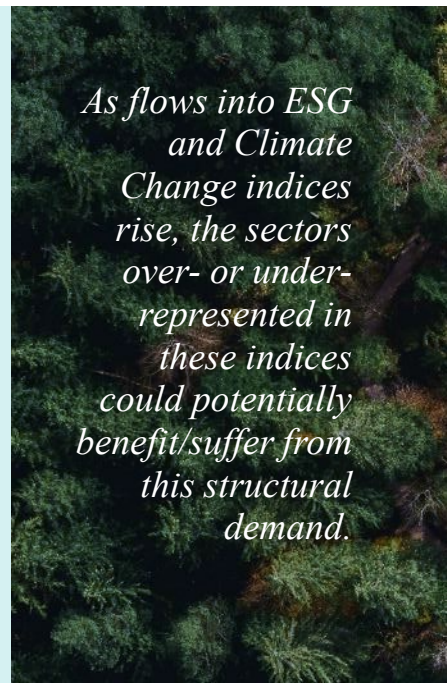
With declining oil markets, firms have changed their focus on shareholder returns. **Materials** face the opposing stories of slowing China growth on one hand and increasing demand for certain metals fuelled by the net zero and AI transitions on the other. While the former should be a drag overall, the latter should boost the Mining subsector. The overall impact should differ across regions, as the sector is dominated by Mining names in the Pacific ex-Japan / EM and by Chemical names in the US, with Europe somewhere in between.

Industrials should benefit from transformation needs (climate change, but also geopolitics and nearshoring). **Industrials** stand to benefit from higher investment in a variety of areas such as electrification, energy efficiency and independence, and public transport systems and their infrastructure. Another key theme for the sector is structurally higher defence spending, as countries outside of the US aim to compensate for years of underspending, spurred on by the evolving geopolitical situation.

Consumer Discretionary is better than Staples but both are below average globally. Within **Discretionary**, high growth and strong margin areas, such as Luxury Goods, are likely to be offset by low growth and weak margin segments such as Autos in Europe.

Amundi methodology to account for ESG and Climate Change

Expected returns for sectoral indices are broken down into three components: long-run earnings growth, expected change in valuation and income. To assess the impact of ESG and climate change we analyse the sector allocation of the relevant ESG (MSCI ESG Leaders – best in class, the MSCI ESG Universal – broad and diversified and the MSCI ESG Focus – optimisation process) and climate indices (MSCI Low Carbon – best in class, the MSCI Climate Change – broad and diversified, and the MSCI Climate Paris Aligned – optimisation process). The over- or under-representations highlight the sectors that should potentially benefit/suffer from the flows related to these themes. This is represented on the X-axis of the chart. We have taken them into account in the expected change of valuation, together with low carbon and Net Zero risk premia (which is new).



As flows into ESG and Climate Change indices rise, the sectors over- or under-represented in these indices could potentially benefit/suffer from this structural demand.



In the US, despite the inclusion of two ‘Magnificent 7’ companies (Tesla and Amazon) the sector is not able to match the return expected for the market.

Staples, a defensive sector, is out of favour across regions. While higher inflation could provide some support to its top line, we expect the sector to struggle given high valuations. Widespread changes in consumer trends could be another cause of concern. Higher rates are unlikely to help either.

Healthcare, IT and Communication Services are among the beneficiaries of AI and should outperform, with regional differences. **Healthcare**, a quality defensive sector, should be a clear winner over the next decade. An ageing global population will have extensive and diverse medical needs. Biotech and pharmaceutical companies consistently invest in Research and Development (R&D), and AI is expected to be a game changer in this process. IT remains just above average for the next decade. The long-term nature and broad scope of AI are likely to deliver strong growth but counterbalanced, to some extent, by high valuation levels. The US and EM maintain some advantage over Europe and Japan. **Communication Services** in the US and Japan is Tech-adjacent and should benefit from the same themes, which is reflected in its expected returns. In Europe, it is mainly Telecoms, which face a tricky mix of high leverage and high regulation. Combined on the ACWI level, it stands out above average.

Financials better than Real Estate in a rising rates environment. **Financials** were dragged down by the ultra-low interest rate environment of the previous cycle. Since the pandemic we have moved away from a world of persistently low inflation and low rates. In such a scenario we expect Financials to outperform, particularly in Europe and Japan given their low valuation starting point. Income should remain a major contributor to sector returns. **Real Estate** on the other hand is likely to underperform over the coming years as higher rates weigh on property prices and housing activity. This will be less so in EM where rates regimes haven’t undergone as drastic a change as in developed markets and the use of mortgages is less common. Valuation is also cheap in EM, as it is for Pacific ex-Japan.

Artificial intelligence will mainly benefit Healthcare, IT and Communication Services.

Financials are set to outperform particularly in Europe and Japan.

Long-term expected returns adjusted by flows

	USA	Europe	Japan	Pacific ex Japan	Emerging	World AC
Consumer Discretionary	5.3%	6.3%	6.8%	5.4%	4.4%	5.5%
Consumer Staples	4.2%	5.0%	3.9%	6.2%	2.5%	4.3%
Energy	4.8%	6.2%	8.4%	4.6%	7.4%	5.5%
Financials	5.7%	8.9%	9.9%	5.2%	7.6%	6.7%
Real Estate	4.5%	2.9%	5.2%	8.9%	8.7%	5.3%
Health Care	7.3%	6.6%	2.9%	2.6%	2.1%	6.7%
Industrials	5.6%	6.8%	5.4%	7.8%	6.4%	6.0%
Information Technology	6.0%	5.2%	4.7%	6.7%	7.1%	6.0%
Materials	4.9%	4.9%	6.7%	6.2%	5.8%	5.3%
Communication Services	6.5%	6.0%	9.7%	8.4%	4.0%	6.3%
Utilities	6.2%	6.5%	3.1%	6.7%	7.3%	6.3%
Total	5.6%	6.4%	5.5%	6.5%	7.0%	5.9%

Source: Amundi. Data as of 30 January 2023. Green colour highlights the best-performing sectors in each region. For information on sources and assumptions see the ‘Important Information and Assumptions’ section at the end of this document. **Forecasted returns are not necessarily indicative of future performance, which could differ substantially.**

ASSET CLASS ASSUMPTIONS

DEC 2023 - DEC 2033

Cash and fixed income

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Equity

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Foreign Exchange

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ASSUMPTIONS

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.

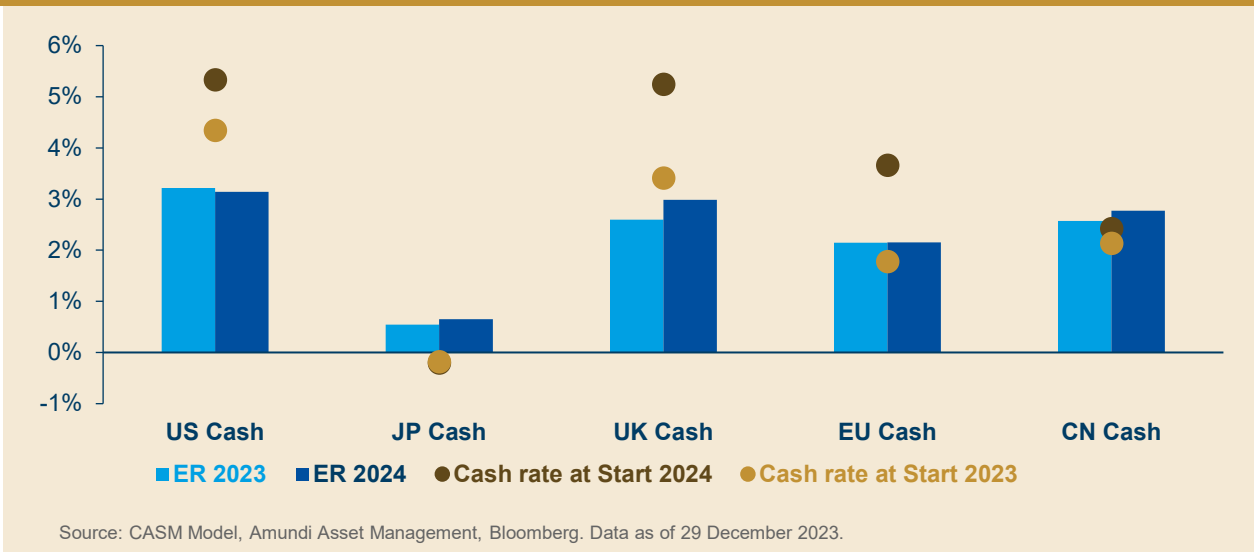
We see a marginal reduction in returns across the credit assets space. High Yield (HY) and Emerging Market (EM) bond spreads are expected to widen towards equilibrium levels. However, EM bond returns are still expected to remain highly attractive.

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.

10-Year Expected Returns for Cash





ASSUMPTIONS

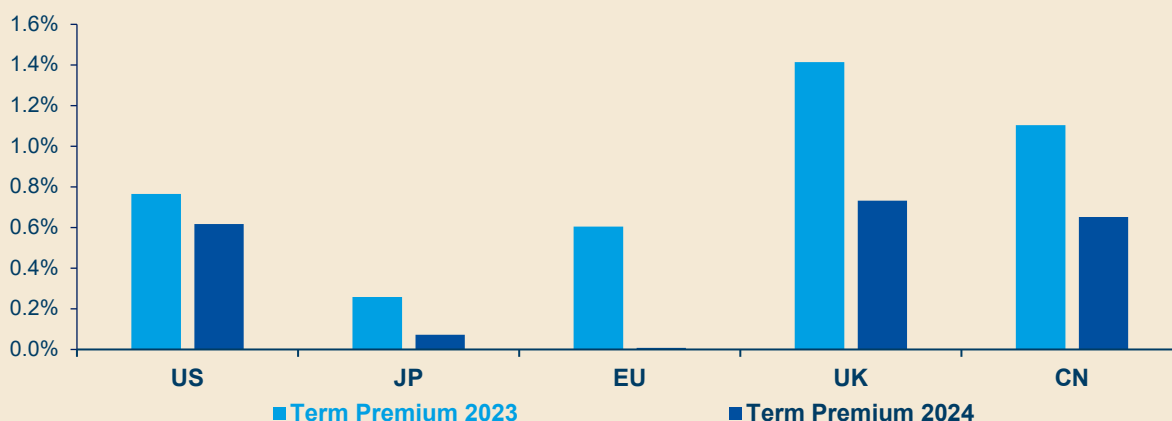
Expected returns 10-year expected returns for cash are pretty much aligned with last year’s expectations, notwithstanding the fact that the pattern we expect from current yields to the long-term targets has changed because of the different starting point, the dynamics of monetary policy and long-term 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.

10-Year Expected Term Premium for Main Countries



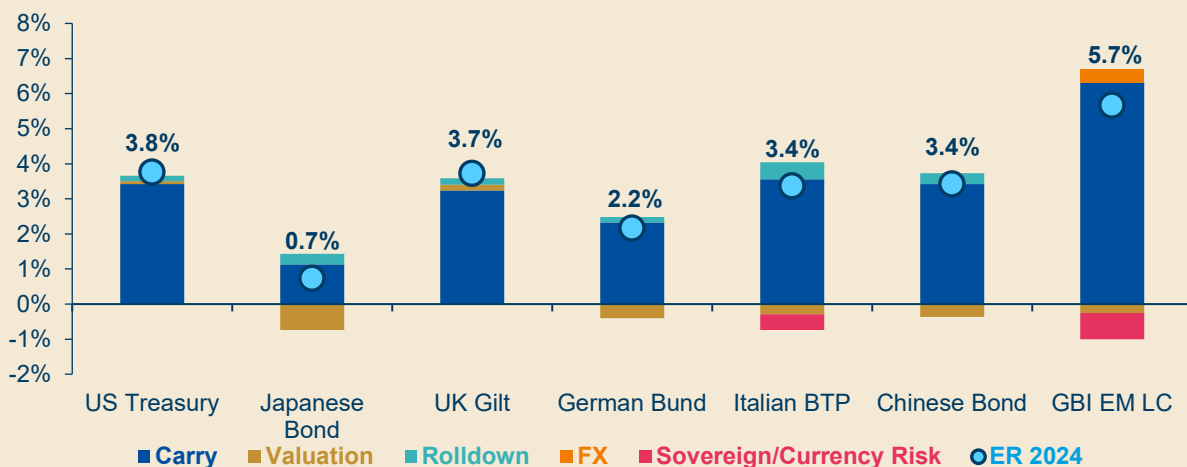
Source: CASM Model, Amundi Asset Management, Bloomberg. Data as of 29 December 2023. Term premium approximated by the difference between the bond index’s expected return and expected short rate.

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.



ASSUMPTIONS

10-Year Expected Returns Decomposition for Bonds



Source: CASM Model, Amundi Asset Management, Bloomberg. Data as of 29 December 2023. Fixed income asset expected return is broken down into: **Carry**, proxied by the par government or credit yield, **Rolldown**, the effect on bond price generated by the passage of time, **Valuation**, the effect on bond price generated from government yield and spread moving, **Sovereign/ Currency Risk**, impact for being exposed to sovereign and currency risk, **FX**, performance associated to the FX exposure vs USD.

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.

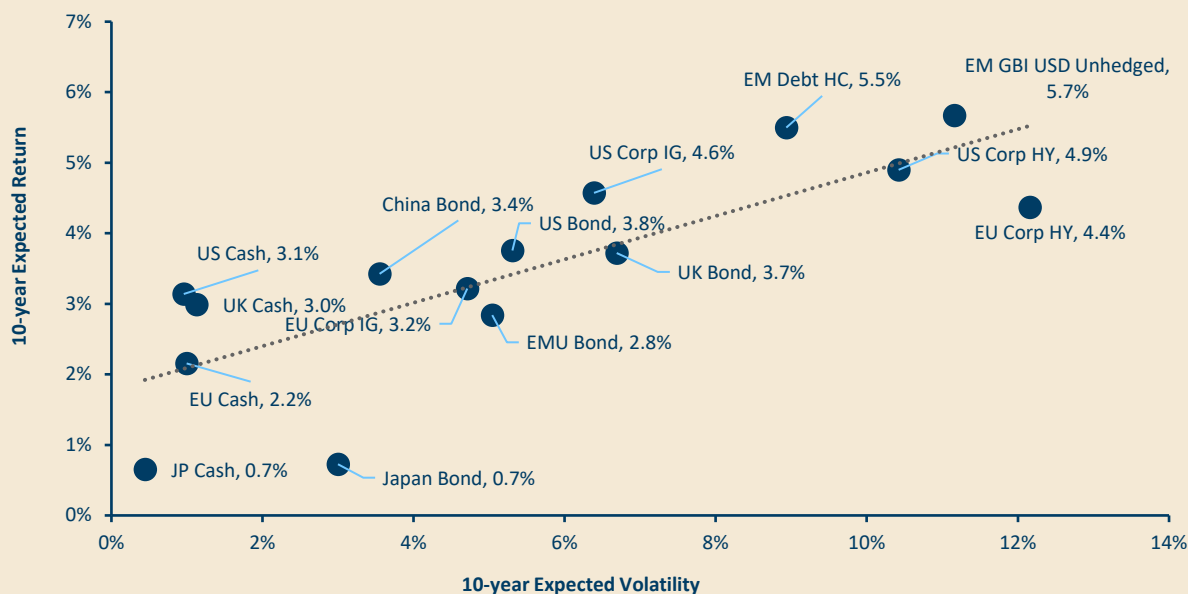
Credit and EM bonds

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.



ASSUMPTIONS

Risk-Return Trade-Off: Credit versus Govies

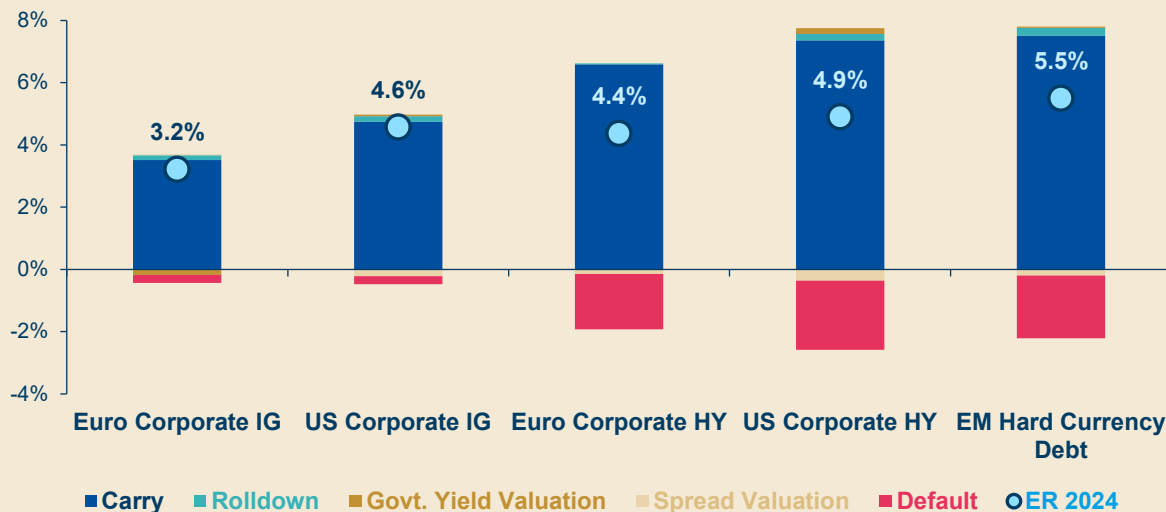


Source: CASM Model, Amundi Asset Management, Bloomberg. Data as of 29 December 2023.

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.

10-year Expected Returns: Decomposition by Factor



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 Roll-down: the effect on bond price generated by the passage of time and other residual due to not linear components and simulation effect.



ASSUMPTIONS

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.

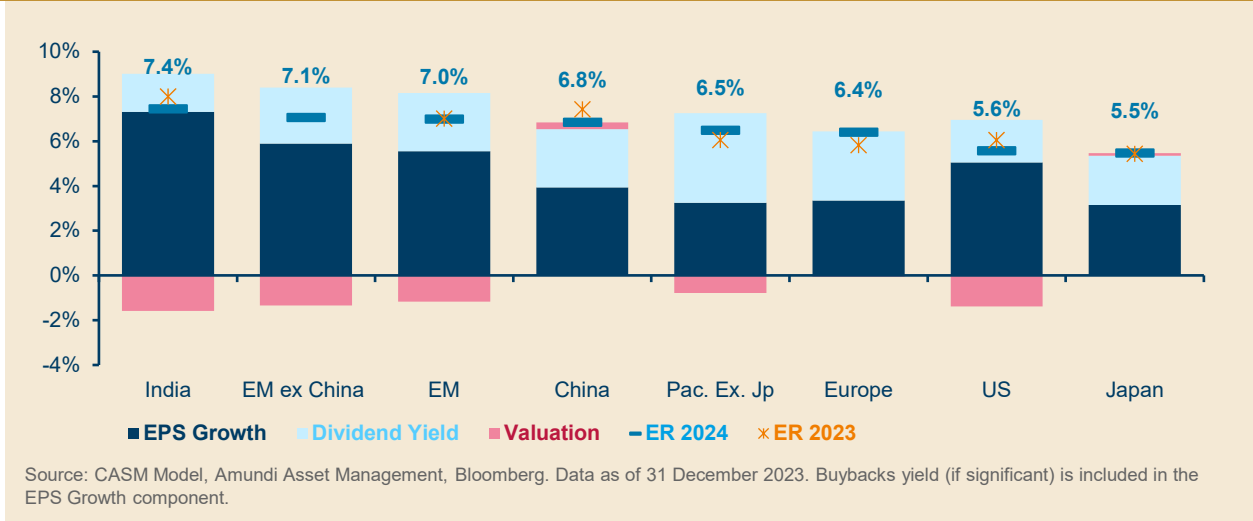
Our scenario on **Chinese** equity is aligned with the prevailing conditions today, characterised by low investor appetite amid regulatory uncertainty and geopolitical risks. We are cautious about Chinese macro and fundamental assumptions (with the most recent update on the long-term inflation environment). 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.



ASSUMPTIONS

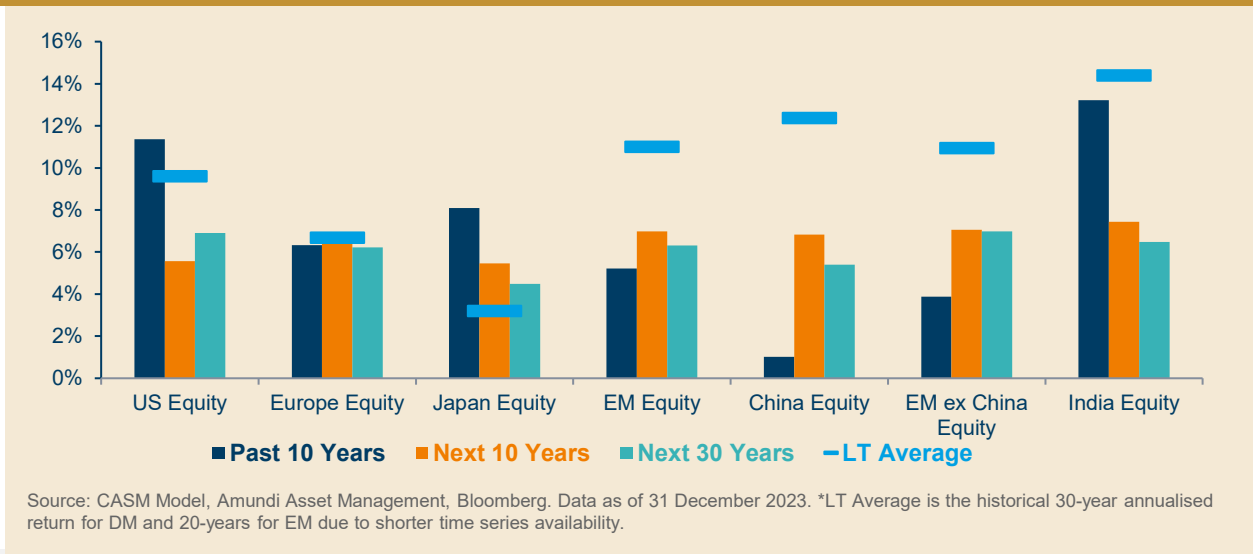
10-year Expected Returns: Breakdown by Factor



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.

Next 10- and 30-years Expected Returns vs History





ASSUMPTIONS

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.

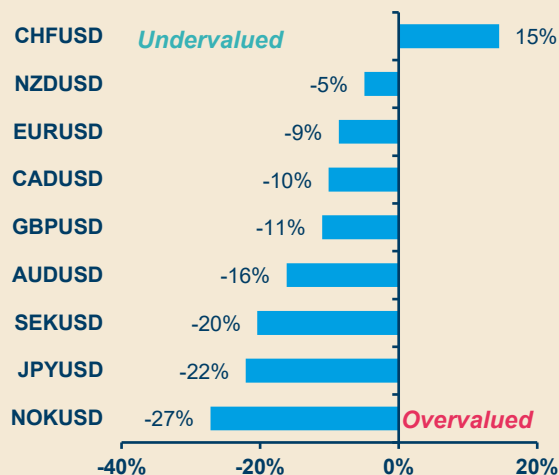
The post-pandemic reopening and global supply chain bottlenecks in 2021 induced a rapid increase in cost inflation, with broader commodities indices surging and peaking in 2022. Commodity-importing countries experienced a negative terms of trade (TOT) shock and a steep increase in production costs, which 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 higher growth potential and, more importantly, the huge amount of negative-yielding 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.

G10 FX over/under valuations vs long-term fair values



Source: Amundi Investment Institute. Data as of 29 December 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-Samuelsan 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.

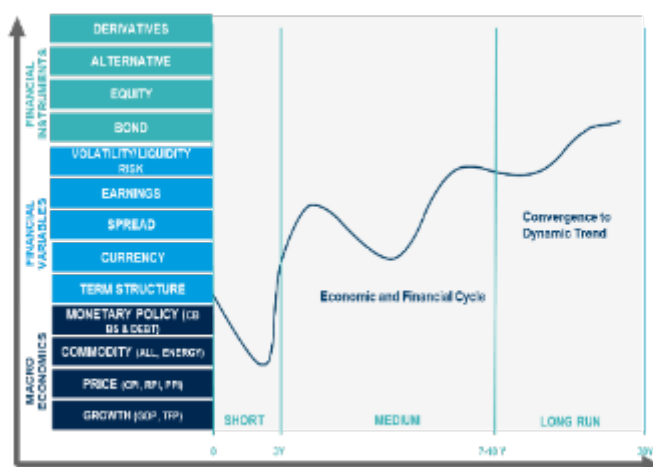
We estimate model parameters quarterly to incorporate new market data and our short-term outlook. The process for calibrating models that reflect our view of economic and financial market trends is a close collaborative process between many teams at Amundi.

We reach a consensus for the short-to-medium-term outlooks for macro and financial variables for each region under consideration (US, Eurozone (core, semi-core 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 in-house 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.

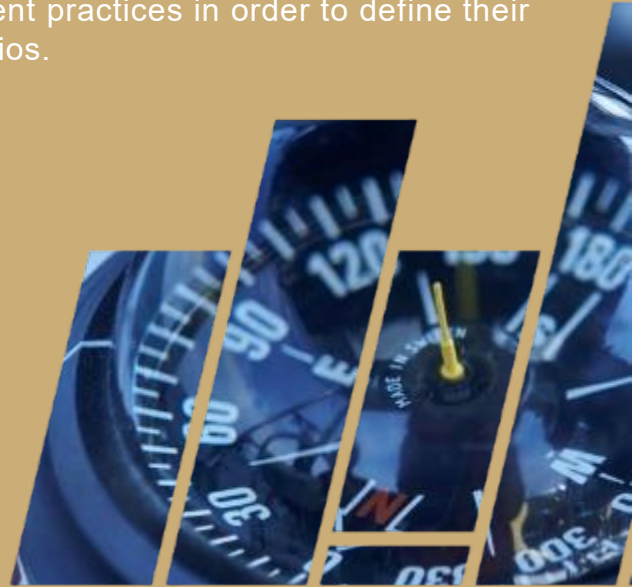
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Amundi Investment Institute

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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