Deutsche Bank
Chief Investment Office

PERSPECTIVES

ECONOMIC AND ASSET CLASS OUTLOOK

1/2024

MACROECONOMICS
What kind of landing?

FIXED INCOME
Carry on!

EQUITIES
Improving fundamentals

Macroeconomics: What kind of landing?

- Economic growth: Strong in the U.S., subdued in Europe and Japan.
- Overall easing inflation with some stickiness in the process.
- Expect Fed and ECB to cut interest rates in June, Japan to end NIRP.

After closing the year with annualised GDP growth of 3.2% in Q4 2023, the U.S. economy grew by 2.5% in 2023 as a whole. With the momentum carrying over into this year, we raise our GDP growth forecast for 2024 to 1.8%. That said, lagged effects from monetary tightening could still be felt. As U.S. recessions typically come unannounced, some degree of caution is warranted. We expect the ongoing normalisation of the labour market to continue. The unemployment rate rose by 20 bps to 3.9% in February, the highest level since January 2022 and wage growth decelerated to 4.3%.

Headline consumer price inflation in the U.S. averaged 4.1% in 2023. It has eased in recent months to 3.2% in February 2024. While core inflation has been steadily trending down – to 3.8% in February – sequentially it has risen over the past three months suggesting that the next steps towards the 2% target rate will be a bumpy ride. We expect inflation to average 2.8% throughout 2024. In response to easing price pressures, we expect the Fed to lower its interest rates. We project the initial 25 bps cut in June 2024, followed by two additional cuts by the end of the first quarter 2025. The U.S. presidential elections in November 2024 will play an important role when it comes to the exact timing as will incoming data.

In the Eurozone, GDP growth was muted at just 0.5% in 2023 as tight financial conditions weighed on the economy, particularly on interest-sensitive activities such as construction and investment, and also on manufacturing. Over the course of this year, these trends could ease somewhat, providing a modest tailwind for economic growth. We expect GDP growth to recover slightly in 2024 but to remain subdued at 0.7%.

After averaging 5.5% in 2023, inflation in the Eurozone has been falling, mainly on the back of lower energy prices. It reached 2.6% in February 2024, while core inflation stood at 3.1%. Headline inflation is expected to ease further, averaging 2.5% in 2024. Subdued economic activity could contribute to lower price pressures, while a tight labour market will work against it. We expect the ECB to deliver a first rate cut of 25 bps in June and two further rate cuts of the same magnitude over the rest of the year as well as an additional cut in the first quarter of 2025.

In 2023, Japan achieved robust GDP growth of 1.9%, despite weak domestic demand and real consumption in the second half of the year. In the coming quarters, the ongoing Shunto wage negotiations – which are expected to result in significant wage hikes – could contribute to a rise in private consumption. This would support reinflationary tendencies. We expect GDP to grow by 0.5% in 2024.

Last year, inflation in Japan averaged 3.2%, and it fell further in January 2024 to 2.2%, its lowest level since March 2022. Core inflation fell to a 22-month low of 2.0%. We expect inflation to continue to ease, averaging 2.3% in 2024, mainly on the back of falling energy costs. We expect the BoJ to end its negative interest rate policy (NIRP) in spring 2024. At the end of the forecasting period, we expect the policy rate to be 0.25%.

Fixed Income: Carry on!

- "Higher for longer" theme intact as longer-end yields remain elevated.
- Yield curve steepening should push down shorter end yields.
- Investment Grade markets are expected to remain well bid.

The U.S. economy has shown resilience to the point where a scenario of continued growth is being actively discussed. Labour markets remain comparatively robust while the inflation problem is not yet resolved. The economy should be reaccelerating by the end of this year following the rate cuts, encouraging a "bull steepening" of the yield curve, where short-term rates fall but long-term ones prove more resilient. However, there is unlikely to be a material decline in longer-end rates which already look to be fluctuating around equilibrium levels typical of medium high inflation regimes. We expect U.S. Treasury yields to remain high for longer as a return to the previous close to zero policy rate environment is unlikely in the coming years (March 2025 10-year Treasury yield target: 4.20%; 2-year Treasury yield target: 3.95%).

We expect the inflation rate to remain thorny for the ECB. Wage growth will probably stay high which should feed into service inflation as well resulting in a risk of inflation overshooting the central bank's target. Bund yields are therefore likely to remain elevated although curve steepening should push the lower-end yields down and the longer-end slightly higher. This should also be helped by higher net issuance of long-term bonds compared to previous years (March 2025 10-year Bund yield target: 2.60%; 2-year Bund yield target: 2.50%).

Italian spreads to Bunds remain at risk of widening as debt sustainability concerns have not disappeared completely. The end of reinvestments under the PEPP programme is another factor that may push spreads wider from current levels (March 2025 Italy 10-year spread: 180 bps).

Investment Grade (IG) bond markets across the Atlantic are seeing strong demand. The inflows have risen significantly while new issuances have been well oversubscribed. It will probably continue to benefit from the strong carry opportunity and the yield curve steepening should reduce the lure of cash and push flows into longer-duration assets like IG. The weakening of fundamentals is unlikely to be dramatic enough to cause a deteriorating USD market. EUR market should see further tightening given balance sheets remain strong with leverage at the lower end by historical standards.

Refinancing risks in High Yield (HY) markets have eased slightly as firms facing maturities in the coming months are issuing new bonds at current low spread levels. However, the lower-rated issuers continue to struggle, pushing default rates higher in both HY markets. The debt servicing capacity is also on a downtrend. We therefore expect some correction in spreads despite the reduction in refinancing risks.

EM sovereign spreads are likely to move slightly higher as the strong growth environment for most EM countries has already been priced in. However, the U.S. presidential elections in November may induce volatility into this asset class. By contrast, Asia ex. Japan credit spreads will probably remain rangebound, perhaps falling slightly as net issuance is likely to remain negative while corporate default rates stay close to current levels.

Equities: Improving fundamentals

- We lift our equity targets but upside from here is modest.
- Still, certain regions and sectors offer plenty of attractive investment opportunities.
- Earnings growth set to become the main driver of stocks again.

A mix of some promising economic data that boosted investors' confidence in a soft landing of the U.S. economy, growing excitement about the prospects of artificial intelligence (AI) and some investors experiencing FOMO (fear of missing out) has propelled most developed market (DM) stock indices higher in recent months: S&P 500, STOXX Europe 600 and TOPIX all surged to new all-time highs.

Meanwhile, the performance of emerging market (EM) indices was more mixed. While Indian, Korean, and Taiwanese stocks joined the DM rally, Chinese stocks underperformed due to sustained investor scepticism regarding Beijing's response to the country's economic challenges, while Latin American stocks underperformed due to the weakness of commodity prices.

After four months without a meaningful decline and sentiment indicators starting to show first signs of exuberance, we feel that a setback of equity markets cannot be ruled out. Typically, the U.S. stock market corrects by 5% three times a year and sees a 10% correction once a year. Such a consolidation could actually be seen as a positive development because the recent market rally can almost entirely be attributed to the strong performance of only a few stocks.

Nevertheless, we remain optimistic about the medium and long-term prospects of the stock markets and recommend utilising any meaningful price decline to increase positions.

Reflecting the upgrade of our macroeconomic growth forecasts for the U.S. and China we lift our targets for all the stock indices we cover. We forecast the S&P 500 at 5,300 points in March 2025 and the STOXX Europe 600 at 515 points. We foresee sideways trading for the MSCI Emerging Markets to 1,050 points and the MSCI Japan to rise to 1,740 points.

We are confident that companies will be able to increase their earnings and dividends over the coming years as the global economy reaccelerates and central banks loosen monetary policies. For the next 12 months we project earnings growth of around 8% in the U.S., at mid-single-digit rates in Europe and even above 10% in Asian EMs and Japan.

We acknowledge that valuations of U.S. indices have risen well above historic average levels. However, we do not think they are unreasonable as a certain premium for the high profitability of U.S. IT and internet companies that make up an ever-larger share of the indices is appropriate. Also, we point to the fact that the median S&P 500 company trades at valuations that are very close to historic levels. Although stock market valuations of other regions have risen as well recently, they remain far from expensive. Particularly European and Chinese stocks strike us as cheap. Japanese stocks are supported by strong earnings growth, currency weakness and corporate governance reforms.

Across sectors we recommend stocks of U.S. IT and internet companies which are a major driving force in the new era of AI. In Europe we highlight world-leading industrial and consumer stocks alongside financials which are undervalued and offer high payout yields.

Commodities: Price risks are to the upside

- Oil supply to track demand growth and keep oil prices around current levels.
- Central bank buying along with pricing of rate cuts to help gold higher.
- Green infrastructure build-up providing green shoots for industrial metals.

The inconclusive data from China continues to underpin oil demand growth concerns. We do not expect Chinese demand to continue to evolve at the same levels as last year given the post-Covid reopening boost to consumption is already behind us. IEA therefore expects Chinese oil demand growth to decline from 1.7mbbl/d in 2023 to 0.6mbbl/d this year. Along with China, India's oil consumption will increasingly take the centre stage. Demand in the U.S. should also see tailwinds as its economy reaccelerates by the end of this year. On the supply side, OPEC+ continues to provide a floor for oil prices as it recently extended its 2.2 mbbl/d of additional voluntary cuts into the second quarter. The cartel may gradually start increasing its production in the second half but will remain mindful of the price impact it may cause. Its recent actions have highlighted its aversion to prices below USD 80/bbl. On the other hand, U.S. oil output should remain elevated but further significant gains are unlikely given the decline in oil well inventory. Geopolitical tensions in the Middle East and Russia continue to harbour major upside risks in the event of escalation (March 2025 Brent target: USD 84/bbl).

A warmer and windier winter, coal-to-gas switching and continued weak demand from energy intensive sectors has pushed carbon prices lower. The move to frontload the allowance auctions to raise money for the REPowerEU plan has also weighed on prices. However, this would mean fewer allowances being auctioned in 2026, potentially pushing prices higher in the medium to long term. Additionally, markets will start gearing up for the introduction of carbon border tax in the EU, while policymakers continue to work towards tighter emission standards for the future (March 2025 Carbon target: USD 80/t).

Gold touched record levels recently on the back of robust buying activity by China which saw gold exports from Switzerland to China triple month-over-month in January. We continue to expect robust demand for physical gold as central banks globally diversify their foreign reserves while ever-present geopolitical and economic risks keep its hedging demand elevated. On the other hand, the opportunity cost of holding gold will also decline as major central banks gear up for rate cuts. These cuts will reduce the shorter-end yields, reducing their attraction relative to gold which is a non-yielding asset. (March 2025 Gold target: USD 2,400/oz).

Despite mediocre price gains last year copper's physical demand remained robust. The global build-up of renewable infrastructure, including the massive investments in China in particular, was able to offset the weak manufacturing activity globally and the ailing Chinese housing market. We expect this support to continue while manufacturing activity also starts expanding again this year. On the other hand, supply is unlikely to make significant headway as mines continue to face the risk of disruptions in South America for social and environmental reasons (March 2025 Copper target: USD 9,600/t).

Currencies: In equilibrium

- Synchronised cutting cycles of DM central banks to limit FX volatility.
- Little impact of BoJ tightening on JPY as rate differentials to other DMs remain wide.
- Low inflation environment in China and easing PBoC to weigh on CNY.

Currency market fluctuations have receded recently as market expectations regarding the future path of monetary policy have become more aligned with the economic backdrop and our expectations. Therefore, our forecasts remain largely unchanged.

Most economies across the Eurozone and the U.S. have weathered the hiking cycle well, even though growth in the Eurozone is comparably anaemic compared to the U.S. The ongoing but slowing progress on inflation should allow monetary policy authorities to embark on a gradual policy rate cutting cycle this year. By the end of March 2025 we expect the Fed and the ECB to deliver 75 bps and 100 bps of rate cuts respectively. This should weigh on yields at the short end of the respective yield curves in a largely exchange rate neutral manner. Assuming rate cuts and accelerating growth in the second half of this year, safe haven flows – which have previously supported the USD – should further abate, counteracting the drag from more sluggish economic growth in the Eurozone on the EUR. We therefore keep our EUR/USD forecast at 1.10 at end-March 2025.

We also expect the BoE to deliver its cuts largely in accordance with the Fed and the ECB. While valuations would support a stronger GBP against the USD, weaker economic growth dynamics in the UK are likely to keep a lid on sterling's potential to appreciate. We therefore forecast GBP/USD at 1.28 at end-March 2025.

Japan's economic growth has stalled recently but robust wage hikes and a return of real wage growth could bolster dynamics later this year. This could keep inflation elevated for longer and allow the escape from the deflationary spiral that has plagued the country throughout the last three decades. We therefore expect the BoJ to move in the opposite direction to the aforementioned DM central banks and to tighten monetary policy. This should push government bond yields slightly higher. Adding the rate cuts of the other DM central banks yield differentials should narrow. Even though this should bolster the JPY we see limited scope for a meaningful appreciation as yield differentials remain sizeable and real rates in Japan negative. The absence of a recession in the U.S. and Europe also reduces the risk of large repatriations by Japanese investors that could theoretically lead to a swift appreciation of the JPY. We forecast USD/JPY at 145 at end-March 2025.

Structural issues in the property sector are weighing on China's long-term growth trajectory. Inflation is likely to remain well below the PBoC 3% target in 2024 and 2025. To bolster consumption and contain further house price declines, which might inhibit consumer sentiment, we expect the People's Bank of China to loosen monetary policy. This is likely to weigh on the CNY, which we forecast at USD/CNY at 7.35 at end-March 2025.

Over our forecast horizon, we highlight geopolitics and the numerous elections in 2024 as potential sources of erratic exchange rate fluctuations.

Appendix 1

Macroeconomic forecasts

	2024	2025	Consensus 2024 (BBG*)
GDP growth rate (%)			
U.S.[1]	1.8	1.6	2.0
Eurozone	0.7	1.1	0.5
Germany	0.4	1.2	0.2
France	0.7	0.9	1.3
Italy	0.5	0.8	1.1
Spain	1.4	1.2	1.9
Japan	0.5	1.1	0.7
China	4.8	4.4	4.6
World	3.0	3.1	2.7
Consumer price inflation (%)			
U.S.	2.8	2.3	2.7
Eurozone	2.5	2.3	2.3
Germany	2.6	2.5	2.5
Japan	2.3	1.7	2.2
China	0.8	1.7	1.0
Unemployment rate (%)			
U.S.	4.0	4.1	4.1
Eurozone	6.7	6.5	6.7
Germany	5.9	5.7	5.9
Japan	2.4	2.4	2.5
China[2]	5.0	5.0	5.1
Fiscal balance (% of GDP)			
U.S.	-6.2	-6.2	-6.0
Eurozone	-2.8	-2.7	-3.0
Germany	-0.9	-0.7	-1.6
Japan	-4.5	-3.0	-4.1
China[3]	-13.3	-13.0	-5.0

*Bloomberg consensus. [1] For the U.S., GDP growth Q4/Q4 % is 0.5% in 2024 and 2.0% in 2025. [2] Urban unemployment rate (end of period), not comparable to consensus data. [3] China fiscal deficit refers to augmented fiscal balance (widest definition) from IMF. It is not comparable with the consensus. Data as of March 2024.
Source: Deutsche Bank AG; Forecasts as of March 14, 2024.

Appendix 2

Asset class forecasts for end of March 2025

Sovereign bond yields (%)	
United States (2-Year U.S. Treasury)	3.95
United States (10-Year U.S. Treasury)	4.20
United States (30-Year U.S. Treasury)	4.45
Germany (2-Year German Bund)	2.50
Germany (10-Year German Bund)	2.60
Germany (30-Year German Bund)	2.80
United Kingdom (10-Year UK Government)	4.20
Japan (2-Year Japan Government)	0.25
Japan (10-Year Japan Government)	0.90

Benchmark rates (%)	
United States (federal funds rate)	4.50-4.75
Eurozone (deposit rate)	3.00
United Kingdom (repo rate)	4.25
Japan (policy rate)	0.25
China (1-year lending rate)	3.30

Currencies	
EUR vs. USD	1.10
USD vs. JPY	145
EUR vs. JPY	160
EUR vs. CHF	0.98
EUR vs. GBP	0.86
GBP vs. USD	1.28
USD vs. CNY	7.35

Equity indices	
United States (S&P 500)	5,300
Germany (DAX)	18,700
Eurozone (EURO STOXX 50)	5,000
Europe (STOXX Europe 600)	515
Japan (MSCI Japan)	1,740
Switzerland (SMI)	11,450
United Kingdom (FTSE 100)	7,600
Emerging Markets (MSCI EM)	1,050
Asia ex. Japan (MSCI Asia ex. Japan)	675
Australia (MSCI Australia)	1,500

Commodities (USD)	
Gold (oz)	2,400
Crude Oil (Brent Spot, bbl)	84
Copper (t)	9,600
EU Carbon Allowances (Carbon Spot, t)	80

Corporate & EM bond spreads (bps)	
EUR IG Corp	95
EUR HY	400
USD IG Corp	85
USD HY	400
Asia Credit	210
EM Sovereign	390
EM Credit	325

Source: Deutsche Bank AG;
Forecasts as of March 14, 2024.

Appendix 3

Historical performance

Performance	14.03.2019–14.03.2020	14.03.2020–14.03.2021	14.03.2021–14.03.2022	14.03.2022–14.03.2023	14.03.2023–14.03.2024
S&P 500	-3.5%	45.5%	5.8%	-6.1%	31.4%
STOXX Europe 600	-21.0%	41.4%	3.1%	3.0%	12.6%
MSCI EM	-15.0%	51.3%	-21.7%	-10.4%	11.0%
EURO STOXX 50	-19.8%	52.2%	0.1%	15.4%	23.5%
SMI	-11.8%	29.5%	7.7%	-8.2%	9.4%
DAX	-20.3%	57.1%	-4.0%	9.4%	17.8%
FTSE 100	-25.3%	26.0%	6.4%	6.2%	1.4%
MSCI Japan	-18.9%	54.4%	-7.0%	6.9%	38.6%
MSCI Australia	-9.9%	19.4%	5.4%	-0.4%	11.3%
MSCI Asia ex. Japan	-10.8%	52.2%	-24.2%	-8.7%	8.0%
2-Year U.S. Treasury	5.1%	0.8%	-2.4%	-1.3%	2.7%
10-Year U.S. Treasury	17.3%	-4.6%	-2.8%	-9.8%	-0.7%
30-Year U.S. Treasury	38.1%	-15.7%	-0.8%	-21.5%	-6.0%
2-Year German Bund	0.0%	-1.2%	-1.2%	-4.4%	1.9%
10-Year German Bund	5.9%	-2.2%	-5.0%	-10.9%	-3.1%
30-Year German Bund	31.5%	-13.5%	-7.7%	-39.8%	-2.5%
10-Year UK Government	9.2%	-3.6%	-5.4%	-13.1%	-0.1%
2-Year Japan Government	-0.1%	-0.2%	-0.3%	0.0%	-0.2%
10-Year Japan Government	-0.2%	-0.8%	-0.3%	3.4%	-4.0%
EUR vs. USD	-1.9%	7.8%	-8.1%	-2.2%	1.4%
USD vs. JPY	-3.7%	1.3%	8.2%	13.9%	10.3%
EUR vs. JPY	-5.5%	9.2%	-0.6%	11.4%	11.9%
EUR vs. CHF	-6.9%	5.1%	-7.4%	-4.5%	-1.9%
EUR vs. GBP	5.3%	-4.4%	-1.8%	4.7%	-3.2%
GBP vs. USD	-6.9%	12.7%	-6.4%	-6.6%	4.8%
USD vs. CNY	4.3%	-7.1%	-2.2%	8.0%	4.7%
Gold (oz)	17.5%	13.0%	13.9%	-2.6%	13.3%
Crude Oil (Brent Spot, bbl)	-49.7%	104.5%	54.4%	-27.5%	10.3%
Copper (t)	-15.1%	67.1%	8.7%	-11.0%	-0.3%

Source: Deutsche Bank AG; Data as of March 14, 2024.

Glossary

The Bank of England (BoE) is the central bank of Great Britain.

The Bank of Japan (BoJ) is the central bank of Japan.

Brent is a grade of crude oil used as a benchmark in oil pricing.

Bunds are federal bonds, i.e. German government bonds.

CHF is the currency code for the Swiss Franc.

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.

CNY is the currency code for the Chinese yuan.

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.

A developed market (DM) is a country that is advanced economically, with developed capital markets and high levels of per capita income.

The ECB's pandemic emergency purchase programme (PEPP) is a temporary asset purchase programme.

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.

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 EURO STOXX 50 tracks the performance of blue-chip stocks in the Eurozone and includes the super-sector leaders in terms of market capitalization.

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

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

The FTSE 100 tracks the performance of the 100 major companies trading on the London Stock Exchange.

GBP is the currency code for the British pound sterling.

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.

High yield (HY) bonds are higher-yielding bonds with a lower credit rating than investment-grade corporate bonds, Treasury bonds and municipal 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 Australia tracks the performance of large- and mid-cap stocks in Australia.

The MSCI Asia ex Japan captures large- and mid-cap representation in the following developed and emerging market countries: Hong Kong, Singapore, China, India, Indonesia, Korea, Malaysia, the Philippines, Taiwan and Thailand.

The MSCI EM captures large and mid cap representation across 23 emerging market countries.

The MSCI Japan measures the performance of around 323 large and mid-cap stocks drawn accounting for about 85% of Japanese market capitalization.

Glossary

A negative interest-rate policy (NIRP) is an unconventional monetary policy tool where the central bank sets its target nominal interest rate at less than zero percent.

The Organization of the Petroleum Exporting Countries (OPEC) is an international organization with the mandate to "coordinate and unify the petroleum policies" of its 12 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.

REPowerEU is a European Commission proposal to end reliance on Russian fossil fuels before 2030 in response to the 2022 Russian invasion of Ukraine.

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

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

The STOXX Europe 600 includes 600 companies across 18 European Union countries.

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

TOPIX refers to the Tokyo Stock Price Index.

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

U.S. is the United States.

USD is the currency code for the U.S. Dollar.

Volatility is the degree of variation of a trading-price series over time.

The yield curve shows the different rates for bonds of differing maturities but the same credit quality.

Important note

General

This document may not be distributed in Canada or Japan. This document is intended for retail or professional clients only. This document is being circulated in good faith by Deutsche Bank Aktiengesellschaft, its branches (as permitted in any relevant jurisdiction), affiliated companies and its officers and employees (collectively, "Deutsche Bank").

This material is for your information only and is not intended as an offer, or recommendation or solicitation of an offer to buy or sell any investment, security, financial instrument or other specific product, to conclude a transaction, or to provide any investment service or investment advice, or to provide any research, investment research or investment recommendation, in any jurisdiction, but is intended solely for information purposes. The information does not replace advice tailored to the individual circumstances of the investor.

All materials in this communication are meant to be reviewed in their entirety.

If a court of competent jurisdiction deems any provision of this disclaimer unenforceable, the remaining provisions will remain in full force and effect. This document has been prepared as a general market commentary without consideration of the investment needs, objectives or financial circumstances of any particular investor. Investments are subject to market risks which derive from the instrument or are specific to the instrument or attached to the particular issuer. Should such risks materialise, investors may incur losses, including (without limitation) a total loss of the invested capital. The value of investments can fall as well as rise and you may not recover the amount originally invested at any point in time. This document does not identify all the risks (direct or indirect) or other considerations which may be material to an investor when making an investment decision.

This document and all information included herein are provided "as is", "as available" and no representation or warranty of any kind, express, implied or statutory, is made by Deutsche Bank regarding any statement or information contained herein or in conjunction with this document. To the extent permissible under applicable laws and regulations, we are making no representation as to the profitability of any financial instrument or economic measure. All opinions, market prices, estimates, forward looking statements, hypothetical statements, forecast returns or other opinions leading to financial conclusions contained herein reflect Deutsche Bank's subjective judgment as of the date of this document. Without limitation, Deutsche Bank does not warrant the accuracy, adequacy, completeness, reliability, timeliness or availability of this communication or any information in this document and expressly disclaims liability for errors or omissions herein. Forward looking statements involve significant elements of subjective judgments and analyses and changes thereto and/or consideration of different or additional factors could have a material impact on the results indicated. Therefore, actual results may vary, perhaps materially, from the results contained herein.

Unless otherwise indicated in this document, all statements of opinion reflect the current assessment of Deutsche Bank, which may change at any time. Deutsche Bank does not assume any obligation to either update the information contained in this document or inform investors about available updated information. The information contained in this document is subject to change without notice and based on a number of assumptions, estimates, opinions and hypothetical models or analyses which – although, From the Bank's current point of view are based on adequate information – may not prove valid or turnout in the future to be accurate or correct and may be different from conclusions expressed by other departments within Deutsche Bank. Although the information contained in this document has been derived from sources that Deutsche Bank considers trustworthy and reliable, Deutsche Bank does not guarantee the completeness, fairness, or accuracy of the information and it should not be relied upon as such. This document may provide, for your convenience, references to websites and other external sources. Deutsche Bank takes no responsibility for their content and their content does not form any part of this document. Accessing such external sources is at your own risk.

To the extent permissible under applicable laws and regulations, this document is for discussion purposes only and is not intended to create any legally binding obligations on Deutsche Bank and Deutsche Bank is not acting as your financial advisor or in a fiduciary capacity unless otherwise expressly agreed by Deutsche Bank in writing. Before making an investment decision, investors need to consider, with or without the assistance of a financial professional, whether any investments and strategies described or provided by Deutsche Bank, are appropriate, in light of the investor's particular investment needs, objectives, financial circumstances, the possible risks and benefits of such investment decision. When making an investment decision, potential investors should not rely on this document but only on what is contained in the final offering documentation relating to the investment. As a global financial services provider, Deutsche Bank from time to time faces actual and potential conflicts of interest. Deutsche Bank's policy is to take all appropriate steps to maintain and operate effective organisational and administrative arrangements to identify and manage such conflicts. Senior management within Deutsche Bank are responsible for ensuring that Deutsche Bank's systems, controls and procedures are adequate to identify and manage conflicts of interest. Deutsche Bank does not give tax or legal advice, including in this document, and nothing in this document should be interpreted as Deutsche Bank providing any person with any investment advice. Investors should seek advice from

Important note

their own tax experts, lawyers, and investment advisers in considering investments and strategies described by Deutsche Bank. Unless notified to the contrary in a particular case, investment instruments are not insured by any governmental entity, not subject to deposit protection schemes and not guaranteed, including by Deutsche Bank. This document may not be reproduced or circulated without Deutsche Bank's express written authorisation. Deutsche Bank expressly prohibits the distribution and transfer of this material to third parties. Deutsche Bank accepts no liability whatsoever arising from the use or distribution of this material or for any action taken or decision made in respect of investments mentioned in this document which the investor may have made or may make in the future.

The manner of circulation and distribution of this document may be restricted by law or regulation in certain countries, including, without limitation, the United States. This document is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country, or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or which would subject Deutsche Bank to any registration or licensing requirement within such jurisdiction not currently met. Persons into whose possession this document may come are required to inform themselves of, and to observe, such restrictions. Past performance is no guarantee of future results; nothing contained herein shall constitute any representation, warranty, or prediction as to future performance. Further information is available upon investor's request.

Deutsche Bank AG is a stock corporation ("Aktiengesellschaft") incorporated under the laws of the Federal Republic of Germany with its head office in Frankfurt am Main. It is registered with the district court ("Amtsgericht") in Frankfurt am Main under number HRB 30 000and licensed to carry out banking business and to provide financial services. Supervisory authorities are the European Central Bank ("ECB"), Sonnemannstrasse 22, 60314 Frankfurt am Main, Germany (www.ecb.europa.eu) and the German Federal Financial Supervisory Authority ("Bundesanstalt für Finanzdienstleistungsaufsicht" or "BaFin"), Graurheindorfer Strasse 108, 53117 Bonn and Marie-Curie-Strasse 24-28, 60439 Frankfurt am Main(www.bafin.de), and by the German Central Bank ("Deutsche Bundesbank"), Wilhelm-Epstein-Strasse 14, 60431 Frankfurt am Main (www.bundesbank.de).

This document has neither been submitted to nor reviewed or approved by any of the above or below mentioned supervisory authorities.

For Residents of the United Arab Emirates

This document is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. By receiving this document, the person or entity to whom it has been issued understands, acknowledges and agrees that this document has not been approved by the UAE Central Bank, the UAE Securities and Commodities Authority, the UAE Ministry of Economy or any other authorities in the UAE. No marketing of any financial products or services has been or will be made from within the United Arab Emirates and no subscription to any funds, securities, products or financial services may or will be consummated within the United Arab Emirates. This does not constitute a public offer of securities in the United Arab Emirates in accordance with the Commercial Companies Law, Federal Law No. 2 of 2015 (as amended from time to time) or otherwise. This document may only be distributed to "Professional Investors", as defined in the UAE Securities and Commodities Authority's Rulebook on Financial Activities and Reconciliation Mechanism (as amended from time to time).

For Residents of Kuwait

This document has been sent to you at your own request. This presentation is not for general circulation to the public in Kuwait. The Interests have not been licensed for offering in Kuwait by the Kuwait Capital Markets Authority or any other relevant Kuwaiti government agency. The offering of the Interests in Kuwait on the basis a private placement or public offering is, therefore, restricted in accordance with Decree Law No. 31 of 1990 and the implementing regulations thereto (as amended) and Law No. 7 of 2010 and the bylaws thereto (as amended). No private or public offering of the Interests is being made in Kuwait, and no agreement relating to the sale of the Interests will be concluded in Kuwait. No marketing or solicitation or inducement activities are being used to offer or market the Interests in Kuwait.

For Residents of the Kingdom of Saudi Arabia

This document may not be distributed in the Kingdom except to such persons as are permitted under the Investment Fund Regulations issued by the Capital Market Authority. The Capital Market Authority does not take any responsibility for the contents of this document, does not make any representation as to its accuracy or completeness, and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of this document. Prospective subscribers of the securities should conduct their own due diligence on the accuracy of any information relating to securities. If you do not understand the contents of this document, you should consult an authorised financial adviser.

Important note

For Residents of Qatar
This document has not been filed with, reviewed or approved by the Qatar Central Bank, the Qatar Financial Markets Authority, the Qatar Financial Centre Regulatory Authority or any other relevant Qatari governmental body or securities exchange or under any laws of the State of Qatar. This document does not constitute a public offering and is addressed only to the party to whom it has been delivered. No transaction will be concluded in Qatar and any inquiries or applications should be received, and allotments made, outside Qatar.

For Residents of the Kingdom of Bahrain
This document does not constitute an offer for sale of, or participation in, securities, derivatives or funds marketed in Bahrain within the meaning of Bahrain Monetary Agency Regulations. All applications for investment should be received and any allotments should be made, in each case from outside of Bahrain. This document has been prepared for private information purposes of intended investors only who will be institutions. No invitation shall be made to the public in the Kingdom of Bahrain and this document will not be issued, passed to, or made available to the public generally. The Central Bank (CBB) has not reviewed, nor has it approved, this document or the marketing of such securities, derivatives or funds in the Kingdom of Bahrain.

For Residents of South Africa
This document does not constitute or form a part of any offer, solicitation or promotion in South Africa. This document has not been filed with, reviewed or approved by the South African Reserve Bank, the Financial Sector Conduct Authority or any other relevant South African governmental body or securities exchange or under any laws of the Republic of South Africa.

For Residents of Belgium
This document has been distributed in Belgium by Deutsche Bank AG acting though its Brussels Branch. Deutsche Bank AG is a stock corporation (“Aktiengesellschaft”) incorporated under the laws of the Federal Republic of Germany and licensed to carry on banking business and to provide financial services subject to the supervision and control of the European Central Bank (“ECB”) and the German Federal Financial Supervisory Authority (“BaFin”). Deutsche Bank AG, Brussels Branch, is also supervised in Belgium by the Financial Services and Markets Authority (“FSMA”, www.fsma.be). The branch has its registered address at Marnixlaan 13-15, B-1000 Brussels and is registered under number VAT BE 0418.371.094, RPM/RPR Brussels. Further details are available on request or can be found at www.deutschebank.be.

For Residents of the United Kingdom
This document is a financial promotion as defined in Section 21 of the Financial Services and Markets Act 2000 and is approved by and communicated to you by DB UK Bank Limited. DB UK Bank Limited is a member of the Deutsche Bank group and is registered.at Company House in England & Wales with company number 315841 with its registered Office: 21 Moorfields, London, United Kingdom, EC2Y 9DB. DB UK Bank Limited is authorised by the Prudential Regulation Authority and is regulated by the Financial Conduct Authority and the Prudential Regulation Authority. DB UK Bank Limited’s Financial Services Registration Number is 140848.

Deutsche Bank Aktiengesellschaft is incorporated in the Federal Republic of Germany and its members’ liability is limited.

For Residents of Hong Kong
This material is intended for: Professional Investors in Hong Kong. Furthermore, this material is provided to addressee only, further distribution of this material is strictly prohibited. This document and its contents are provided for information only. Nothing in this document is intended to be an offer of any investment or a solicitation or recommendation to buy or to sell an investment and should not be interpreted or construed as an offer, solicitation, or recommendation.

The contents of this document have not been reviewed by any regulatory authority in Hong Kong. You are advised to exercise caution in relation to the investments contained herein (if any). If you are in any doubt about any of the contents of this document, you should obtain independent professional advice.

This document has not been approved by the Securities and Futures Commission in Hong Kong (“SFC”), nor has a copy of this document been registered by the Registrar of Companies in Hong Kong, unless specified otherwise. The investments contained herein may or may not be authorised by the SFC. The investments may not be offered or sold in Hong Kong, by means of any document, other than (i) to “professional investors” as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) (“SFO”) and any rules made under the SFO, or (ii) in other circumstances which do not result in the document being a “prospectus” as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong)(the “C(WUMP)O”) or which do not constitute an offer to the public within the meaning of the C(WUMP)O. No person shall issue or possess for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or document relating to the

Important note

investments, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to investments which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under the SFO.

For Residents of Singapore

This material is intended for: Accredited Investors / Institutional Investors in Singapore. Furthermore, this material is provided to addressee only, further distribution of this material is strictly prohibited.

For Residents of the United States of America

In the United States, brokerage services are offered through Deutsche Bank Securities Inc., a broker-dealer and registered investment adviser, which conducts securities activities in the United States. Deutsche Bank Securities Inc. is a member of FINRA, NYSE and SIPC. Banking and lending services are offered through Deutsche Bank Trust Company Americas, member FDIC, and other members of the Deutsche Bank Group. In respect of the United States, see earlier statements made in this document. Deutsche Bank makes no representations or warranties that the information contained herein is appropriate or available for use in countries outside of the United States, or that services discussed in this document are available or appropriate for sale or use in all jurisdictions, or by all counterparties. Unless registered, licensed as otherwise may be permissible in accordance with applicable law, none of Deutsche Bank or its affiliates is offering any services in the United States or that are designed to attract US persons (as such term is defined under Regulation S of the United States Securities Act of 1933, as amended).This United States-specific disclaimer will be governed by and construed in accordance with the laws of the State of Delaware, without regard to any conflicts of law provisions that would mandate the application of the law of another jurisdiction.

For Residents of Germany

This information is advertising. The texts do not meet all legal requirements to ensure the impartiality of investment and investment strategy recommendations or financial analyses. There is no prohibition for the compiler or for the company responsible for the compilation to trade with the respective financial instruments before or after the publication of these documents.

General information on financial instruments is contained in the brochures "Basic Information on Securities and Other Investments", "Basic Information on Financial Derivatives", "Basic Information on Forward Transactions" and the information sheet "Risks in Forward Transactions", which the customer can request from the Bank free of charge. Past performance or simulated performance is not a reliable indicator of future performance.

For Residents of India

The investments mentioned in this document are not being offered to the Indian public for sale or subscription. This document is not registered and/or approved by the Securities and Exchange Board of India, the Reserve Bank of India, or any other governmental/ regulatory authority in India. This document is not and should not be deemed to be a "prospectus" as defined under the provisions of the Companies Act, 2013 (18 of 2013) and the same shall not be filed with any regulatory authority in India. Pursuant to the Foreign Exchange Management Act, 1999 and the regulations issued there under, any investor resident in India may be required to obtain prior special permission of the Reserve Bank of India before making investments outside of India including any investments mentioned in this document.

For Residents of Italy

This report is distributed in Italy by Deutsche Bank S.p.A., a bank incorporated and registered under Italian law subject to the supervision and control of Banca d'Italia and CONSOB. Its registered office is located at Piazza del Calendario 3 – 20126 Milan (Italy) and is registered with the Chamber of Commerce of Milan, VAT and fiscal code number 001340740156, part of the interbank fund of deposits protection, enrolled in the Bank Register and the head of Deutsche Bank Banking Group, enrolled in the register of the Banking Groups pursuant to Legislative Decree September 1st , 1993 n. 385 and subject to the direction and coordination activity of Deutsche Bank AG, Frankfurt am Main (Germany).

For Residents of Luxembourg

This report is distributed in Luxembourg by Deutsche Bank Luxembourg S.A., a bank incorporated under the laws of the Grand Duchy of Luxembourg in the form of a public limited company (Société Anonyme), subject to the supervision and control of the European Central Bank ("ECB") and Commission de Surveillance du Secteur Financier ("CSSF"). Its registered office is located at 2, Boulevard Konrad Adenauer, 1115 Luxembourg, Grand Duchy of Luxembourg and is registered with Luxembourg Registre de Commerce et des Sociétés ("RCS") under number B 9.164 .

Important note

For Residents of Spain
Deutsche Bank, Sociedad Anónima Española Unipersonal is a credit institution regulated by the Bank of Spain and the CNMV and registered in their respective Official Registries under the Code 019. Deutsche Bank, Sociedad Anónima Española Unipersonal may only undertake the financial services and banking activities that fall within the scope of its existing license. The principal place of business in Spain is located in Paseo de la Castellana number 18, 28046 - Madrid. Registered in the Mercantile Registry of Madrid, Volume 28100, Book 0, Folio 1, Section 8, Sheet M506294, Registration 2. NIF: A08000614. This information has been distributed by Deutsche Bank, Sociedad Anónima Española Unipersonal.

For Residents of Portugal
Deutsche Bank AG, Portugal Branch is a credit institution regulated by the Bank of Portugal and the Portuguese Securities Commission ("CMVM"), registered with numbers 43 and 349, respectively and with commercial registry number 980459079. Deutsche Bank AG, Portugal Branch may only undertake the financial services and banking activities that fall within the scope of its existing license. The registered address is Rua Castilho, 20, 1250-069 Lisbon, Portugal.

For Residents of Austria
This document is distributed by Deutsche Bank AG Vienna Branch, registered in the commercial register of the Vienna Commercial Court under number FN 140266z.Deutsche Bank AG's Vienna branch is also supervised by the Austrian Financial Market Authority (FMA), Otto-Wagner-Platz 5, 1090 Vienna. This document has neither been submitted to nor approved by the aforementioned supervisory authorities.

For Residents of the Netherlands
This document is distributed by Deutsche Bank AG, Amsterdam Branch, with registered address at De entree 195 (1101 HE) in Amsterdam, the Netherlands, and registered in the Netherlands trade register under number 33304583 and in the register within the meaning of Section 1:107 of the Netherlands Financial Supervision Act (Wet op het financieel toezicht). This register can be consulted through www.dnb.nl.

For Residents of France
Deutsche Bank AG is an authorised credit institution, subject to the overall supervision of the European Central Bank and BaFin, the German Federal Financial Supervisory Authority. Its various branches are locally supervised, for certain activities, by the competent banking authorities, such as the Prudential Control and Resolution Authority (Autorité de Controle Prudentiel de Résolution, "ACPR") and the Financial Markets Authority (Autorité des Marchés Financiers, " AMF") in France.

Publication date: March 18, 2024

Image credits: katatonia (Adobe Stock)

054526 031824