Deutsche Bank
Chief Investment Office

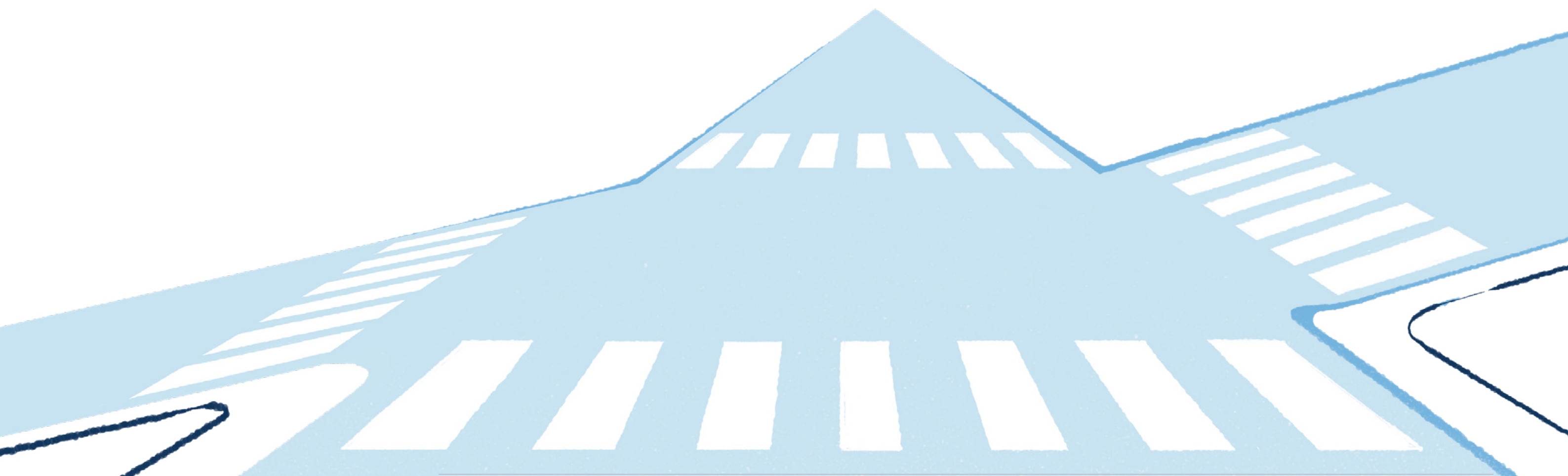
September 2023

CIO Insights

At a crossroads?

Economic and investment update

Contents



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Letter to Investors

Christian Nolting
Global CIO

At a crossroads?

Markets remain focused on monetary policy, with the dominant view still being that we are now close to the peak of the monetary tightening cycle. There is an assumption that this peak, when reached, will allow a policy pivot. This is despite evidence that inflation is still not yet fully under control, with uncomfortably high rates of core inflation in many economies. Fears around possible future stagflation have also not completely dissipated and energy costs are another concern.

What this means, in our view, is that expectations of an imminent sharp change in economic or policy direction are likely misplaced. Central banks will have good reasons to be cautious, even if this is indeed the peak of the tightening cycle. For developed market central banks, still buoyant labour markets (with their positive impact on consumption), combined with lingering inflation worries will make steering economies towards a soft landing more difficult. China, meanwhile, is trying to engineer the reverse: a not too soft “take off” for economic growth. Emerging market central banks must carefully address a range of other monetary policy issues too.

Central bank action will also not be perfectly synchronised. Any further Fed funds rate hike would come as a surprise and we still seem on course for a slow sequence of U.S. rate cuts in 2024. The ECB rate hike earlier this month was also probably its last in this cycle, although sticky core inflation in Europe seems likely to delay rate cuts in 2024. And the Bank of Japan could move in the opposite direction entirely, with two small technical hikes next year designed to finally return its policy rate to positive territory.

We remain confident that the central banks can manage us through these continuing policy realignments. For the developed markets, our base case is a soft recession or anaemic growth, followed by a moderate recovery. For China, we expect an eventual modest recovery in the final quarter of this year, led by services and some easing of restrictions in the property sector.

Against this macroeconomic background, investment management will call for subtle changes of direction rather than dramatic shifts in strategy. With inflation pressures unlikely to subside completely, fixed income yields are unlikely to slide down, although yield curves are expected to become less inverted. With corporate fundamentals likely to remain sound, despite the expected temporary economic deceleration, we do not expect sharp credit spread widening.

Equities, too, look likely to ride out any slowdown reasonably well, with earnings growth soon resuming. This will be largely driven in the U.S. and elsewhere by a reinvigorated technology and communication services sector. Relatively modest 12-month overall return targets for most equity markets will conceal a range of other specific opportunities too, including an expected reduction in the valuation discount for European vs. U.S. stocks. Potential future dips could also be seen as buying opportunities.

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Commodity prices remain vulnerable, as always, to uncertainty around global and (in particular) Chinese growth. But supply concerns have already pushed up oil and energy prices as we approach winter in the northern hemisphere. Copper prices could receive some support from continuing activity in electrical vehicle and renewables sectors here. Gold could also be in demand in coming months from investors trying to hedge against perceived recession risks.

So where will the key future crossroads be? My suggestion would be for investors to also look beyond monetary policy to ongoing profound changes of direction in the real world around us. We attempt to capture these in our long-term investment themes, discussed later, which cover the three areas of next-phase technology, resource transition and population support.

We can already see the potential of technology to address environmental issues and change how we live. What may be less evident is how markets are evolving to better channel capital, and the implications for investors, not just in terms of opportunities but also valuations and risk assessment.

These changes mean that this is an exciting time to be an investor, but also one that calls for circumspection. Portfolios need to be managed carefully to anticipate both policy and structural economic changes. We are looking forward to providing you with assistance here.

Christian Nolting

Christian Nolting
Global CIO

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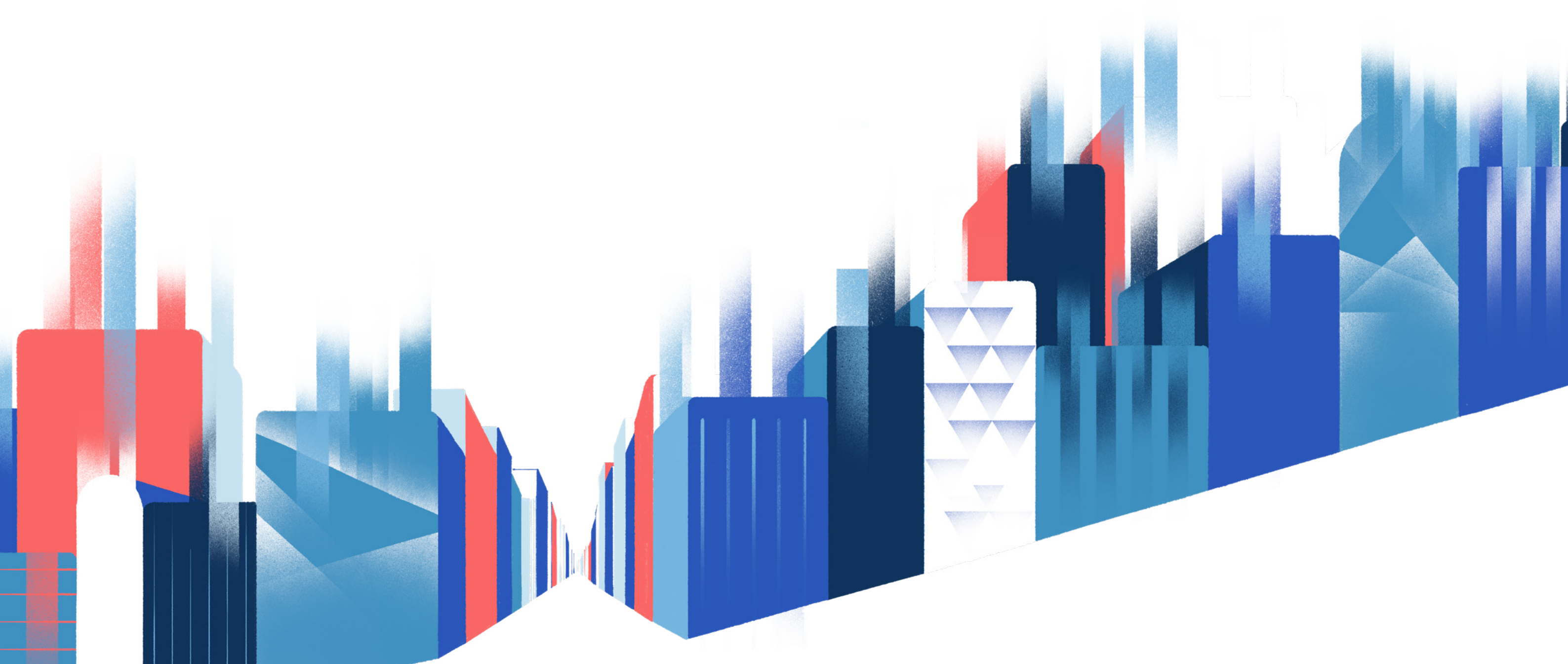

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02 Risks to monitor

Geopolitics are set to remain centre stage with the U.S. administration imposing additional export and investment restrictions on China and some Middle Eastern countries for selected semiconductor products and equipment. Western producers' export prospects are therefore being adversely affected. China may be able to circumvent some of the U.S. sanctions thanks to its own advances in high-end semiconductors, while its seemingly retaliatory restrictions on its exports of critical raw materials have ramped up the price pressure on Western companies.

The BRICS decision to admit six new members will not only make the grouping more diverse but is also likely to boost the political and global trading clout of these emerging market economies. And with Taiwanese elections scheduled for January 2024 their impact on relations with China and the U.S. will also require close monitoring

The Russia-Ukraine grain export agreement has not been renewed, driving up food prices and adding to those shortages already caused by climate risk events such as severe droughts and flooding. These have hit emerging market economies particularly hard. Food price pressures are being exacerbated by India, the world's biggest rice exporter, implementing export restrictions.

Drought-induced low water levels have curtailed hydro power generation in several regions globally. This along with climate-related greater use of air conditioning is driving up fossil fuel consumption. In addition, energy prices have been driven higher by the OPEC+ decision to cut its output until the end of the year.

Recent economic data releases indicate that central bank tightening is starting to have tangible effects, slowing growth in some developed economies. Sticky core inflation may however prompt interest rates to be kept higher for longer.

Defaults in Asian debt markets have been an issue for over a year. But while default rates in Europe are approaching their highest monthly levels for the last three years, they improved in August in the U.S. With refinancing conditions deteriorating, however, default rates may climb further.

The supply of U.S. Treasuries could be another swing factor for bond markets as investors try to anticipate the U.S. government's financing requirements following the delays caused by the protracted debt ceiling discussions earlier this year. Since the share of debt issued as short-dated T-Bills was higher than markets expected, investors are wondering whether they will be rolled over to longer dated T-Bonds going forward, so this may stoke volatility.

Risks to monitor

Market and portfolio implications:

- Emerging market economies set for greater prominence in geopolitics and global trade
- Central bank policy and U.S. Treasury issuance moving bond markets
- Climate risk an inflation driver; economic slowdown may push up default rates

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03

Macroeconomic and asset class update

Macroeconomics

Following the U.S. economy's resilience in Q2 and likely expansion in Q3 2023, leading indicators point to a slowdown in Q4 2023 and Q1 2024 as tight monetary policy increasingly weighs on parts of the economy. A severe downturn should be avoided as we foresee only a mild increase in unemployment and a dampening of wage growth. Robust consumption may weaken due to higher policy rates.

Although the Eurozone should avoid a recession in both 2023 and 2024 it will probably post only anaemic growth with elevated interest rates weighing on demand. Rising wages and declining headline inflation may boost real disposable income and thus support private consumption.

Figure 1: GDP growth forecasts for 2023 and 2024 (%)

Source: Deutsche Bank AG. Forecasts as of September 7, 2023.

	2023	2024
U.S.*	2.0	0.4
Eurozone	0.8	0.9
Germany	0.0	1.0
France	0.7	0.7
Italy	0.9	0.6
Spain	2.5	1.4
Japan	2.1	1.1
China	4.8	4.5
World	2.9	2.7

*For the U.S., GDP growth Q4/Q4 is 1.4% in 2023 and 0.4% in 2024

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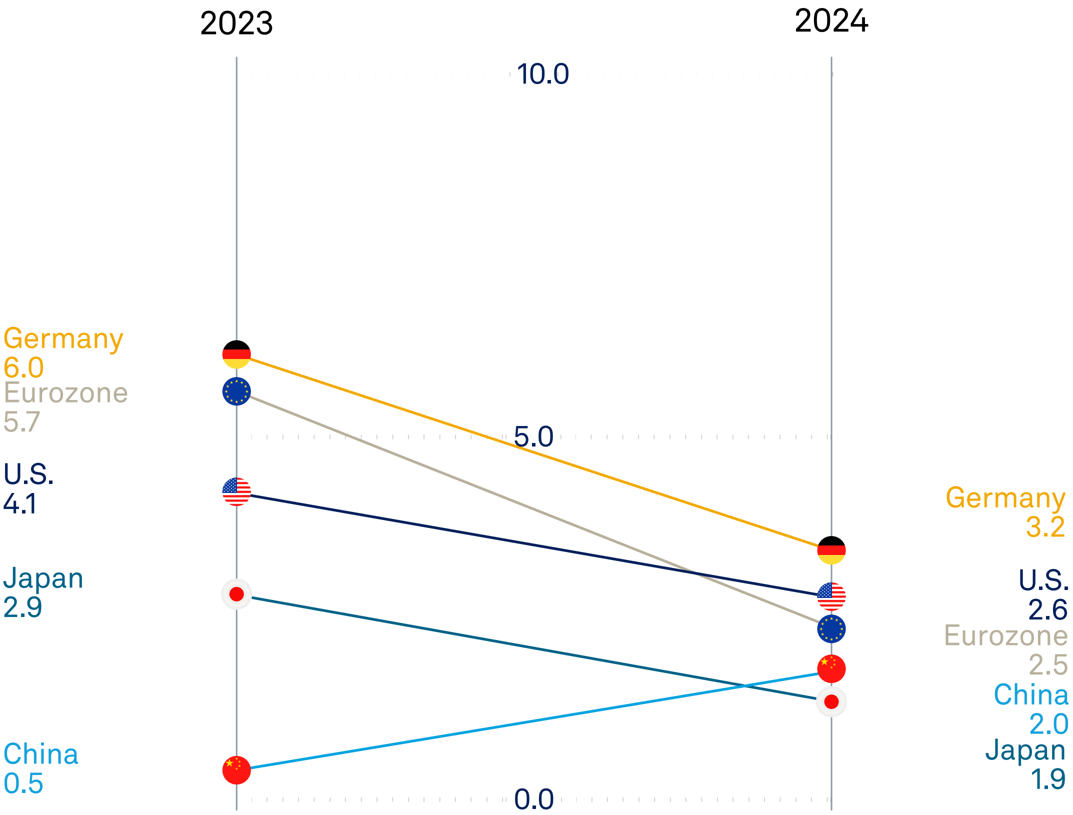
Japan's economy displayed dynamic growth in Q2. Given the strong wage growth and improved terms of trade, we expect above-potential growth rates. In China, activity and sentiment deteriorated swiftly during Q2 and Q3. The measures announced to support investment and consumption should unfold only gradually, helping to bolster the recovery from Q4 onwards.

Figure 2: Consumer price inflation forecasts for 2023 and 2024 (%)

Source: Deutsche Bank AG. Forecasts as of September 7, 2023.



Central banks are still having to contend with sticky core inflation and a weak global economy. The Fed's first rate cuts can be expected in Q2 2024, while the ECB should follow in the second half of 2024. In Japan, policy normalisation will still take time. The negative interest rate policy could end in mid-2024. More monetary easing by the PBoC in China could be on the table, if further targeted fiscal or housing measures by the government turn out to be insufficient to revive the recovery.

Chinese measures intended to support investment and consumption may unfold only gradually, but should help stabilise the recovery from Q4 2023 onwards.

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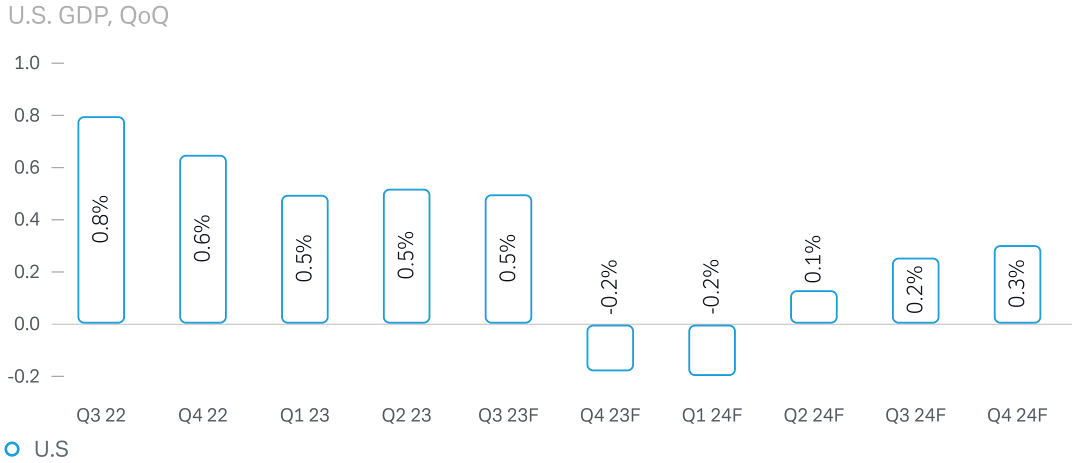
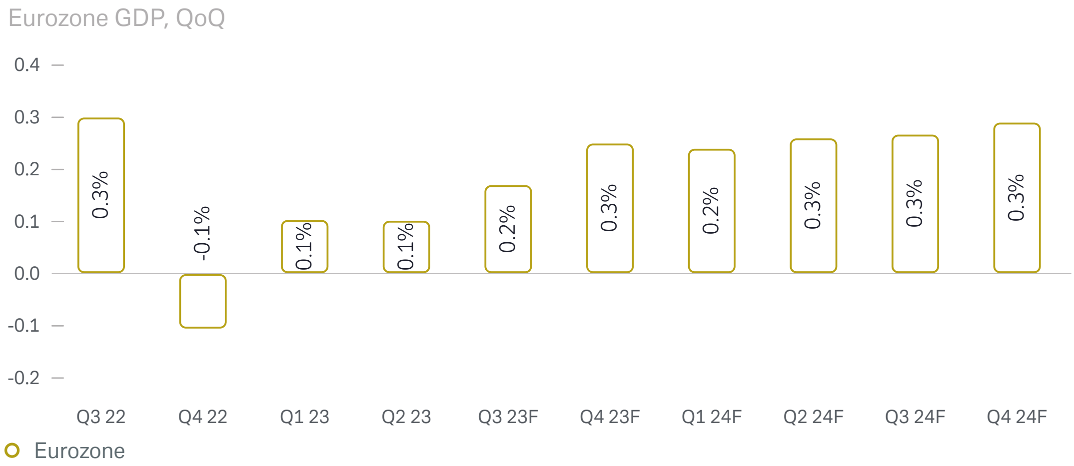
Figure 3: Quarterly growth figures for the U.S. and Eurozone

Source: Deutsche Bank AG. Data as of September 12, 2023.





Macroeconomics

Market and portfolio implications:

- In both DMs and many EM countries, high key interest rates will have a gradually detrimental impact on the economy
- However, economic development is likely to be very mixed, particularly in the EMs
- Labour markets remain robust and core inflation is often sticky – the results are "higher for longer" rates

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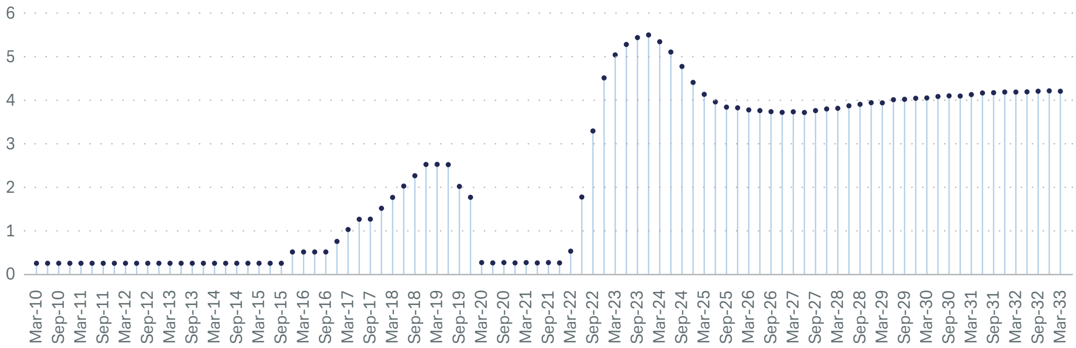
Fixed income

Helped by strong private consumption and a robust labour market the U.S. is unlikely to see a pronounced recession, with its economy essentially recovering by Q2 next year. At the same time the continuing threat of second-round effects stoking inflation will prompt the Fed to continue adopting a hawkish undertone despite Fed funds rate cuts. This should enable U.S. Treasury yield curve inversion to moderate as short-end rates decline while long-end rates are expected to remain close to current levels.

Figure 4: Policy rates expectations (higher for longer)

Source: Bloomberg Finance L.P., Deutsche Bank AG. Data as of September 13, 2023.

Fed funds rate (to present) and Secured Overnight Financing Rate (SOFR) futures thereafter



The situation is likely to be similar in the Eurozone despite a relatively stagnant growth outlook for next year. Core inflation pressures are proving to be sticky, which should reduce the likelihood of the ECB significantly loosening its monetary policy, resulting in rates remaining higher for longer. As a result, the Bund yield curve is expected to steepen and return to a normal curvature with longer maturity rates moving slightly higher and shorter maturities moving in the opposite direction.

With regards to the Eurozone periphery bonds, we expect the Spanish 10Y spread to Bunds to remain stable given the support from the ECB's Transmission Protection Instrument. However, the Italian 10Y spread is likely to widen as Italy struggles to balance its budget and faces ongoing difficulties in achieving the targets and milestones to receive funding from the EU's Recovery and Resilience Facility.

Government bonds

Market and portfolio implications:

- Stable long-end U.S. Treasury rates expected as economy recovers
- Bunds yield curve to normalise; inflation pressures remain sticky
- Italian spreads to Bunds to widen as budgetary risks bite

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The economic environment is expected to remain conducive to further tightening in U.S. IG spreads on the back of recovering economy over the forecast horizon. Similarly, the absence of a recession in the Eurozone should allow for compression in EUR IG spreads, however the relatively anaemic growth environment will mean they remain higher than the spreads of their U.S. counterparts. With rates expected to remain higher on both sides of the Atlantic, IG corporate bonds will continue to garner attention given their high quality and attractive yields.

The default rates for both USD HY and EUR HY have picked up and will probably climb as lower rated issuers struggle to refinance at higher rates. However, given last year's very low default levels, this rise in default rates should be seen as a normalisation rather than a major deterioration. We therefore expect the spreads to rise from current levels but not sharply. The strong fundamentals relative to historical levels, despite some unwinding seen in the last quarters, along with the elevated carry opportunity for investors, underpin this mild outlook.

Figure 5: Maturity wall challenging but manageable

Source: Bloomberg Finance L.P., Deutsche Bank AG. Data as of August 25, 2023.

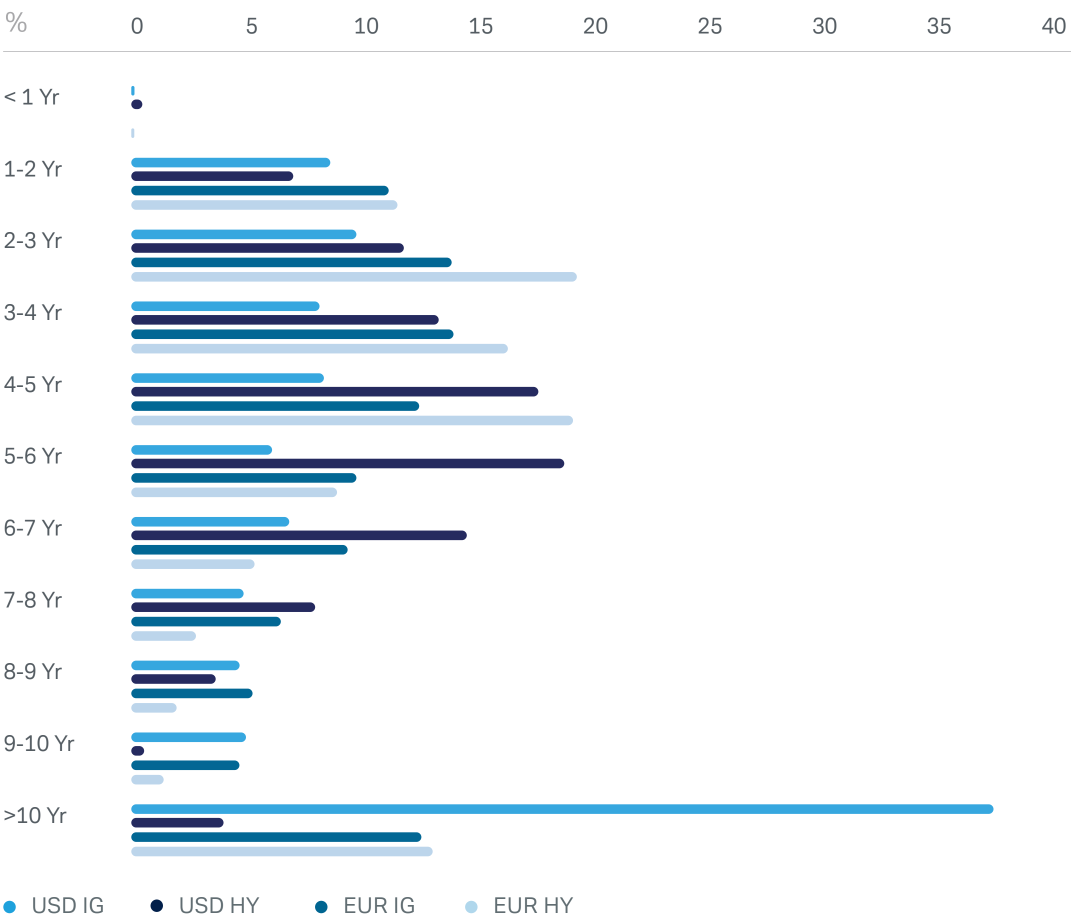

Chart shows percentage of issued bonds due to mature in time period stated

EM credit markets are likely to trade close to current levels over the next 12 months. The headwind from China's property sector is likely to recede, which should pave the way for sentiment to improve for the entire segment along with strong micro fundamentals and technicals returning to the forefront for EM corporates. On the other hand, idiosyncratic fiscal risks for some EM countries along with generally lower growth in China will probably prevent any improvement in EM sovereigns.

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Corporate credit

Market and portfolio implications:

- Spread tightening should boost the total return potential for IG
- HY default rates to normalise but carry opportunity strong
- EM credit spreads to move sideways as macro environment offsets micro factors

Figure 6: Fixed income forecasts for end-September 2024

Source: Deutsche Bank AG. Forecasts as of September 7, 2023.

United States (2-year Treasuries)	4.35%	95bp	USD IG Corp (BarCap U.S. Credit)
United States (10-year Treasuries)	4.20%		
United States (30-year Treasuries)	4.35%	450bp	USD HY (Barclays U.S. HY)
Germany (2-year Schatz)	2.60%		
Germany (10-year Bunds)	2.70%	110bp	EUR IG Corp (iBoxx Eur Corp all)
Germany (30-year Bunds)	2.80%	450bp	EUR HY (ML Eur Non-Fin HY Constr.)
United Kingdom (10-year Gilts)	4.10%		
Japan (2-year JGB)	0.15%	280bp	Asia Credit (JACI)
Japan (10-year JGB)	0.75%		

EM Sovereign (EMBIG Div.)	EM Credit (CEMBI Broad)
440bp	325bp

IG corporate bonds will continue to garner attention given their high quality and attractive yields.

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Equities (developed markets)

After an impressive H1, the rally in developed market (DM) equities has lost momentum, with the S&P 500 and the STOXX 600 moving sideways during Q3.

The valuation of the S&P 500, the H1 performance of which was driven by a few large technology companies benefiting from the growing interest in AI, remains stretched and has already discounted much of the pick-up in earnings expected in the next few quarters. Technology-related sectors have spearheaded an improvement in earnings quality, but partly due to the expected U.S. slowdown we see only limited upside potential for the S&P 500 from current levels.

The STOXX 600 registered muted performance in Q3 as economic indicators pointed to macro weakness, China's recovery stalled, and net interest income in the weighty banking sector was seemingly close to peaking. We do however expect European labour markets to remain robust and to support consumption and corporate profits. Although European equities appear to have priced substantial downside risks, since we expect earnings to rise slightly over the next 12 months, the STOXX 600 should offer attractive upside potential, especially if the Chinese recovery gathers steam again.

Figure 7: Next twelve month P/E ratios

Source: Refinitiv, Deutsche Bank AG. Data as of September 12, 2023.

The TOPIX, which has closed in the green every month this year in yen terms (record performance since April 2013) could continue its upward trend on the back of nominal growth that has picked up significantly for the first time in over 30 years, strong private sector cash holdings, and the Tokyo Stock Exchange's ambitions to strengthen corporate governance and capital.

Developed market equities

Market and portfolio implications:

- Limited upside for S&P 500 as earnings need to catch up with valuations
- Large STOXX 600 valuation discount likely to fade as modest earnings growth returns
- TOPIX has further room to run as backdrop remains favourable

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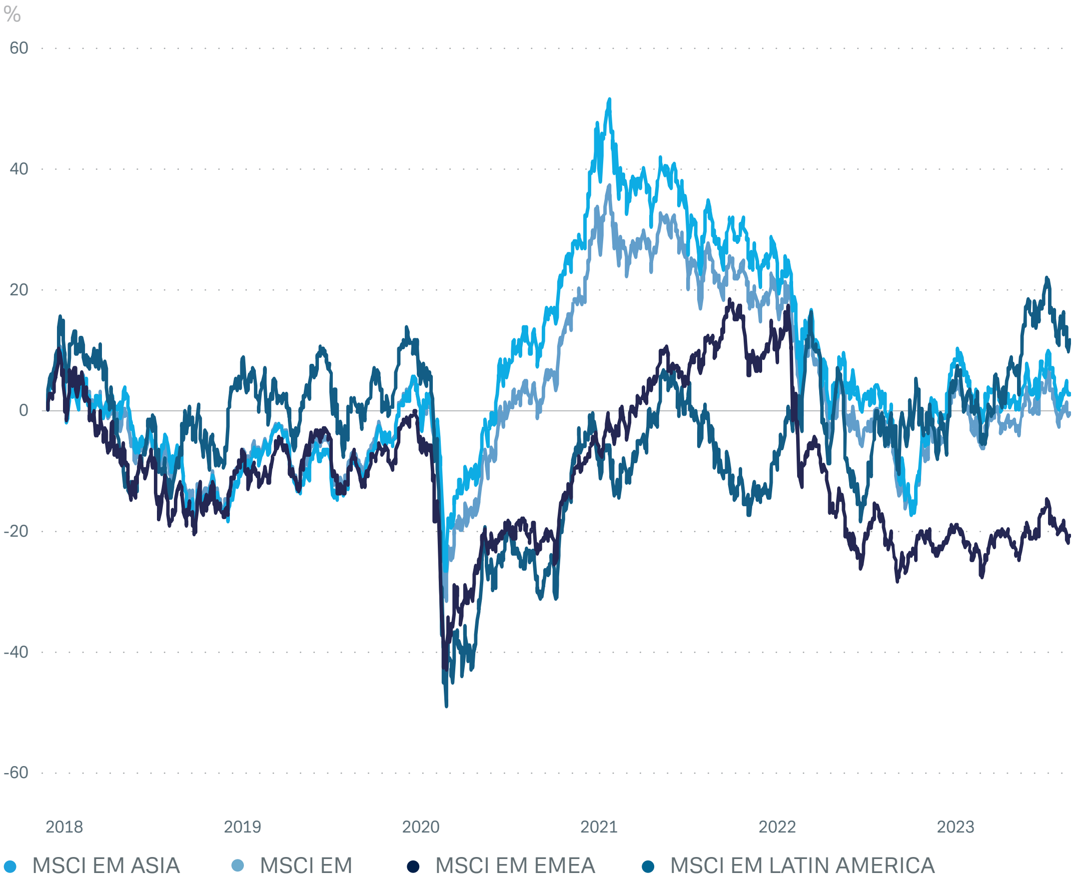
Equities (emerging markets)

Since the year began, emerging market (EM) equities have underperformed their developed market (DM) counterparts markedly. However, there are bright spots, with two top performers – Hungary and Mexico – posting total returns of 20% or more (in USD terms), while the best performing sectors have been IT and energy with double-digit gains.

Figure 8: Total return performance of emerging market equities (in USD)

Source: Refinitiv, Deutsche Bank AG. Data as of September 8, 2023.



China's stalled economic recovery has depressed sentiment in Chinese equity markets, while monetary and fiscal stimulus have been less effective than hoped. Should policy measures succeed in stabilising the property market and boosting demand for durable consumer goods – albeit slowly – this could enable Chinese equities to realise their upside potential (they have been trading below their long-term average). In EM Asia, we continue to like the Indian market given its dynamic growth prospects and as a major beneficiary of global supply chain diversification. Near-term risks could mainly emerge from higher-than-expected U.S. Treasury yields, a stronger USD and a further rise in crude oil prices.

Elsewhere in EMs, early hiking central banks in LatAm and Eastern Europe, such as Brazil, Chile and Hungary, have already entered or are expected to enter their respective easing cycles. This may see their respective currencies come under pressure if DM central banks such as the Fed and the ECB remain restrictive for longer, thus dampening equity performance for international investors in the short term. FX risks aside, energy and materials-heavy LatAm look attractive given its their low valuation and high dividend yield expected over the next 12 months.

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Despite its strong YTD outperformance, we remain constructive on the Mexican market. Though short-term consolidation may occur, medium-term investors could utilise potential corrections as interesting entry points. Over a 12-month horizon we see mid-single-digit upside for the MSCI Emerging Markets Index and we expect the MSCI EM Asia, which accounts for over 75% of global EM market cap, to slightly outperform its global peers.

Emerging market equities

Market and portfolio implications:

- EM IT and energy sectors could see double-digit performance this year
- We expect EM Asia to outperform its global peers over the next 12 months
- Chinese equities trading 20% below long-term average with moderate macro outlook

Figure 9: Equity index forecasts for end-September 2024

Source: Deutsche Bank AG. Forecasts as of September 7, 2023.

S&P 500	4,500
DAX	16,700
EuroStoxx 50	4,350
STOXX Europe 600	470
MSCI Japan	1,500
SMI	11,300
FTSE 100	7,400
MSCI EM	1,010
MSCI Asia ex Japan	655
MSCI Australia	1,350

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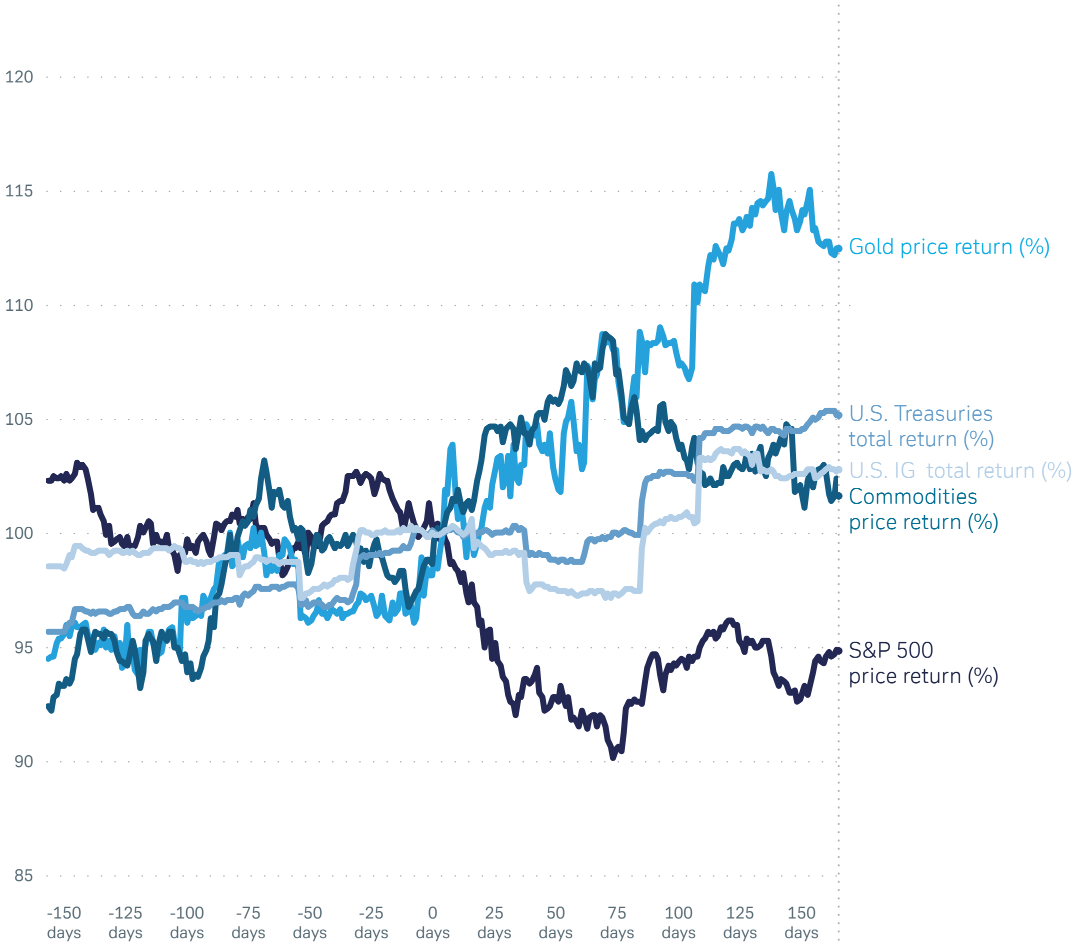
Commodities

With OPEC+ action, oil prices have risen again. Saudi Arabia's additional voluntary production cuts and reduced Russian exports have more than offset the recent jump in U.S. oil production. The demand side does continue to be underpinned by China where apparent oil demand remains high, despite declining from its peak in April. We therefore continue to expect an elevated oil price environment over the next 12 months. However, uncertainty surrounding China's economic outlook along with the expected slowdown in the U.S. may induce near-term price volatility.

Figure 10: Average returns around U.S. recessions since 1973 (Index: 0 days = 100)

Source: Bloomberg Finance L.P., Deutsche Bank AG. Data as of September 4, 2023.



With monetary policy at advanced stages, we expect policy rates to remain higher for longer. Nevertheless, positioning on expectations of rate cuts by the end of the forecast horizon should propel gold higher. Additionally, the possibility of recession despite the increased likelihood of a soft landing along with the demand from EM central banks should keep gold well bid over the course of next 12 months. Figure 11 presents our end-September 2024 Commodity forecasts.

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Figure 11: Commodity forecasts for end-September 2024

Source: Deutsche Bank AG. Forecasts as of September 7, 2023.

Gold (USD/oz)	Copper (USD/t)	Crude Oil (Brent Spot, USD/b)
2,150	8,800	88

Commodities

Market and portfolio implications:

- Chinese demand and OPEC+ cuts dominate the oil outlook
- Gold to continue to shine on the back of economic and interest rate uncertainty
- Turn in manufacturing sentiment required for copper

FX

Following the tenth consecutive hike by the ECB at its September meeting, the comments by the central bank suggested that further rate hikes are unlikely. Although upside risks remain for the monetary policy, we expect the support EUR draws from it is likely to wane since significant upside risks are also present for U.S. monetary policy given the hawkish September FOMC meeting. Nevertheless, the ECB might be stuck at the terminal rate for longer than the Fed as energy price impact is a bigger problem for the Eurozone given that it is a net energy importer – in contrast to the U.S – and labour markets should remain tight. Tougher regulation is likely to slow the feedthrough of second-round effects in the Eurozone, whereas slack in the U.S. economy should build faster and enable an occasional cut. A tightening of the Bunds-U.S. Treasuries spread could support the EUR then. In addition, many negative economic expectations are already priced into the EUR, while the outlook for the USD is seen to be positive.

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In Japan, ultra-loose monetary policy is likely to be maintained until at least spring 2024. Potential for a sustainable recovery in the JPY will only arise as less restrictive monetary policy is priced into other currency areas. The JPY should therefore have appreciated against the USD by the end of September 2024.

Figure 12: FX forecasts for end-September 2024

Source: Deutsche Bank AG. Forecasts as of September 7, 2023.

EUR vs. USD	1.12
USD vs. JPY	135
EUR vs. JPY	151
EUR vs. CHF	1.00
EUR vs. GBP	0.86
GBP vs. USD	1.30
USD vs. CNY	7.20

With underlying inflation dynamics having broadened and wage growth remaining vigorous in the UK, the Bank of England's monetary policy is likely to remain restrictive for the foreseeable future. We see the GBP/USD moderately firmer at the end of September 2024.

China's sluggish economic recovery has weighed heavily on the CNY. However, the Chinese authorities' stimulus measures should support the CNY in the medium term. We expect the CNY to trade a little stronger by the end of September 2024.

FX

Market and portfolio implications:

- The EUR might appreciate moderately against the USD as the ECB should keep rates high for longer than the Fed
- Both the JPY and GBP should also gain against the USD due to the improved growth outlook for Japan and the UK
- Stimulus could help the CNY rebound vs the USD

Changing growth dynamics could help the EUR pare back recent losses against the USD.

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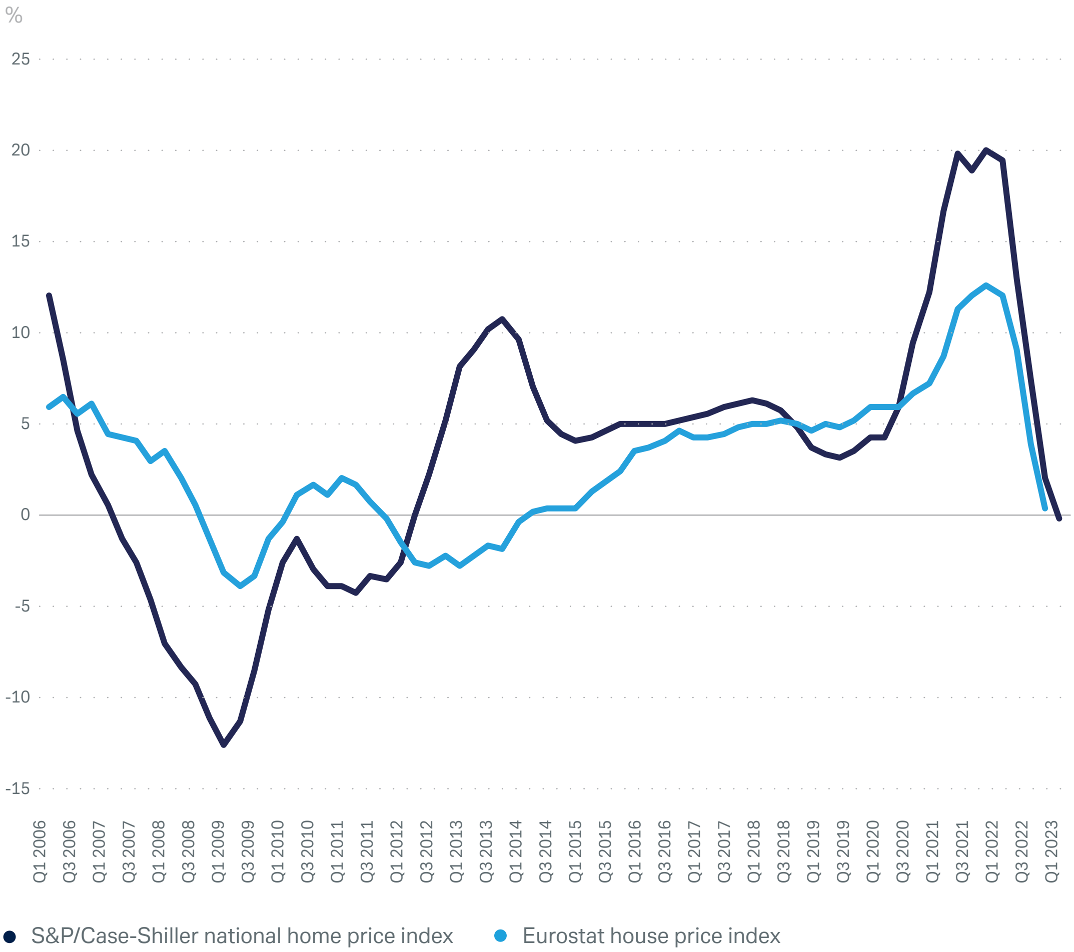
Real estate

Rising interest rates and the economic slowdown have taken their toll on the sector. Robust fundamentals have, however, enabled most segments and countries to cope. The few exceptions include markets characterised by high levels of private household debt and floating-rate mortgages. The office segment continues to trend downward, due to the digitalization- and pandemic-related decline in demand, while price discovery is being inhibited by sharply reduced transaction volumes. However, prime offices that meet high ESG standards continue to enjoy robust demand and generate solid rental growth.

We continue to see the brightest prospects for industrial and residential properties, with their vacancy rates below historical averages, while demand and supply dynamics remain strong. Retail should perform better than the office segment but not as well as industrial and residential, with department stores being challenged by digitization trends. Leisure-related properties have a promising outlook thanks to the recovery in travel, tourism and out-of-home socialising. Housing shortages persist in major developed markets due to demographic shifts that are boosting demand and subdued construction activity exacerbated by high building costs. Investors should closely monitor the sustainability aspect, as energy-efficient buildings are commanding rising price premiums. Residential and industrial properties are also experiencing solid rental growth with the latter benefiting from the inexorable rise of e-commerce, limited availability of space, and supply chain diversification imperatives.

Figure 13: U.S. and Eurozone house prices (change YoY)

Source: Refinitiv. Data as of September 13, 2023.



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As the hiking cycle nears its end and rates plateau, non-office real estate prices may have already bottomed out. Since we expect the major economies to avoid a severe recession and experience continued moderate wage growth, the property sector could soon embark on a new uptrend – albeit less steep than during the last cycle.

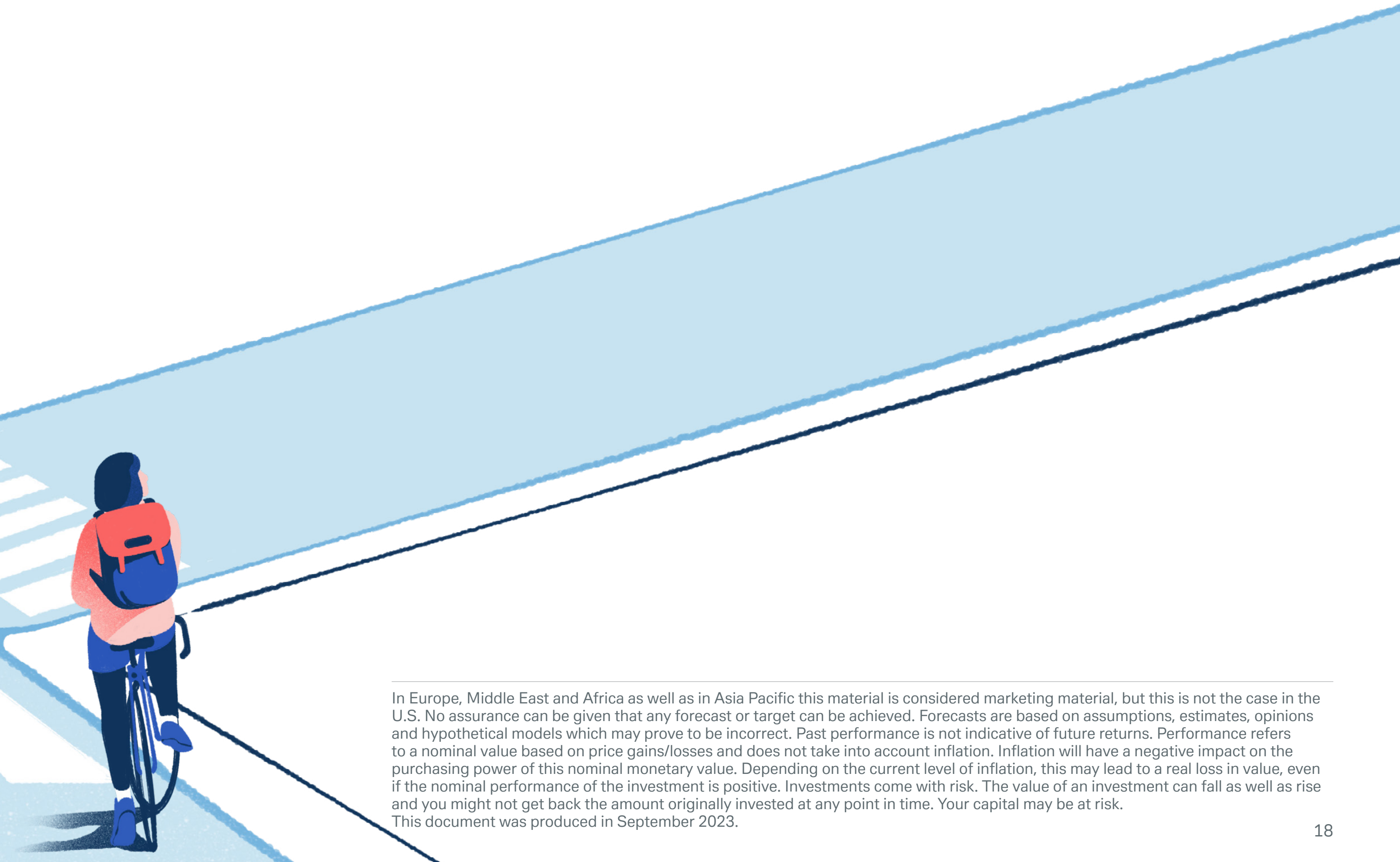
China remains an outlier with its domestic real estate recovery having stalled. Policy measures should however ultimately stabilise market activity and enable ailing developers to gradually recover.

Real estate

Market and portfolio implications:

- Headwinds remained manageable in most regions and segments
- Real estate markets approaching bottom, return to moderate price increases likely
- Residential and logistics properties remain first choice

In general, retail property should perform better than the office segment but not as well as industrial and residential.



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04

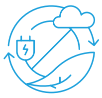
Update on long-term investment themes

We see three key interlinked long-term global challenges: how to properly manage and conserve our global resources; how to provide for a still-growing global population; and how to develop key technologies to help us all do this. Our long-term investment themes (LTIT) are therefore grouped into three areas: resource transition, population support and next-phase technology.

Resource transition

Land Resources:

These include natural resources that are both below and above-ground, e.g. minerals, agriculture and water. We have been increasing our demand on these resources for many years. The challenge is to reduce consumption and encourage conservation and recycling through technological as well as nature-based solutions. Regeneration of nature, for example through reducing CO_2 emissions is another priority. Cement, aluminium, steel and plastics are among the key development areas.



Energy Transition:

We need to produce and use energy more sustainably. The usual emphasis here is on switching sources of energy to those that emit less CO_2. But the transition will also involve changing the way we distribute, store and consume energy, also with a growing emphasis on security. Electrification is likely to be a key component here. We consider both the enhancement of existing renewable technologies (e.g. solar, wind), and potential new energy sources (e.g. "green" hydrogen).

Blue Economy:

A healthy Ocean provides ecosystem services and benefits that help human wellbeing and global economic prosperity. But over-exploitation and rising temperatures will require a rethink of existing maritime industry value chains. The augmentation of existing sectors such as wild fishing, aquaculture, shipping and ports, energy, and tourism by new areas such as deep-sea mining and biotechnology will create particular challenges.

Population support

Infrastructure:

Investor interest has broadened out from traditional physical infrastructure (e.g. utilities, power, transport) to also include the green transition and social equity, with technology driving change in many areas. Government policy is also changing fast, particularly around the energy transition. All this is encouraging an increasingly differentiated view about the nature of infrastructure investment and expected returns.

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HealthCare and MedTech:

Rising personal incomes are helping to drive demand, with technology providing a wide range of new potential solutions. Fundamental scientific advances (e.g. in biotechnology and genomics) are being bolstered by technology at a broad (e.g. artificial intelligence in drug development) and individual patient level (e.g. telemedicine and remote monitoring).

Millennials and GenZ:

The economic power and spending preferences of different demographic age groups will remain important for both corporate behaviour and government economic policy. An emphasis on access to goods and services rather than ownership will be accompanied by a focus on environmental and social benefits. Perceived generational inequality in wealth and property ownership could also have policy implications.

Next-phase technology

Artificial Intelligence:

Investor interest in artificial intelligence (AI) has escalated during 2023 on the back of growing appreciation of its potential to boost productivity and growth in the long term. "Narrow" AI trained to perform specific tasks is already having a major impact across many sectors, driving resources into areas such as deep learning, neuro-linguistic programming (NLP) and image recognition. Artificial General Intelligence (AGI) may eventually advance the process much further.

Smart Mobility:

The economic benefits of transportation are substantial but so are the environmental costs. We need to switch to more efficient technologies, optimise our use of mobility infrastructure and prioritise some transport needs. Continuing urbanisation, particularly in emerging markets is also likely to encourage radical solutions. New ownership structures and regulatory models will be part of the response.

Cyber Security:

Growing perceived risks for individuals, corporates and government from cyber security breaches continue to drive increases in spending here. Geopolitical tensions and the growing capabilities of AI are demanding more sophisticated responses. Infrastructure vulnerabilities and the use of deepfake technology are among immediate concerns.

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Appendix 1 Macroeconomic forecasts

	2023 Forecast	2024 Forecast
GDP growth rate (%)		
U.S.*	2.0	0.4
Eurozone (of which)	0.8	0.9
Germany	0.0	1.0
France	0.7	0.8
Italy	0.9	0.6
Spain	2.5	1.4
Japan	2.1	1.1
China	4.8	4.5
World	2.9	2.7
Consumer price index inflation (%)		
U.S.	4.1	2.6
Eurozone	5.7	2.5
Germany	6.0	3.2
Japan	2.9	1.9
China	0.5	2.0

*For the U.S., GDP growth Q4/Q4 is 1.4% in 2023 and 0.4% in 2024
Source: Deutsche Bank AG. Forecasts as of September 7, 2023.

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Appendix 2 Asset class forecasts

Bond yield and spread forecasts for end-September 2024

United States (2-year Treasuries)	4.35%
United States (10-year Treasuries)	4.20%
United States (30-year Treasuries)	4.35%
USD IG Corp (BarCap U.S. Credit)	95bp
USD HY (Barclays U.S. HY)	450bp
Germany (2-year Schatz)	2.60%
Germany (10-year Bunds)	2.70%
Germany (30-year Bunds)	2.80%
United Kingdom (10-year Gilts)	4.10%
EUR IG Corp (iBoxx Eur Corp all)	110bp
EUR HY (ML Eur Non-Fin HY Constr.)	450bp
Japan (2-year JGB)	0.15%
Japan (10-year JGB)	0.75%
Asia Credit (JACI)	280bp
EM Sovereign (EMBIG Div.)	440bp
EM Credit (CEMBI Broad)	325bp

FX forecasts for end-September 2024

EUR vs. USD	1.12
USD vs. JPY	135
EUR vs. JPY	151
EUR vs. CHF	1.00
EUR vs. GBP	0.86
GBP vs. USD	1.30
USD vs. CNY	7.20

Equity index forecasts for end-September 2024

United States (S&P 500)	4,500
Germany (DAX)	16,700
Eurozone (EuroStoxx 50)	4,350
Europe (STOXX 600)	470
Japan (MSCI Japan)	1,500
Switzerland (SMI)	11,300
United Kingdom (FTSE 100)	7,400
Emerging Markets (MSCI EM)	1,010
Asia ex Japan (MSCI Asia ex Japan)	655
Australia (MSCI Australia)	1,350

Commodity forecasts for end-September 2024

Gold (USD/oz)	2,150
Copper (USD/t)	8,800
Crude Oil (Brent Spot, USD/b)	88

Source: Deutsche Bank AG. Forecasts as of September 7, 2023.

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Glossary

Artificial general intelligence (AGI) is a hypothetical and still loosely-defined concept, envisaging a system that would be capable of learning how to perform any intellectual or economically-valuable task that a human being or animal can accomplish.

Artificial intelligence enables machines to simulate human intelligence processes, such as learning from experience and adapting to new inputs, in order to perform specific tasks.

BRICS is a grouping of the economies of Brazil, Russia, India, China and South Africa. In August 2023 the existing members agreed to admit Saudi Arabia, Iran, Ethiopia, Egypt, Argentina and the United Arab Emirates to the bloc from January 2024.

Bunds are longer-term bonds issued by the German government.

Carry investments are intended to deliver higher returns, perhaps accessed (as in currencies) through borrowing in a lower-yielding environment.

CHF is the currency code for the Swiss franc.

CNY is the currency code for the Chinese yuan.

CO_2 is the chemical symbol for carbon dioxide.

The consumer price index (CPI) measures the price of a basket of products and services that is based on the typical consumption of a private household.

Core inflation (or underlying inflation) refers to a measure of inflation which excludes some volatile components (e.g. energy). These excluded components can vary from country to country.

The DAX is a blue-chip stock-market index consisting of the 40 major German companies trading on the Frankfurt Stock Exchange; other DAX indices include a wider range of firms.

Dividends are payments made by a company to its shareholders.

Earnings per share (EPS) are calculated as a company's net income minus dividends of preferred stock, divided by the total number of shares outstanding by the total number of shares outstanding.

An emerging market (EM) is a country that has some characteristics of a developed market in terms of market efficiency, liquidity and other factors, but does not meet all developed market criteria.

ESG investing pursues environmental, social and corporate governance goals.

EUR is the currency code for the euro, the currency of the Eurozone.

The European Central Bank (ECB) is the central bank for the Eurozone.

The EuroStoxx 50 Index tracks the performance of blue-chip stocks in the Eurozone and includes the super-sector leaders in terms of market capitalisation.

The Eurozone is comprised of 20 European Union member states that have adopted the euro as their common currency and sole legal tender.

The Federal (Fed) funds rate is the interest rate at which U.S. depository institutions lend overnight to other depository institutions.

The Federal Reserve (Fed) is the central bank of the United States. Its Federal Open Market Committee (FOMC) meets to determine interest rate policy.

GBP is the currency code for the British pound/sterling.

Gilts are bonds that are issued by the British Government.

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Government bonds are issued by a government to support government spending, mostly in the country's domestic currency and are backed by the full faith of the government.

Gross domestic product (GDP) is the monetary value of all the finished goods and services produced within a country's borders in a specific time period.

Headline PCE (personal consumption expenditure) inflation tracks price changes in a basket of goods and services designed to cover all the expenditures typically made by consumers, whereas core PCE – the Federal Reserve's preferred inflation metric – excludes some volatile components. In the U.S., food and energy are excluded from core PCE inflation.

High yield (HY) bonds are higher-yielding bonds with a lower credit rating than investment-grade corporate and government bonds.

An investment grade (IG) rating by a rating agency such as Standard & Poor's indicates that a bond is seen as having a relatively low risk of default.

JPY is the currency code for the Japanese yen, the Japanese currency.

The MSCI AC World Index captures large- and mid-cap companies across 23 developed- and 23 emerging-market countries.

The MSCI Asia ex Japan Index captures large- and mid-cap representation across 2 of 3 developed market countries (excluding Japan) and 8 emerging-market countries in Asia.

The MSCI Australia Index measures the performance of 60 large and mid-cap stocks that constitute approximately 85% of the free float-adjusted market capitalisation in Australia.

The MSCI Emerging Markets Index captures large- and mid-cap representation across 23 emerging market countries.

The MSCI Japan Index measures the performance of 259 large and mid-cap stocks that account for about 85% of Japanese market capitalisation.

NTM stands for next twelve months in the context of earnings and thus price/earnings ratios.

The Organization of the Petroleum Exporting Countries (OPEC) is an international organisation which aims to "coordinate and unify the petroleum policies" of its 13 members. The so-called "OPEC+" brings in Russia and other producers.

The People's Bank of China (PBoC) is the central bank of the People's Republic of China.

Price/earnings (P/E) ratios measure a company's current share price relative to its past or expected future earnings per share.

Real rates adjust changes of value for factors such as inflation.

A recession is usually defined as two consecutive quarters of GDP contraction.

The Recovery and Resilience Facility is an EU instrument aimed at mitigating the economic and social impact of the Covid-19 pandemic on its member states by providing grants and loans to support reforms and investments.

The S&P 500 Index includes 500 leading U.S. companies capturing approximately 80% coverage of available U.S. market capitalization.

The Secured Overnight Financing Rate (SOFR) is a benchmark interest rate for U.S. dollar-denominated loans and derivatives, based on transactions in the U.S. Treasury repurchase market.

A spread is the difference in the quoted return on two investments, most commonly used when comparing bond yields.

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The STOXX Europe 600 (STOXX 600) is a broad-based index that tracks the performance of 600 companies of various sizes from 17 European countries.

The Swiss Market Index (SMI) includes 20 large and mid-cap stocks.

Terms of trade is the relationship between the prices at which a country sells its exports and the prices it pays for its imports.

TOPIX refers to the Tokyo Stock Price Index, a weighted index incorporating a wide range of Japanese domestic companies.

Total return is the actual rate of return on an investment, including (where applicable) dividends, capital gains, interest, and other financial rewards, over a period of time.

The Transmission Protection Instrument unveiled by the ECB in July 2022 is a bond purchase scheme aimed at helping more indebted Eurozone countries and preventing financial fragmentation within the currency bloc by ensuring the smooth transmission of the ECB's monetary policy stance.

Treasuries are bonds issued by the U.S. government.

Treasury bills (T-Bills) are U.S. government-issued fixed income securities offered to investors with maturity terms of between four weeks to one year.

Treasury bonds (T-Bonds) are U.S. government-issued fixed income securities offered to investors in terms of 20 and 30 years to maturity.

The U.S. debt ceiling is a legislative limit on the amount of Federal debt that can be issued by the U.S. Treasury.

Yield is the income return on an investment referring to the interest or dividends received from a security and is usually expressed annually as a percentage based on the investment's cost, its current market value or its face value.

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