

# Capital Market Assumptions

Themes at a glance | July 2024

## Asset Class Returns Forecasts

**Macro assumptions are confirmed:** Our long-term model assumptions reflect a disorderly and delayed energy transition that incorporates secular trends and uncertainties, both of which influence price trends and volatility. Our current outlook anticipates some enhancement in macroeconomic conditions and fundamentals. In the medium term, the reduction of transition risks and productivity gains driven by Artificial Intelligence (AI) may lead to more stable inflation patterns. Interest rates are expected to stabilise on levels consistent with our scenario of positive interest rates. The annual publication describes the macro outlook in more detail.

**Update on Valuations:** Equity returns are expected to be marked by moderate earnings growth and decreased valuation multiples. The valuation component partially mitigates the positive implications from the macro scenario, particularly for US equities. Recently updated DM equity 10-year expectations showcase differences across regions. The significant price increases in EM regions and the US over the latest quarter is negative for future returns. Government bonds see some improvements in their expected returns driven by higher starting yield levels. On the other hand, credit bonds are mostly unchanged.

**Risk-Return trade-off:** The capital market line maintains its previous shape, which is quite flat versus historical norms. In this context, alternatives can be helpful to generate higher returns, and fixed income remains a fundamental building block of multi asset portfolios.

**Focus on India:** India's inclusion into GBI-EM highlights the importance of incorporating the local government market into the GBI-EM aggregate, both as part of the overall index, and as standalone assets.

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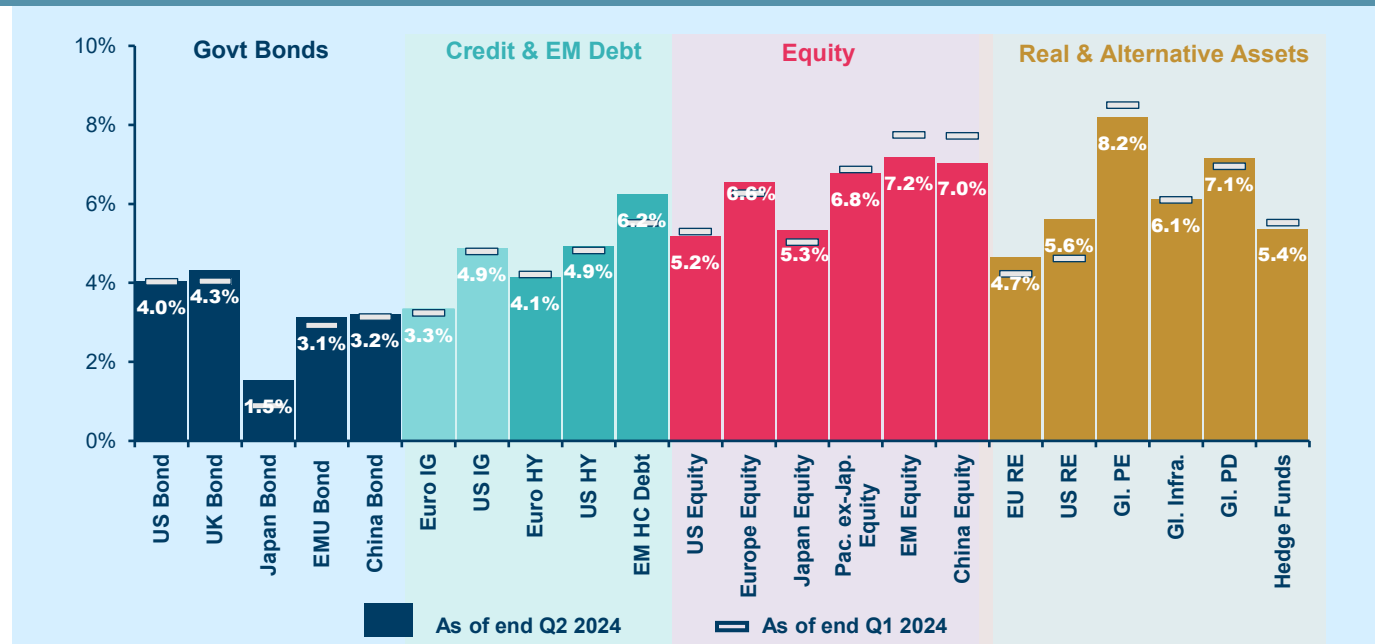
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FIGURE 1: 10-Year Expected Returns



Source: Amundi Asset Management CASM Model, Quant Solutions and Amundi Investment Institute Teams. Full source on page 6.

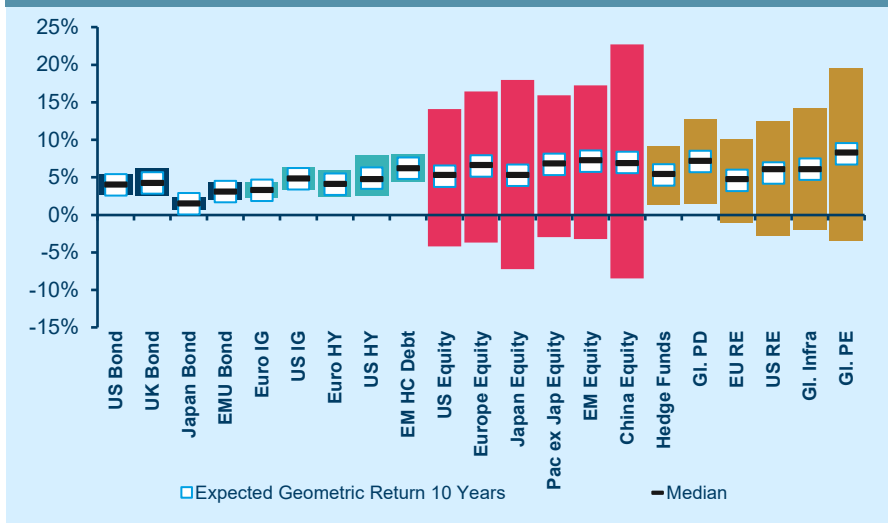
## Adding the Risk dimension

The chart reports the 5th and 95th percentile range for our simulated 10-year annualised geometric returns. This represents a measure of the dispersion of expected outcomes around the average of the distribution, namely our central scenario. The dispersion increases with the riskiness of the asset class. Equities, public and private, top the list in terms of distribution width: these assets show a 5% chance expected returns over 10-year horizon will be below zero, and even lower than -5%.

Bonds display a much narrower distribution thanks to their lower volatility and to the carry component which provides stability to the forward looking return.

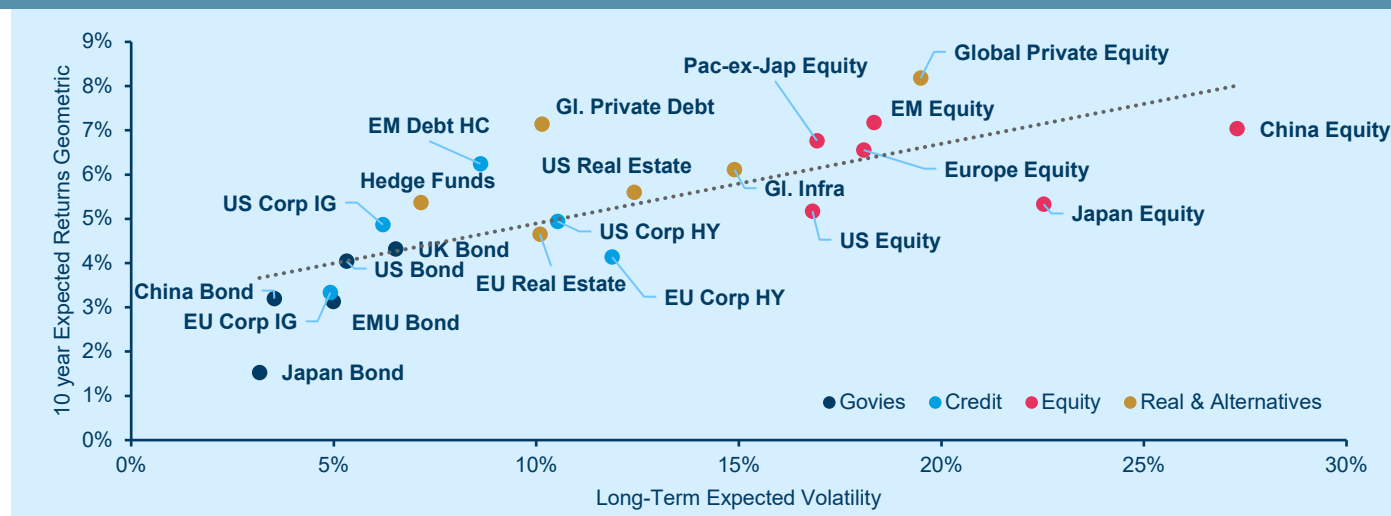
The capital market line remains flat, confirming that it can be challenging to reach high return targets using liquid assets alone. Real and alternative assets need to be considered for allocations with a more aggressive risk profile, due to their diversification and return-generation features. In addition, fixed-income assets are fundamental to guarantee stable income in multi-asset portfolios.

**FIGURE 2: 10-Year Expected Returns and their distributions**



Source: Amundi Asset Management CASM Model, Quant Solutions and Amundi Investment Institute Teams. Full source on page 6.

**FIGURE 3: Risk-Return Landscape in Local Currency**



Source: Amundi Asset Management CASM Model, Quant Solutions and Amundi Investment Institute Teams. Full source on page 6.

UK and US bonds' expected returns dominate the sovereign bond universe (duration mismatch on UK gilts could alter the picture), while Japanese bonds continue to lag behind peers due to structurally lower interest rates, even if expectations have significantly increased as a consequence of higher yields. Credit return forecasts for high-grade assets confirm an average premium with respect to relative government bonds, whereas the excess return associated with low-quality credit assets is modest, particularly in US. When we add the risk dimension, high yield's (HY) appeal is lowered by the larger dispersion due to greater intrinsic volatility and default loss assumptions. On the equity side, moderate 10-year expected returns are between 5.2% and 7.2%, with a wide dispersion of outcomes across regions. Hedge Funds maintain their role as portfolio diversifiers, exhibiting the steady returns associated with moderate risk and a good liquidity profile. Global Private Debt shows an interesting expected risk-adjusted return, making this asset a convincing alternative to liquid credit instruments. Infrastructure maintains a balanced risk-return profile and also shows strong diversification properties. Private Equity is expected to provide investors with returns close to double-digits. Real Estate expectations are positioned closely to high-quality credit due to its negative valuation component. However, the dispersion around the central scenario is materially wider, reflecting the illiquidity and complexities of this asset class.

## Inclusion of Indian local bonds in GBI – EM benchmark

In June 2024, India officially joined the J.P. Morgan GBI-EM Global Series of indices, becoming the 25th market to be included in these benchmarks since its inception 19 years ago.

Our long-term outlook for Indian yields builds on historical analysis and forward-looking guidance coming from a macroeconomic outlook which also accounts for the energy transition. We anticipate an economic environment characterised by a high potential growth, albeit moderating from current growth rates, and an inflation rate well within the current RBI target, though slightly above the 4% pivot level. On the interest rates side, we expect 10-year yields to stabilise around 6.5% over a 10-year horizon. This projection is consistent with a milder upward adjustment to the neutral rate than anticipated by a recent RBI analysis, and our macroeconomic scenario for the Indian economy.

As of end of June 2024, assuming the yield curve will align with our long-term targets over the next decade, we estimate an annualised expected return for Indian government bonds of 7.1%, expressed in local currency. This return is primarily driven by the carry component, which accounts for more than 90% of the total return and is bolstered by expected positive capital gains from declining yields.

Based on an historical analysis, we can expect bond index volatility to be in the range of 7-8%. However, it is important to note that historical analysis may provide only a partial perspective, as India's inclusion in the GBI-EM basket could significantly alter volatility amid government bonds' increased exposure to foreign investors.

To gain a broader perspective, it is important to note that our updated expectations for Indian equity returns are around 8.1% on annualised basis over 10-year horizon. This figure is attractive when compared to Amundi's expectations for other country/region equities; however, it becomes less appealing when considering the associated risks, as the idiosyncratic risk of Indian equity is significantly high (exceeding 20%), and the investment decision will be driven by investor's risk aversions, risk budgets and target returns.

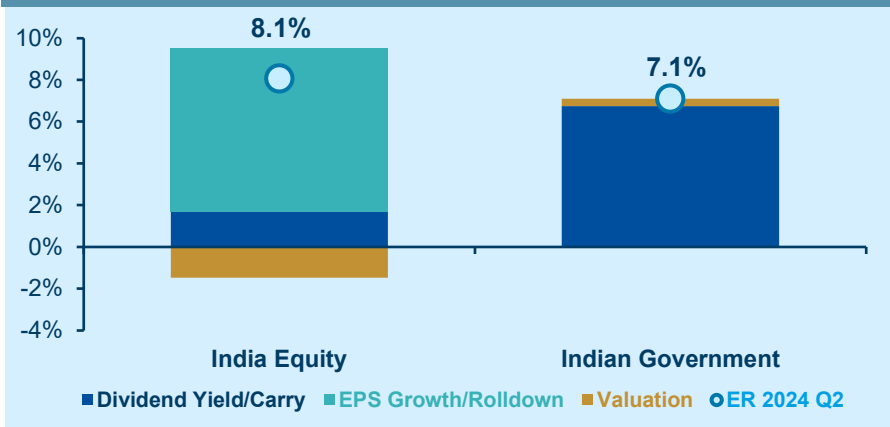
On one side, our earnings per share (EPS) growth forecasts shows a persistent support to the equity market, on the other, we anticipate a potential negative adjustment from valuations as we think the market could be, at the time of writing, overvalued. When comparing equity and bond returns, it seems that higher equity returns over bonds are somewhat limited by the lack of valuation support for equity, whereas bonds may offer more favourable conditions thanks to their attractive carry. However, regulatory changes and reforms can significantly increase the growth perspectives of dynamic Indian companies and boost earnings growth, making Indian stocks more attractive.

For foreign investors, in particular US Dollar based ones, it is crucial to account for foreign exchange movements when considering investing in Indian assets. FX changes can provide some benefits in terms of expected returns, however they could also increase risks associated with both equity and bond investments. Notably, the volatility associated with bonds is likely to grow more than that of equities in relative terms when FX changes are considered, even if the INR volatility is lower compared to the EMFX basket average.

*“India's inclusion into GBI-EM highlights the importance of Indian fixed income both as part of the overall index and as standalone assets.”*

*“Regulatory changes and reforms can significantly increase the growth perspectives of dynamic Indian companies and boost earnings growth, making Indian stocks more attractive.”*

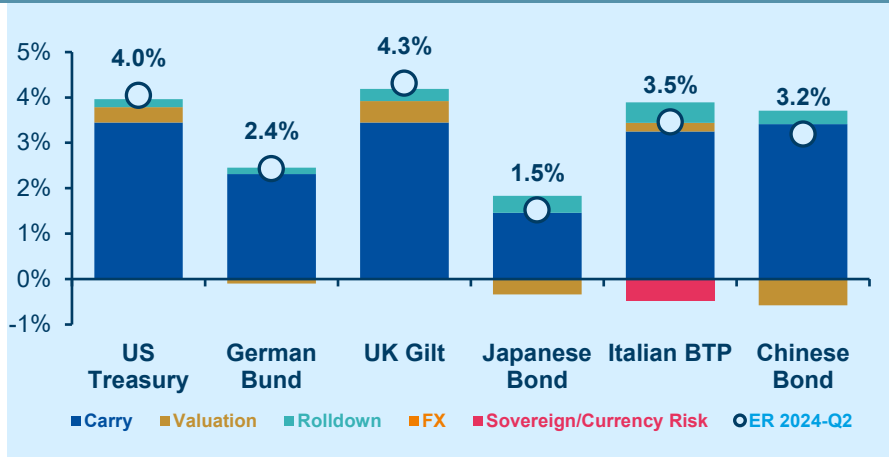
**FIGURE 4: 10-Year Expected Returns for Indian Assets**



Source: Amundi Asset Management CASM Model, Quant Solutions and Amundi Investment Institute Teams. Full source on page 6. Indian Government bonds estimate is based on a duration of approximately 7 years, consistent with current index levels.

## Asset Class Return Attribution

FIGURE 5: Government Bonds Expected Returns Attribution



The long-term outlook for government bonds has slightly improved amid increased interest rates over the quarter: higher carry and more favourable valuations in particular for UK, Japan and Euro Semi Core and Peripheral bonds. US and Euro Core bonds' returns are unchanged.

Only a marginal upgrade for Investment Grade (IG) credit, both US and Euro regions, where long-term assumptions are unchanged and spreads only widened by roughly 10bps. US IG's expected return could benefit from a more favourable valuation on the government side linked to the duration exposure. In the HY space, expected return changes are mixed and very tight in magnitude. The largest change took place in EM HC Debt, expected return for this asset increased by roughly 70 bps mainly driven by more favourable valuation and higher carry.

FIGURE 6: Credit Bonds Expected Returns Attribution

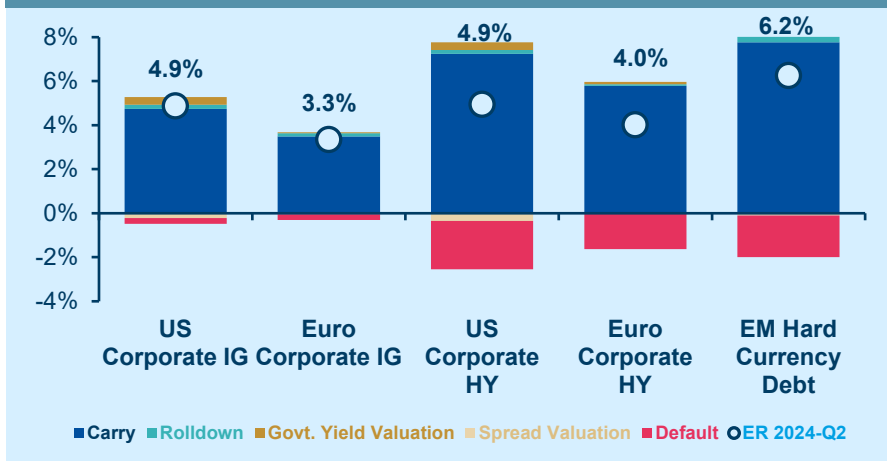
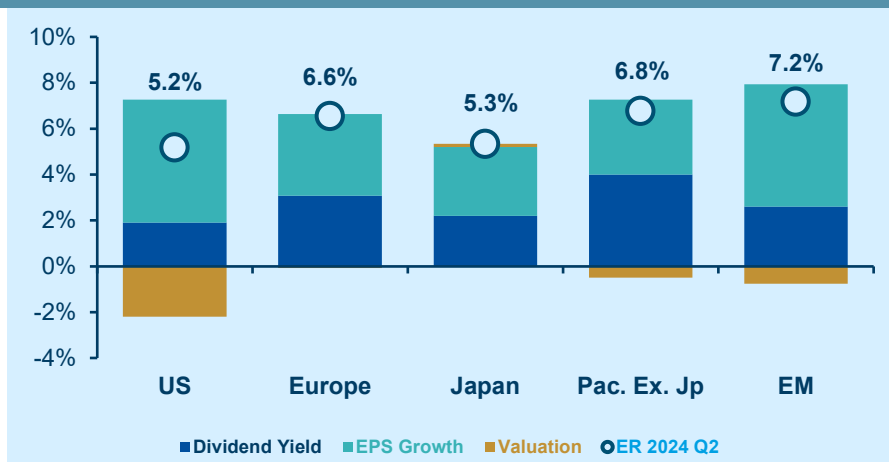


FIGURE 7: Equity Expected Returns Attribution



Changes in equity's expected returns are mainly driven by valuations, while estimates regarding EPS growth are almost unchanged. Hence, what is driving the expected return differences compared to last quarter is mainly the valuation component. The rally of EM and US Equity translates into a negative expected returns revision. Valuations, only marginally offset by a more benign growth outlook, still represent a headwind for our US equity long-term scenario. Europe and Japan equities now look fairly priced.

Fixed income asset expected return is broken down into: **Carry**: proxied by the par government or credit yield, **Roll-down**, the effect on bond price generated by the passage of time, **Valuation**: the effect on bond price generated from government yield and spread moving, **Default**: assumption on the loss from a credit event, Others can include residual factors due to not linear components and simulation effect. Sovereign/ Currency Risk, impact for being exposed to sovereign and currency risk, FX, performance associated to the FX exposure vs USD. Equity asset expected return is broken down into: **Dividend Yield**, **EPS Growth** which includes net dilution (provision for shares repurchase programs and new shares issuance effect) and **Valuations**, the effect of price multiples converging to equilibrium.

Source: Amundi Asset Management CASM Model, Quant Solutions and Amundi Investment Institute Teams. Full source on page 6.

## ASSET CLASS RETURN FORECASTS

In the following table, we present our annualised return forecasts across different asset classes, calculated as the average simulated returns over different forward-looking horizons (five and ten years). We also report historical figures for annualised returns and volatility calculated over the last 20 years, a period that includes two major crises (GFC and Covid-19).

Assets in local currency	Reference Index	Duration	Average Annualised GEOMETRIC		Average Annualised ARITHMETIC	10-year SIMULATED Volatility	10-year Simulated CVaR 99%	2004-2024 Historical Returns (annualised)	2004-2024 Historical Volatility (annualised)
			Average next 10 years	5-year Expected Returns	10-year Expected Returns				
<b>Cash</b>									
Euro Cash	JPCAEU3M Index	0.2	2.4%	2.1%	2.2%	1.0%	2.6%	1.3%	0.9%
US Cash	JPCAU3M Index	0.2	3.5%	3.2%	3.2%	1.0%	1.2%	2.0%	1.0%
<b>Government Bonds</b>									
US Bond	JPMTUS Index	6.0	4.7%	4.0%	4.1%	5.3%	11.3%	2.8%	5.4%
UK Bond	JPMTUK Index	9.1	5.3%	4.3%	4.5%	6.5%	14.3%	3.1%	7.8%
Japan Bond	JPMTJPN Index	9.0	1.4%	1.5%	1.6%	3.2%	6.3%	1.1%	2.7%
Emu Bond - Core	JPMTWG index	7.0	2.7%	2.4%	2.5%	4.7%	10.6%	2.3%	5.2%
Emu Bond - Semi Core (France)	JPMTEUFR Index	7.1	3.7%	3.2%	3.3%	4.8%	10.3%	2.5%	5.4%
Italy Bond	JPMTIT index	6.2	4.0%	3.5%	3.7%	7.1%	13.7%	3.6%	6.7%
Spain Bond	JPMTSP Index	6.7	3.9%	3.3%	3.5%	6.6%	13.6%	3.3%	5.8%
EMU Bond All Maturity	JPMGEMU Index	6.8	3.6%	3.1%	3.2%	5.0%	10.4%	2.8%	5.2%
Barclays Global Treasury	BTSYTRUH Index	6.7	3.7%	3.3%	3.3%	3.8%	7.2%	3.3%	3.9%
<b>Credit Investment Grade</b>									
Euro Corporate IG	ER00 index	4.6	3.4%	3.3%	3.4%	4.9%	8.3%	2.8%	4.7%
US Corporate IG	C0A0 index	6.7	5.3%	4.9%	5.0%	6.2%	11.6%	4.1%	6.5%
Barclays Euro Aggregate	LBEATREU Index	6.4	3.5%	3.2%	3.3%	4.6%	9.4%	2.6%	4.6%
Barclays US Aggregate	LBUSTRUU Index	6.3	5.0%	4.4%	4.4%	4.8%	9.8%	3.1%	4.3%
Barclays Global Aggregate	LEGATRUH Index	6.6	4.2%	3.8%	3.8%	4.1%	7.6%	3.4%	3.7%
<b>Credit High Yield</b>									
Euro Corporate HY	HE00 index	2.9	3.9%	4.1%	4.8%	11.9%	21.4%	6.1%	12.7%
US Corporate HY	H0A0 index	3.3	4.9%	4.9%	5.4%	10.5%	19.8%	6.5%	10.4%
<b>Emerging Market Debt</b>									
EM Hard Currency Debt*	JPEIDIVR Index	6.6	6.5%	6.2%	6.5%	8.6%	18.9%	5.9%	9.3%
EM-Global Diversified**	JGENVUUG Index	5.0	6.6%	6.1%	6.7%	10.9%	23.0%	4.4%	11.8%
GBI-EM China LOC	JGENCNTL Index	5.1	1.4%	3.2%	3.3%	3.5%	7.0%	na	na
<b>Convertible Bond</b>									
Europe Index (Eur Hedged)	UCBIFX20 Index		5.0%	4.9%	5.5%	11.9%	27.6%	3.8%	10.1%
<b>Equities</b>									
US Equity	NDDLUS Index		6.1%	5.2%	6.4%	16.8%	45.2%	9.7%	16.2%
Europe Equity	NDDLE15 index		7.2%	6.6%	7.9%	18.1%	48.0%	6.6%	15.0%
Euro zone Equity	NDDLEMU Index		6.9%	6.2%	7.9%	19.8%	52.2%	5.9%	17.9%
UK Equity	NDDLUK Index		7.8%	7.1%	8.0%	14.9%	39.1%	6.9%	13.4%
Japan Equity	NDDLJN Index		6.8%	5.3%	7.6%	22.5%	56.0%	6.4%	19.6%
Pacific ex Japan Equity	NDDL PXJ Index		7.9%	6.8%	7.9%	16.9%	47.0%	7.3%	15.1%
Emerging Markets Equity	NDLEEGF index		10.1%	7.2%	8.6%	18.3%	49.6%	8.7%	16.8%
China Equity	NDELCHF Index		8.0%	7.0%	10.3%	27.3%	64.7%	7.4%	25.0%
World Equity	NDDLWI index		6.4%	5.5%	6.7%	16.9%	45.6%	8.4%	15.3%
AC World Equity	NDLEACWF Index		6.8%	5.7%	6.9%	16.9%	45.7%	8.3%	15.2%
<b>Real and Alternative assets***</b>									
EU Real Estate				4.7%	5.1%	10.1%	32.2%		
US Real Estate				5.6%	6.3%	12.4%	47.8%		
Global Private Equity				8.2%	9.8%	19.5%	53.6%		
Global Infrastructure				6.1%	7.0%	14.9%	35.0%		
Global Private Debt				7.1%	7.5%	10.1%	33.0%		
Hedge Funds				5.4%	5.5%	7.1%	19.7%		

\* Hard Currency USD, China Bond starting date is the beginning of 2019. \*\* USD Unhedged, including the USD currency expectation towards EM currencies. \*\*\*Historical figures on real and alternatives are not available, as our models refer to un-smoothed data if necessary.

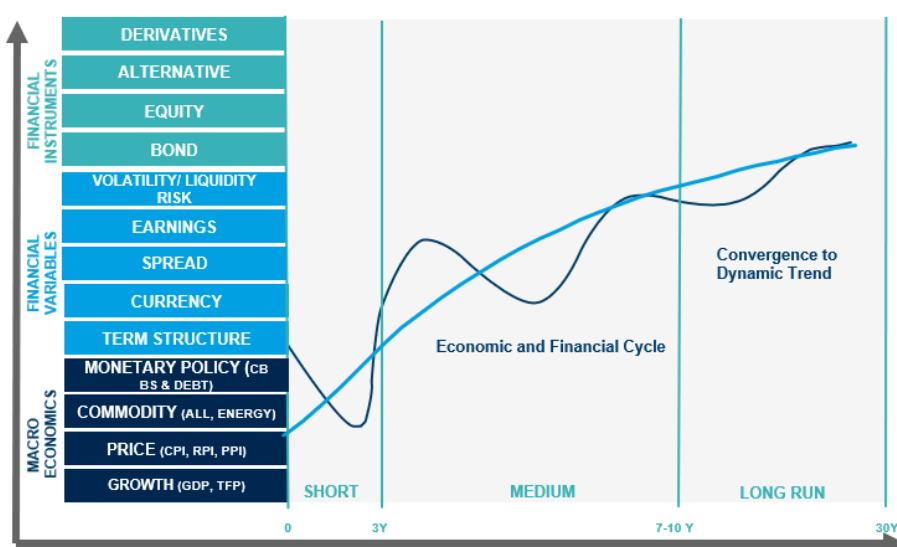
Source: [Amundi Asset Management CASM Model](#), Quant Solutions and Amundi Investment Institute Teams. Full source on page 6.

## CASCADE ASSET SIMULATION MODEL (CASM)

This medium- and long-term return forecast report is intended to provide some guidance for investor expectations. The time horizon under consideration is 10 years, a timeframe deemed to be appropriate and during which long-term trend factors and issues can reasonably be expected to play out and, therefore, market returns should accurately reflect this information.

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 a long-term equilibrium, 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. 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 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 and periphery, UK, Japan, China). 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. Price returns are generated using 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 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.



The architecture of CASM can be described in two dimensions. The first dimension is a “cascade” of models. Asset and liability price models are composed 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 dynamic long-term levels. 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, Amundi Asset Management Quant Solutions and Amundi Investment Institute Teams. Macro figures as of the last release. Starting date as of 28 June 2024. Equity returns are based on MSCI indices. Reference duration are average figures. If not otherwise specified, expected returns are geometric annualised 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 refers 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 which 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 using Amundi central scenario assumptions, which include climate transition. Forecast and fair values up to a 3-year horizon are provided by the Amundi Investment Institute Research team (macro, yields, spread and equity).

Forecasts for annualised returns are based on 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.

Trust must be earned

## 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 Investment Institute. This independent research platform brings together Amundi's research, market strategy, investment themes and asset allocation advisory activities under one umbrella; the Amundi Investment 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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