Key insights

A rocky net zero pathway

Key highlights on long-term scenarios and 10-year return forecasts

Monica DEFEND
Head of Amundi Institute

Vincent MORTIER
Group Chief Investment Officer

Matteo GERMANO
Deputy Group Chief Investment Officer

In 2022, the war in Ukraine impacted the energy supply outlook and also had implications for the net zero path. Security, affordability (in volume and prices) and sustainability of the energy supply were challenged, driving the need to diversify the energy supply mix. While this has somewhat accelerated the shift towards greener energy sources, it has also led to a more uncoordinated response, as each country moved to secure its own needs. These developments come on top of inflation remaining high, having originally stemmed from the Covid-induced supply bottlenecks, which are becoming less sticky.

Taking a long-term view of these disruptive trends, and their implications on long-term asset class forecasts and strategic allocation, we are pleased to share with you the annual update of our capital market assumptions (CMA) publication. Here are ten key takeaways from this year's edition:

1 **Moving towards a «Rocky net zero path» with diverging policies.** While the spike in energy costs is adding a sense of urgency to the transition, greater focus on national strategic independence as a consequence of the war in Ukraine is increasing the likelihood of a move towards a disorderly scenario, which is predominant in characterising our baseline.

2 **Short-term higher inflation and a more uncertain future path.** The transition implies a weaker but more sustainable growth path ahead. In the short term, high inflation episodes will occur, driven by rising carbon prices (although the implementation of carbon pricing remains an issue) and higher commodity prices, structurally supported by the transition's demand for investment.

3 **Central banks to fight inflation while seeking to aid the transition**. Central banks will have to carefully handle their balance sheets in the future to help finance green investments, while short-term interest rate management will continue to be policymakers' key tool for combating inflationary swings. Hence, central banks could stay dovish on balance sheets but hawkish on short-term rates.

4 **Limiting the induced social costs of the transition will be key.** Corporations could manage a rebalancing of profits towards labour. A potential rebalancing in the labour-profit share of income (with a 7% increase in the former's favour), could result in a cumulated 10% decrease in profits over the next 20 years (with regional differences) and reverse a trend that started in the 2000s.

-1.9%
Average lower expected returns across equity, HY and EM bonds for the next decade vs 2002-2022.

+0.8%
Average extra return compared to the past 20 years for government and IG credit bonds.

+1%
Average increase in expected volatility across all asset classes for the next decade vs 2002-2022

1/3
Allocation to EM in the equity bucket needed to target returns similar to the old US 60-40 portfolio.

1/6
Allocation to real and alternative assets needed to target returns similar to the old US 60-40.

5 **Bonds are heading back to the future, after a 'lost decade'.**
Bonds' return profile is starting to move back to its long-term trend, but we expect uncertainty – deriving from the transition and a weaker macro scenario – to cause higher volatility over the next decade. Investment grade credit will also benefit from higher government bond valuations, while the relative appeal of HY and EM bonds will be challenged by potentially higher default rates.

6 **Equity returns will be lower compared to the past decade, but better than last year's forecasts, with regional diversification in focus.** Expectations are only marginally higher than in 2022, despite the widespread reset in valuations, as the many challenges implied by the macro-financial backdrop are weighing on the earnings path. China and Emerging Markets are expected to top the equity returns ranking, but their returns' improvement is relatively mild in risk-adjusted terms.

7 **Value investing and energy transition themes will remain in the spotlight over the coming decade.**
Looking at sectors' expected returns, the outlook for value investing is positive, and Financials are expected to top the 10-year returns scoreboard. Leaders in the green transition will also be favoured. On the other hand, defensive sectors are losing attractiveness.

8 **Real and alternative assets and commodities will be important tools for building inflation-resilient portfolios.**
Real and alternative assets, in particular, offer a complementary risk-return profile to traditional asset classes, but they bring higher liquidity risk compared to public markets. Private equity is at the top of the expected returns ranking while, on a risk-adjusted basis, global private debt is favoured. Hedge funds also offer an appealing risk-return profile, similar to that of the credit space, but with more appealing returns.

9 **The coming decade will call for enhanced diversification**.
Moderate risk portfolios (6% volatility target) could achieve around 5% annual returns in EUR (6.6% in USD), with a 70% bond / 30% equity type allocation. USD investors will be more tilted towards aggregate bonds, while EUR investors will have to count more on equity as well as real and alternative assets.

10 **To target higher returns, investors will have to count on EM equity, as well as real and alternative assets.**
Over the next decade, dynamic risk profiles (12% volatility target) will continue to count on equity in a 60-40 style of allocation. One-third of the equity allocation will be tilted towards EM equity, while adding real and alternative assets can help reduce the equity tilt and achieve higher returns with the same level of risk. Trends in the FX world could also offer opportunities to seek additional sources of return, in a more challenging investment backdrop.

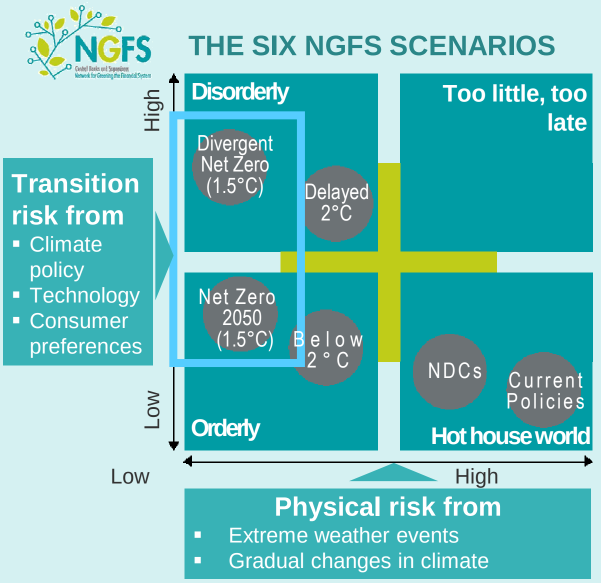
Amundi Institute's view on structural changes at play

	2010s	2020s
ECONOMY	Financial capitalism	Redistribution of income
	Deflation	Inflation
	Peace with limited geopolitical hotspots	A new era of geopolitical risk
	Globalisation	Regionalisation
	Inequality	Inclusion
MARKETS	Large caps	Equal weight – no mega caps
	Growth	Value
	Tech	Financials and green tech
	Govies & Credit	Cash, Govies, EM bonds
	Developed favoured vs Emerging Markets	Emerging favoured vs Developed Markets
	King dollar	De-throning of dollar possible
	60-40 paradigm	New 60-40 paradigm with real and alternatives assets and commodities

Source: Amundi Institute.

A rocky net zero transition path: macroeconomic implications

THE SIX NGFS SCENARIOS



CENTRAL SCENARIO

Amundi | Institute

Rocky Net Zero

Limits climate warming to 1.5°C with higher transition risk compared to the net zero baseline scenario amid more fragmented policy responses.

=

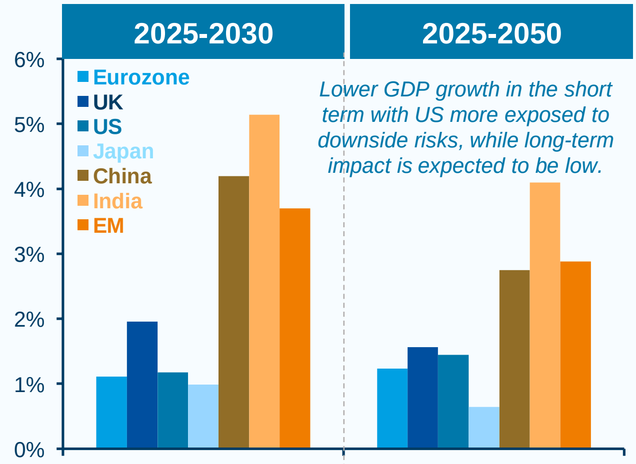
High probability: **Divergent net zero** reaches net zero around 2050 but with higher costs due to divergent policies introduced across sectors leading to a quicker phasing-out of oil use.

+

Low prob.: **Net zero 2050** limits global warming to 1.5°C through stringent climate policies and innovation, reaching global net zero CO_2 emissions around 2050.

Growth

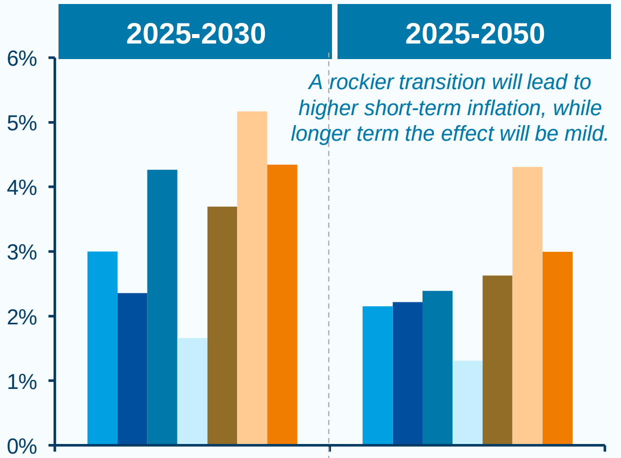
Amundi Central Scenario Growth Projections



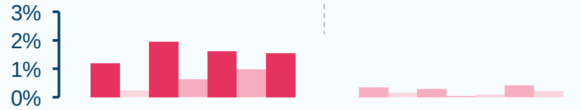
GDP growth differential vs no transition
(Amundi central scenario GDP - NGFS baseline GDP)

Inflation

Amundi Central Scenario Inflation Projections



Inflation differential vs no transition
(Amundi central scenario inflation - NGFS baseline inflation)

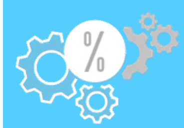


Source: Amundi Institute on NGFS data from the 2022 release. The positioning of scenarios in the top right charts are approximate, based on an assessment of physical and transition risks out to 2100. NDCs= Nationally Determined Contributions (includes all pledged targets). The baseline is a hypothetical scenario with no transition nor physical risk.

Infographic

Asset class & portfolio views for the next decade

Bonds



Bonds are back as a key portfolio engine, with a focus on quality

UP

- US and Euro aggregate space will be favoured, but expect higher volatility.
- In the search for higher yields, EM bonds will be favoured.

DOWN

- Japanese govies will still offer lower returns with higher volatility.
- High yield will be challenged by higher expected defaults.

Equity

A challenging risk-return profile will call for increased diversification.

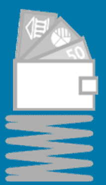
UP

- Chinese and EM equity will help boost returns.
- US remains favoured in the developed world.
- Value sectors + IT + green transition leaders.

DOWN

- Expect higher volatility.
- Lower returns vs history for DM.
- Japanese equity is the laggard.
- Defensive sectors.

Real & Alternatives



A key tool to enhance portfolio risk-adjusted returns.

UP

- All asset classes are valuable diversifiers, particularly infrastructure.
- Hedge funds are favoured in the medium-volatility space, private equity in the high-volatility space.

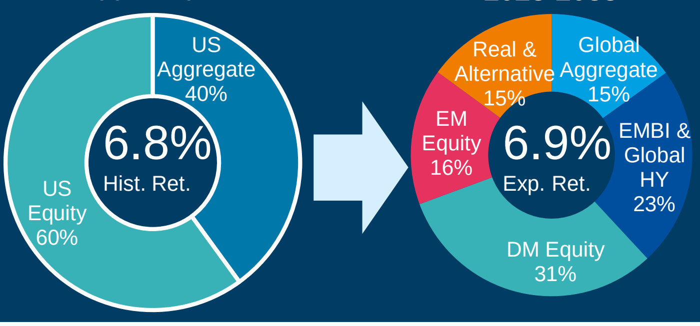
DOWN

- Real estate and infrastructure return expectations have been downgraded to incorporate physical risks.
- Liquidity and shortfall risk are factors to monitor.

The new 60-40

Go global and add real assets to target returns similar to a 60-40.

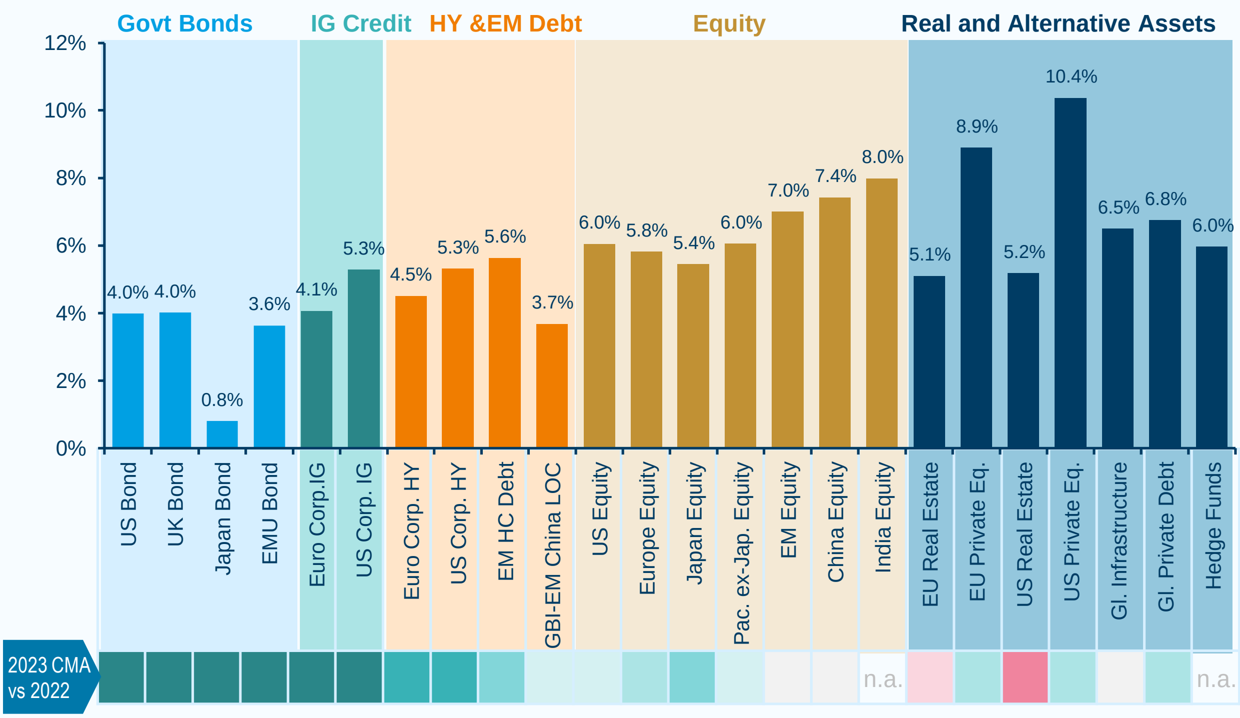
2002 - 2022 **2023-2033**



Source: Amundi, Bloomberg for historical data and Amundi Quant Solutions Team portfolio optimization on CMA for expected returns and allocations. Data as of 31 December 2022. For illustrative purposes.

Infographic

10-year Capital Market Assumptions (CMA) have improved vs last year's forecasts, particularly for bonds

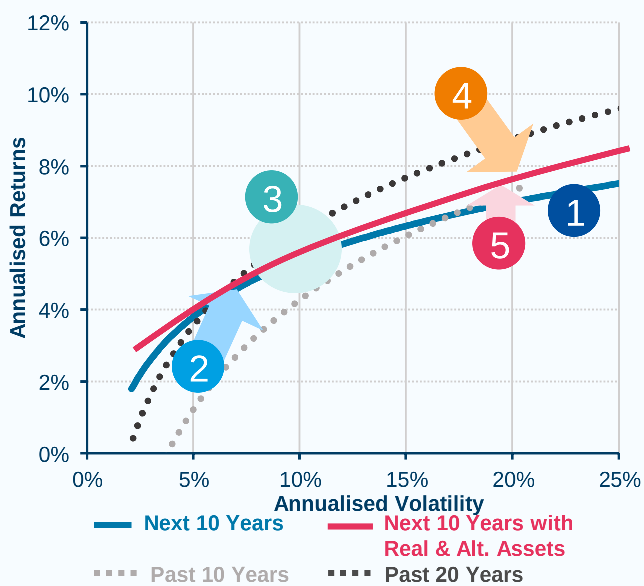


Source: Amundi CASM Model Data as of 30 December 2022. Colours indicate higher (dark green) to lower (dark red) expected returns for the next decade compared to last year edition of the CMA. Data are in local currency and show the 10-year annualised expected returns Dec 22 – Dec 32.

Five main changes: next decade vs past decades

1. **Moving to a flatter risk-return profile vs history.** This means that additional risk taken will be less remunerative than in the past.
2. **Aggregate bonds are back and shining.** After a decade of meagre returns, bonds' expected returns are moving up, even above their long-term average.
3. **High yield and EM bonds are stuck in the middle**: their risk-return profile is improving vs the past decade, but is still below their long-term average. EM bonds are favoured over HY in the search for higher yield.
4. **Lower equity returns and higher volatility vs the past amid climate change impact**. Equity still key for portfolio construction, look for regional diversification.
5. **Real and alternative assets help enhance portfolio returns**. They offer an interesting risk-return profile, to target higher returns with similar levels of volatility.

Illustrative risk-return curves for main asset classes
2023 Capital Market Assumptions vs past 10 & 20 years



Source: Amundi CASM Model for forecasts and Amundi Institute on Bloomberg data for historical data. Data as of 30 December 2022. The lines fit the spatial distribution of risk-return profiles of the traditional asset classes, from government bonds (on the left side), to equities (on the right). For additional information see the 'Sources and Assumptions' section at the end of this document. The forecast returns are not necessarily indicative of future performance, which could differ substantially. Data are in local currency.

Expected Returns Table

Assets in local currency	Reference Index	Average Annualised GEOMETRIC: 5-year Expected Returns	Average Annualised GEOMETRIC: 10-year Expected Returns	Average Annualised ARITHMETIC: 10-year Expected Returns	10-year SIMULATED Volatility	2002-2022 Historical Returns (annualised)	2002-2022 Historical Volatility (annualised)
Cash							
Euro Cash	JPCAEU3M Index	2.4%	2.1%	2.1%	1.2%	1.2%	0.9%
US Cash	JPCAUS3M Index	3.9%	3.2%	3.2%	1.2%	1.7%	0.8%
Government Bonds							
US Bond	JPMTUS Index	3.6%	4.0%	4.1%	6.1%	2.8%	5.4%
UK Bond	JPMTUK Index	5.2%	4.0%	4.2%	7.8%	3.2%	7.5%
Japan Bond	JPMTJPN Index	0.8%	0.8%	0.9%	4.1%	1.2%	2.5%
Emu Bond - Core	JPMTWG index	2.4%	2.8%	2.9%	5.6%	2.5%	5.0%
Emu Bond - Semi Core (France)	JPMTFR Index	3.0%	3.5%	3.6%	5.9%	2.7%	5.2%
Italy Bond	JPMTIT index	4.2%	4.4%	4.6%	7.6%	3.5%	6.5%
Spain Bond	JPMTSP Index	3.6%	4.0%	4.2%	7.5%	3.3%	5.6%
EMU Bond All Maturity	JPMGEMUI Index	3.3%	3.6%	3.7%	5.5%	2.8%	4.9%
Barclays Global Treasury	BTSYTRUH Index	2.8%	3.0%	3.0%	4.0%	3.0%	3.7%
Credit Investment Grade							
Euro Corporate IG	ER00 index	4.0%	4.1%	4.1%	4.3%	2.8%	4.6%
US Corporate IG	C0A0 index	5.1%	5.3%	5.4%	6.4%	4.1%	6.4%
Barclays Euro Aggregate	LBEATREU Index	3.5%	3.7%	3.8%	5.0%	2.7%	4.4%
Barclays US Aggregate	LBUSTRUU Index	4.2%	4.5%	4.5%	5.2%	3.1%	4.0%
Barclays Global Aggregate	LEGATRUH Index	3.7%	3.8%	3.9%	4.2%	3.2%	3.5%
Credit High Yield							
Euro Corporate HY	HE00 index	4.7%	4.5%	5.1%	11.7%	6.9%	12.9%
US Corporate HY	H0A0 index	5.6%	5.3%	5.7%	10.5%	7.1%	10.6%
Emerging Market Debt							
EM Hard Currency Debt*	JPEIDIVR Index	6.0%	5.6%	6.0%	10.2%	6.2%	9.4%
EM-Global Diversified**	JGENVUUG Index	5.9%	5.5%	6.3%	12.7%	4.9%	11.7%
GBI-EM China LOC	JGENCNTL Index	2.2%	3.7%	3.7%	3.6%	na	na
Convertible Bond							
Europe Index (Eur Hedged)	UCBIFX20 Index	5.3%	4.7%	5.4%	12.3%	3.8%	10.1%
Equities							
US Equity	NDDLUS Index	7.4%	6.0%	7.4%	17.0%	9.2%	16.3%
Europe Equity	NDDLE15 index	7.8%	5.8%	7.2%	18.1%	6.7%	15.6%
Euro zone Equity	NDDLEMU Index	7.4%	5.4%	7.2%	20.1%	5.8%	18.5%
UK Equity	NDDLUK Index	8.3%	6.3%	7.3%	16.1%	7.1%	13.9%
Japan Equity	NDDLJN Index	7.3%	5.4%	7.3%	20.6%	5.8%	19.5%
Pacific ex-Japan Equity	NDDLPXJ Index	8.1%	6.0%	7.2%	15.5%	8.2%	15.2%
Emerging Markets Equity	NDLEEGF index	7.9%	7.0%	8.7%	18.5%	9.6%	17.9%
China Equity	NDELCHF Index	8.7%	7.4%	10.9%	27.7%	10.5%	26.4%
World Equity	NDDLWI index	7.6%	6.1%	7.4%	16.9%	8.0%	15.5%
AC World Equity	NDLEACWF Index	7.7%	6.3%	7.6%	17.3%	8.0%	15.4%

* Hard Currency USD, China Bond starting date is beginning of 2019. * USD Unhedged, including the USD currency expectation towards EM currencies. Amundi CASM Model. Data as of 30 December 2022. For further information see the "Sources and Assumptions" section. The forecast returns are not necessarily indicative of future performance, which could differ substantially.

Sources and assumptions

Sources of CMA: Amundi Asset Management CASM Model, Amundi Asset Management Quant Solutions and Amundi Institute Teams, Bloomberg. Data as of 30 January 2023. Macro figures as of last release. Starting date as of 30 December 2022. 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. They are expressed in local currency. Those returns are gross of fees. Returns on credit assets are comprehensive of default losses.

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.

Regarding real assets, we model core/core-plus (moderate risk) real estate and direct lending on the private debt side. The expected returns do not consider the potential alpha, generated by portfolio management that can be significant above all for real and alternative assets.

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 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, which could differ substantially.

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 (2022-2024) 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 flows as explained on page 31 of this paper. For income, we use the average of 2021-2023 consensus dividend yield of each sector, here again adjusted to be consistent with the regional outcome.

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

IMPORTANT INFORMATION

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Chief editors

DEFEND Monica, *Head of Amundi Institute*

GERMANO Matteo, *Deputy Group Chief Investment Officer*

MORTIER Vincent, *Group Chief Investment Officer*

Editors

BERTINO Claudia, *Head of Amundi Investment Insights & Publishing, Amundi Institute*

FIOROT Laura, *Head of Investment Insights & Client Division, Amundi Institute*

LOMBARDO Giulio, *Digital Communication & Strategy Specialist, Amundi Institute*

Authors

BERARDI Alessia, *Head of Emerging Macro and Strategy Research*

GISIMUNDO Viviana, Head of Quant Solutions, OCIO Solutions, Amundi

PORTELLI Lorenzo, *Head of Cross Asset Strategy, Amundi Institute*

USARDI Annalisa, *Senior Economist*

WALSH Thomas, *Senior Quant. Analyst, OCIO Solutions, Amundi*

ZANETTI Nicola, *Quantitative Analyst, OCIO Solutions, Amundi*

Contributors

BEN SLIMANE Mohamed, *Quantitative Research, Amundi Institute*

BERTONCINI Sergio, *Senior Fixed Income Strategist, Amundi Institute*

CESARINI Federico, *Head of FX Strategy, Amundi Institute*

COADOU John, *Global equity strategist , Amundi Institute*

DELBÒ Debora, *Senior EM Macro Strategist, Amundi Institute*

GEORGES Delphine, *Senior Fixed Income Strategist, Amundi Institute*

HUANG Claire, *Senior EM Macro Strategist, Amundi Institute*

MIJOT Eric, *Head of Global Equity Strategy, Amundi Institute*

TONIATO Joao, *Senior global equity strategist , Amundi Institute*

VUILLEMOT Bertrand, *Junior Quant. Analyst, OCIO Solutions, Amundi*