



December 2022

CIO Insights



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Economic and investment outlook



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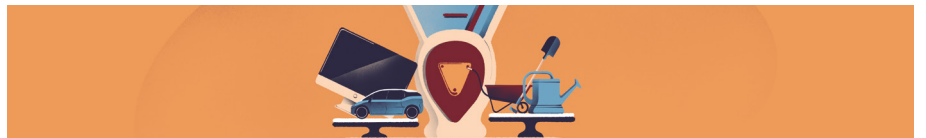
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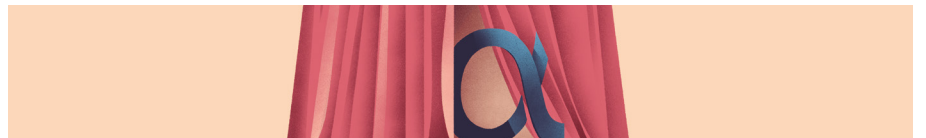
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Letter to Investors



Christian Nolting
Global CIO

Resilience versus recession

Policymakers, at least in the U.S. and Europe, now appear resigned to weaker economic growth in 2023. Any recessions are likely to be short-lived, but they will not be painless. The combination of lower growth, lingering inflation and public spending constraints will be difficult for both people and governments. Social inequality will be a topic of immediate and growing importance.

Slower economic growth in 2023 will not necessarily translate into weaker financial markets, however. In fact, markets could prove more resilient in the coming year than they have been in 2022.

Market volatility in 2022 has been exacerbated by external events and changing expectations around the likely size and speed of monetary policy tightening, in the face of high and persistent inflation. Central banks have struggled to give consistent forward guidance. Confusion in markets has driven sharp swings in bond yields, also destabilising equity markets.

Central banks and investors are likely to find 2023 rather easier. We forecast that inflation will ease down (but stay well above central bank target levels). We hope that major global setbacks (from geopolitics, disease or other factors) can be avoided. As a result, although more central bank rate hikes are in prospect, increases in longer-term government bond yields should be relatively modest from here on. The worst should now be over. For bond investors, yield and quality will no longer be a contradiction.

More stable bond markets should, in turn, help lower equity market volatility. 2023 is likely to be an acceptable year for equities, but not a great one. Positive returns will be driven by some modest price/earnings expansion and dividends – but earnings per share will be stagnant. In this calmer environment, relative regional valuations may become more important.

2023 could also see a more stable USD with the Fed's likely future hiking programme probably now sufficiently priced in. In fact, the EUR could strengthen slightly over the course of the year, given our expectation that inflation will come down more slowly in the Eurozone than in the U.S.

Of course, next year will not just be about inflation and monetary policy tightening. China, for example, will be following a rather different policy path. We think that continued domestic stimulus will eventually succeed in turning its economy around. Chinese recovery, combined with regional reopening, means that Asia could have a good 2023.

An overarching concern, with major investment implications, will be the environment. Limiting global temperature rises to 1.5 Celsius will involve major structural changes to the way we live. Investors should anticipate these changes and can, via ESG investment, help facilitate some of them. We highlight two of our long-term investment themes in this annual outlook: the energy transition (to greener sources of power) and infrastructure. These, and our other seven long-term investment themes (also discussed), are likely to provide major investment opportunities in the years ahead.

Portfolio management in 2023 needs to plan for this. All investors should consider the following three factors.

First, **easing but continued inflation**. Consider possible partial hedges against this in terms of asset classes (e.g. equities) or themes and sectors (e.g. some infrastructure).

Second, **generally modest but positive return expectations**. We forecast mid-single digit equity returns, for example. Investors seeking higher returns may want to look to alternative investments in private markets.

Third, **risk**. Despite our expectations of more stable financial markets in 2023, the world remains intrinsically risky. Prior thinking about potential financial implications can help protect portfolios.

I wish you a successful investing year. We are always here to assist.



Christian Nolting
Global CIO



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Macroeconomic and asset class outlook for 2023

01



Growth: stop and go

Weak economic momentum is expected to continue into early 2023. Both Europe and the U.S. are caught between a restrictive monetary policy that curbs both inflation and the economy and an expansive fiscal policy aimed at bolstering the economy and cushioning the effects of the current energy crisis, among other things. For the Eurozone, this means that the ECB's deposit rate is expected to increase to 3% during the course of the year, whereas Germany, for example, has planned fiscal measures equivalent to around 7.5% of its gross domestic product. We are expecting a mild recession overall in the Eurozone at the turn of the year. With recovery starting in the second quarter, economic growth for the full year 2023 is likely to be 0.3%. The main risk factor remains energy, coupled with a possible shortage of gas in winter 2023/2024.

Figure 1: GDP growth forecasts

Source: Deutsche Bank AG. Forecasts as of November 17, 2022.

%YoY	2022	2023
U.S.*	1.8	0.4
Eurozone	3.2	0.3
Germany	1.8	0.0
France	2.5	0.3
Italy	3.5	-0.1
Spain	4.6	0.8
Japan	1.6	1.2
China	3.3	5.0
World	3.2	2.8

Note: *For the U.S., GDP growth Q4/Q4 % is 0.5% in 2022 and 1.6% in 2023.

A soft landing is possible in the U.S. as well, with a marked economic slowdown so far not resulting in any significant increase in unemployment (and a still large number of unfilled vacancies). Growing evidence of a slightly downward trend in inflation in the U.S. could see the Fed refocusing increasingly on economic growth, with further increases in the base rate likely to be smaller than in the recent past.

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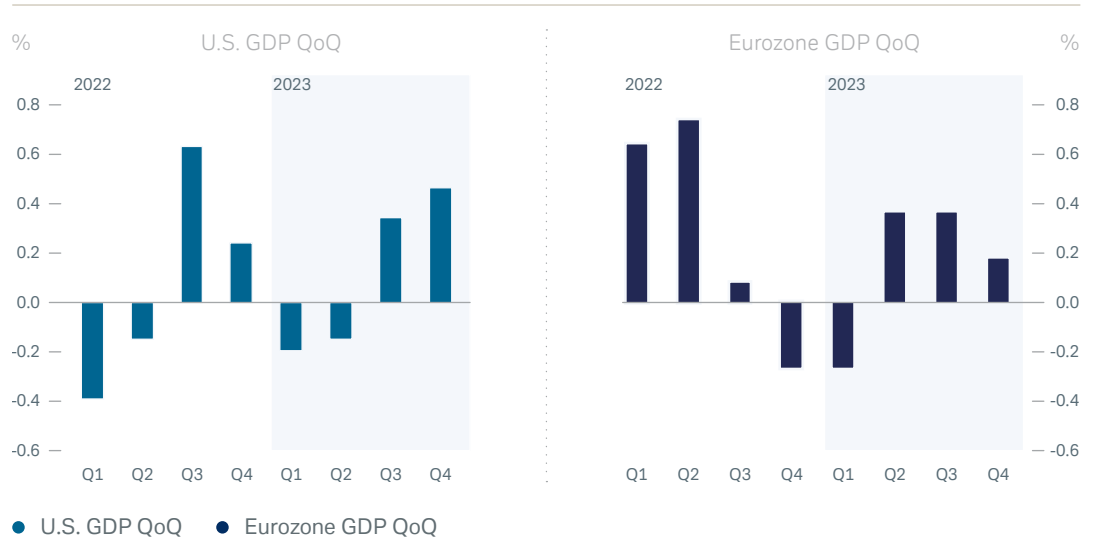
If inflation rates continue to decline and there is no need for robust Fed intervention, the U.S. economy could return to growth in the second half of 2023, finishing the year overall at +0.4%.

Economic momentum in China is likely to be much stronger next year. We are expecting growth of around 5% in 2023 after an estimated 3.3% this year.

Long-term economic growth potential depends on the production factors of labour, capital and technological innovation. The importance of technology has been underlined by the global shortage of skilled labour and the need to make more efficient use of resources. Productivity growth has declined considerably in recent decades, especially in developed markets, with a correspondingly negative impact on potential growth.

Figure 2: Quarterly growth profiles for the U.S. and Eurozone

Source: Deutsche Bank AG. Data as of November 11, 2022.



In the long term, increased productivity will be needed to ensure stronger economic growth. Innovative technologies are the key to this – and are thus the guarantors of the future “wealth of nations”.

Economies are already taking action to counter this. In developed markets, there is a clear focus on increasing productivity in the service sector, which employs up to 80% of the workforce. Key technologies include cloud services, artificial intelligence and digitalisation in general. Increasing automation in the industrial sector also can raise productivity, especially in the emerging economies. Technological productivity will be boosted by economies of scale – by the growing market penetration of renewable energy and battery technologies, for example.

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Economic development beyond 2023 is therefore likely to depend on future success in commercialising new technologies and integrating them in the economic cycle. In the long term they are the key to further growth and continued prosperity.

Growth: stop and go

Market and portfolio implications:

- Mild U.S. and European recessions in the first half of 2023; growth then picks up
- China to register significantly more dynamic growth in the year ahead
- Innovative technologies to form the basis for stronger long-term economic growth



02

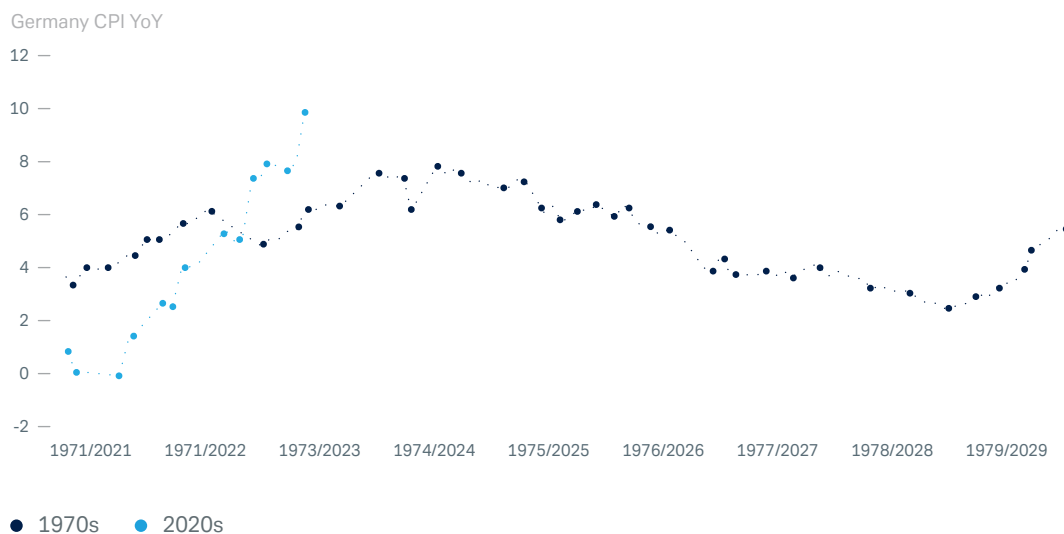


Inflation: lower and higher

Inflation has become a dominant topic again. We estimate consumer price inflation of 8.9% in Germany, 8.4% in the Eurozone and 8.2% in the U.S. for full year 2022. Inflation will still be well above the targets set by the central banks in Europe and the U.S. in 2023. While headline inflation seems to have already peaked in the U.S., it might not peak in Germany and the Eurozone until February or March 2023. For 2023 as a whole, we expect inflation of 7.0% for Germany, 6.0% for the Eurozone and 4.1% for the U.S. High inflation is expected to last beyond 2023. It is unlikely that inflation in the foreseeable future will return to the relatively low levels seen before the Covid-19 pandemic.

Figure 3: Inflation expectations: Markets (Comparison of current CPI with the 70s for Germany)

Source: Deutsche Bank AG. Data as of November 11, 2022.



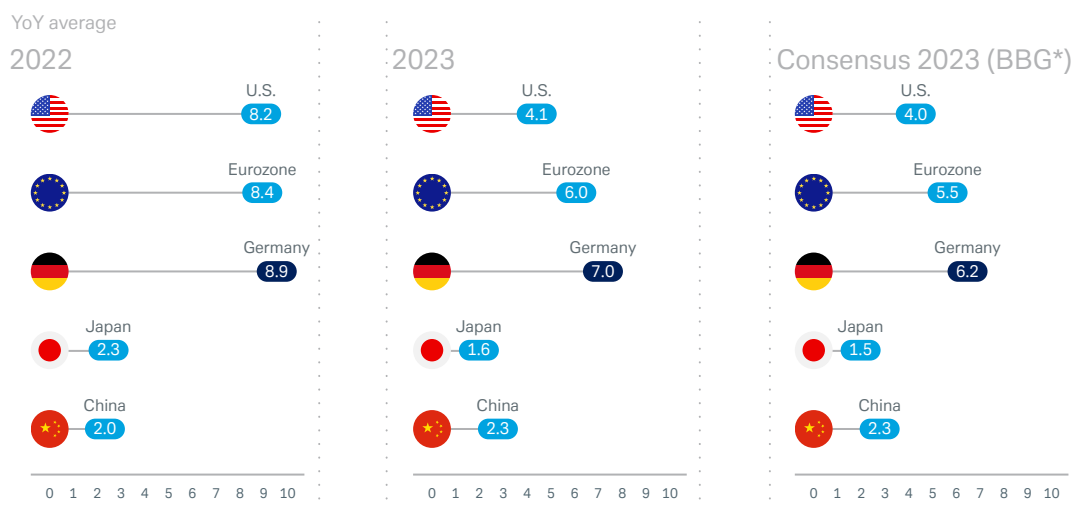
Energy could still be a big driver of inflation. The recent slight decrease in oil prices could be followed by another marked increase next year, caused by demand-side factors such as the expected acceleration of China's economy and supply-side factors such as the self-imposed production cuts by OPEC+ and inadequate oil company production capacity following insufficient investment in recent years. Efforts by the European Union and U.S. to exclude Russian oil from the market will add to pressures too. While gas prices have decreased recently, they remain well above what they were before the Russia-Ukraine war erupted. Current gas consumption as well as timely filling of storage facilities for winter 2023/2024 will be important.

Central banks are therefore increasingly looking at core inflation, which strips out volatile energy and food prices. Core inflation responds more strongly to changes in the base rate than headline inflation, which is more supply driven. The relatively late start to the ECB's current interest rate cycle may relate to this change of focus.

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Figure 4: Consumer price inflation (%)

Source: Deutsche Bank AG, Bloomberg Finance L.P.; Data as of November 17, 2022.



Note: *Bloomberg

Inflation in 2023 could also be higher than expected due to the impact of high energy costs on the prices of other goods and therefore on core inflation. In Germany, headline inflation will likely fall as a result of the gas price cap coming into effect at the beginning of the year, but core inflation will be stoked further by government stimulus.

Overall, the world’s main central banks are therefore likely to keep their monetary policy relatively tight initially. Current capital market pricing reflects this. But there remains a risk that inflation will go higher than expected, requiring central banks to intervene more strongly.

While inflation seems to have already peaked in the U.S., it might not peak in Germany and the Eurozone until February or March 2023.

Inflation: lower and higher

Market and portfolio implications:

- Current inflation expectations largely factored into market prices
- Uncertainty remains regarding further development of inflation
- Increase in long-term inflation target should be considered when building portfolios

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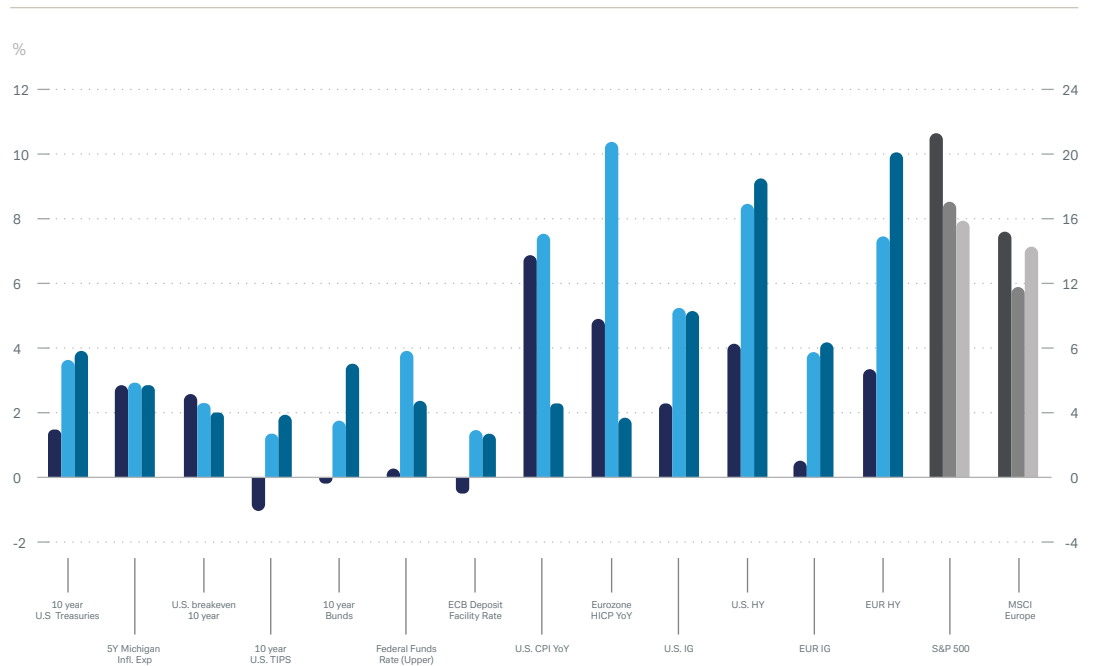
Bonds: approaching equilibrium

2022 was a turbulent year for the bond market. Sharply rising inflation and the increasingly tight monetary policy of many central banks resulted in substantial yield increases. 10-year U.S. bond yields, for example, went from 1.5% at the end of 2021 to around 4%. The yield on investment-grade European corporate bonds currently averages 4.3%, compared with just 0.5% at the end of 2021.

2022 may however prove to have been a year of transition to increased bond market stability. Following the great sell-off, 2023 could offer more interesting investment opportunities. The basis for any new equilibrium must be an expectation that inflation will not reach the persistent very high levels seen in the 1970s. It is more likely that inflation rates will be moderately high, like they were between 1998 and 2014. Average inflation forecasts currently stand at around 2.5% for the next five years in the U.S., for example. Overall, current bond yields are fairly close to levels that have historically been associated with a moderately high inflation environment.

Figure 5: Yields: current vs. end-2021 and recent averages*

Source: Deutsche Bank AG, Refinitiv Datastream. Data as of November 21, 2022.



Note: *Figures from 1998 to 2014 (except for EUR HY from 1999 to 2014)

- 31.12.2021 (Yields, lhs)
- 31.12.2021 (P/E, rhs)
- Current Yield (lhs)
- Current (P/E, rhs)
- Average Yield (98-14) (lhs)
- Average P/E (98-14) (rhs)

Bond market investors will however have little cause to relax. The value of bonds will continue to fluctuate widely, taking time to calm the ongoing hit from inflation and interest rate rises. Further, if less substantial interest rate increases are expected in the U.S. and, above all, in the Eurozone because central banks are likely to pursue their tight anti-inflationary policies, this will create headwinds in the bond market.

Due to the ongoing risks, investors will probably initially prefer liquid and investment-grade bonds from the U.S. and Europe in the months ahead, despite the return to attractive yields in most bond categories.

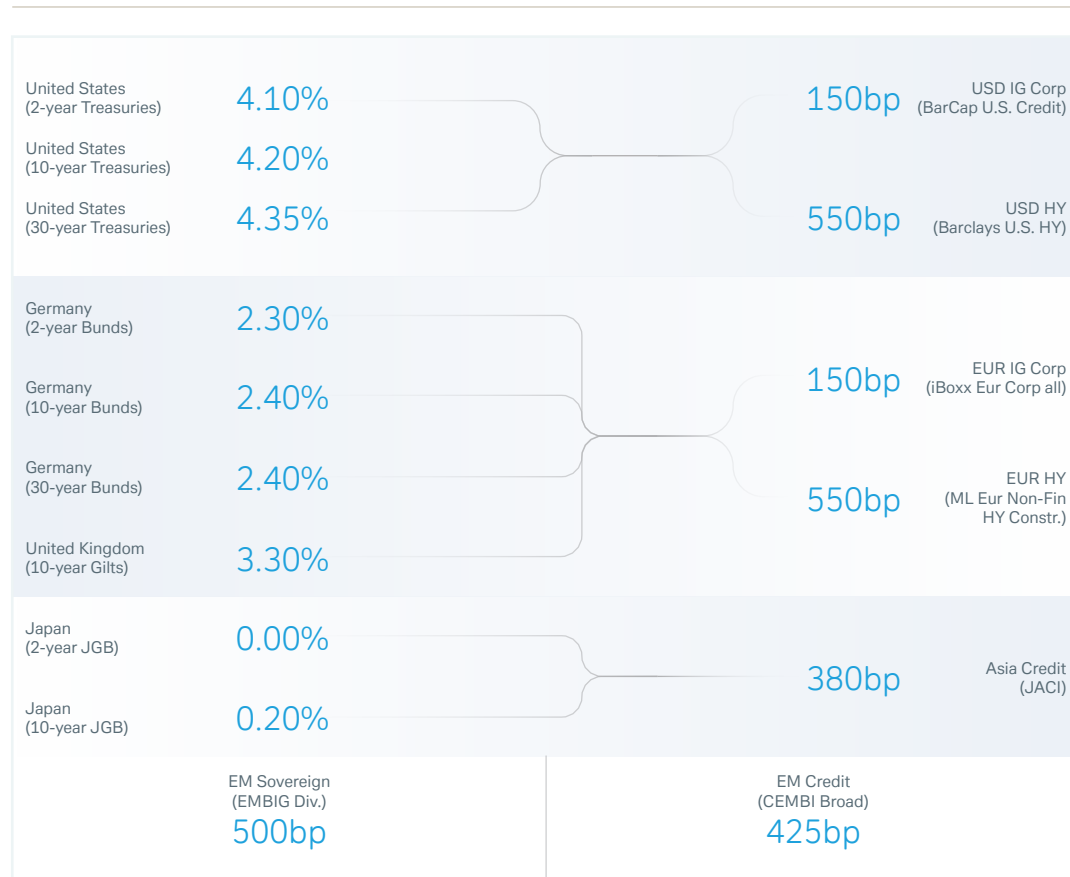
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Yields and quality are now no longer mutually exclusive. European bank bonds, for example, would seem to be worth greater consideration because underlying capital adequacy and credit risk data have improved substantially in recent years.

Following what is expected to be a still slightly bumpy winter economically, the focus in the course of 2023 could turn to riskier and higher-yielding corporate bonds. In the case of government bonds, anticipated interest rate developments mean that U.S. paper should initially prove more interesting than German equivalents.

Figure 6: Fixed income forecasts for end-December 2023

Source: Deutsche Bank AG. Forecasts as of November 17, 2022.



We have a rather neutral view overall of emerging economies' bond markets. The expected economic recovery of China in 2023 could stabilise the economies of neighbouring and many commodity exporting countries (such as those in Latin America) given that China is the dominant commodities consumer. Another positive could be the expected moderation in USD strength, as emerging economies' debt is often denominated in this currency.

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Active bond portfolio management remains the watchword in 2023, coupled with the dynamic management of maturities and default probabilities (i.e. ratings). Floaters – bonds with variable returns – might be useful here. Investors who are willing to take risks might also be interested in exploiting possible exchange rate differences.

2023 will give bond market investors no cause to relax. On the other hand, high quality bonds offer decent yields again which could compensate for the risk of further rate rises. The ongoing hit from inflation and interest rate rises has been too severe for the situation to calm down quickly, but valuations look more favourable now.

Bonds: approaching equilibrium

Market and portfolio implications:

- The situation may calm down slightly in 2023 but the risk of volatility remains
- Focus on liquid investments and good credit ratings
- Active portfolio management remains the watchword for investors



04



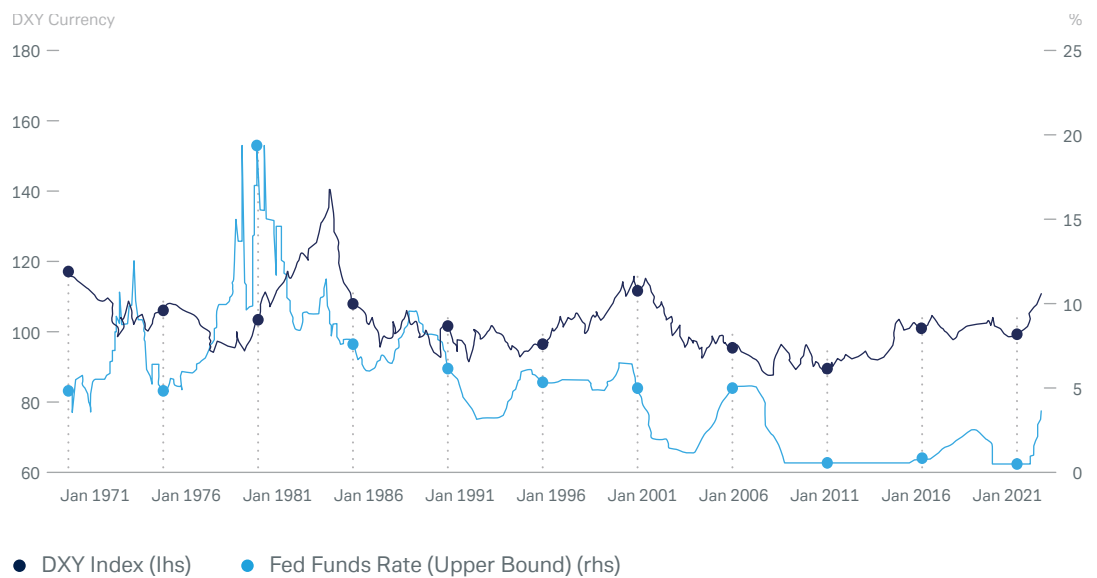
FX: King dollar – turnaround

More than 50 years ago, then-U.S. Treasury Secretary John Connally said, ‘The dollar is our currency, but it is your problem’. President Nixon had suspended the country’s commitment to the convertibility of the USD into gold, putting an end to the Bretton Woods system of fixed exchange rates.

Connally’s provocative observation remains just as valid today. In 2022, the EUR and other currencies suffered from the increasing economic and political uncertainty around the world and came under pressure. The greenback, meanwhile, was able to profit from strong inflows due to the higher returns available in the U.S. (as the Fed surged ahead with base rate hikes) and the currency’s role as the dominant ‘safe haven’.

Figure 7: Dollar & Fed hiking cycles (DXY index vs Fed funds rate upper bounds since 1970)

Source: Deutsche Bank AG. Data as of November 21, 2022.



The difference between returns in the U.S. and the Eurozone should diminish as the year 2023 progresses. The U.S. interest rate cycle will probably reach its peak in spring 2023 while the European Central Bank raises interest rates further. Growth in the Eurozone and in China in particular may pick up again following a weaker winter. For this reason, we expect the EUR/USD rate to be around 1.05 at year-end 2023.

With a less buoyant USD the Japanese yen may also be able to appreciate. The JPY in particular came under heavy pressure in 2022 as the Bank of Japan maintained an extremely loose monetary policy. The Japanese currency lost up to 10% of its value against the EUR and up to 22% against the USD in 2022.

The CHF which is also seen as a ‘safe haven’ currency, should remain one of the stronger currencies in 2023, especially as Switzerland can now also offer positive base rates combined with relatively low inflation of 3%. By contrast, the pound sterling could continue its downward path in 2023, as the post-Brexit United Kingdom faces up to a range of economic difficulties.

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Figure 8: FX forecasts for end-December 2023

Source: Deutsche Bank AG. Forecasts as of November 17, 2022.

EUR vs. USD	1.05
USD vs. JPY	140
EUR vs. JPY	147
EUR vs. CHF	1.00
EUR vs. GBP	0.90
GBP vs. USD	1.15
USD vs. CNY	7.35

Following the winter, growth in the Eurozone and in China in particular should pick up again. This could weaken the USD and lift the EUR.

Emerging markets boast the weakest as well as the strongest currencies. The latter include Brazil, Uruguay, Chile and Peru, countries that are profiting from high commodity prices. South America's central banks were also quick to start raising their base rates. The expected global economic recovery in the second half of 2023 should benefit most commodities. In this context, the currencies of other commodity-exporting countries such as Australia, Canada and Norway seem to have (catch-up) potential, too, following the pressure that the Australian dollar and the Norwegian krone experienced in 2022.

FX: King dollar – turnaround

Market and portfolio implications:

- USD may lose tailwind in 2023
- EUR/USD expected to be 1.05 at year end 2023
- The weaker USD could boost markets

05

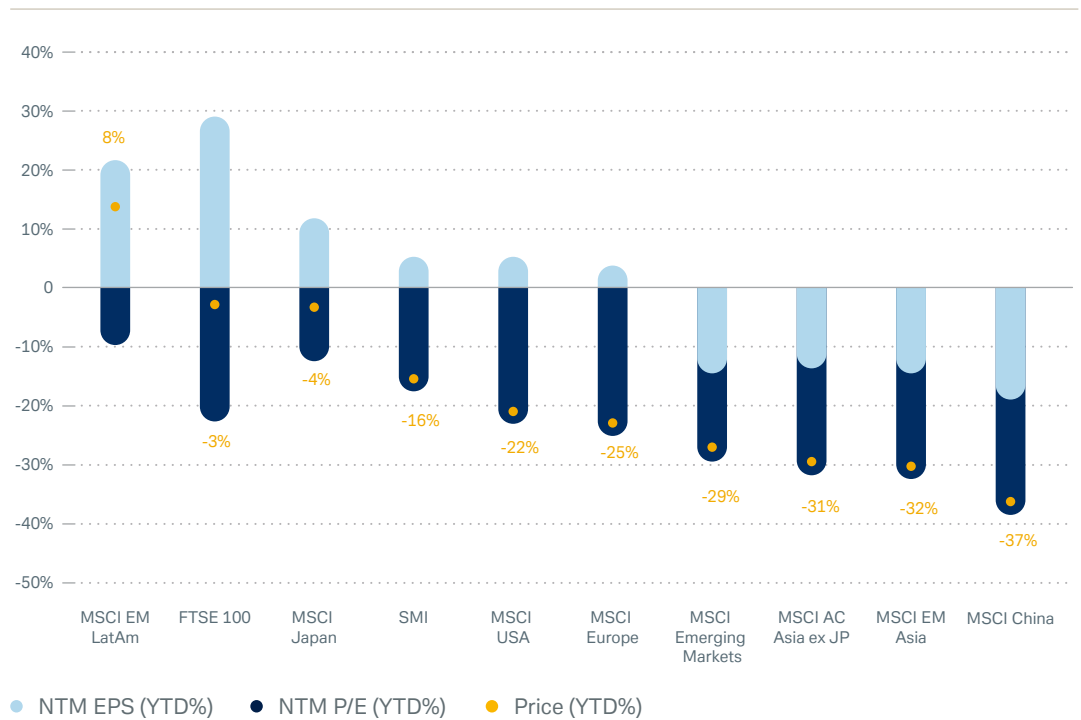


Stocks: from TINA to TAPAs?

2022 was a tough year for stock market investors. Despite the overall increase in corporate profits, stock prices came under pressure due to high geopolitical uncertainty, increasing inflation and a bond market sell-off. The latter pushed real yields back into positive territory ending the era of TINA (There Is No Alternative) in which investors increased their stock allocations at the expense of bonds, driving equity valuations to near-record highs. After the yield moves of 2022 TINA has left the stage, though, and the market setting has flipped to TAPA (There Are Plenty of Alternatives), which has resulted in lower equity valuations. At the index level, the declines varied across stock market regions. At times, NTM price-earnings (P/E) ratios fell below their long-term averages. The NTM P/E ratio of the MSCI World Index was 15x at the start of November 2022, a decline of -25% on the start of the year and 7% down on its 10-year average. Currently, equities therefore seem to be valued on the low side.

Figure 9: After market adjustment 2022: Reasonable valuations

Source: Refinitiv Datastream. Data as of November 21, 2022.



For the full year 2023, we believe that nominal company profits will match their prior-year levels and will not fall as they did in previous recessions. The basis for this assumption is the nominal growth of gross domestic product – the development of economic output without adjustment for inflation. For the full year, increases of 5% in the U.S. and as much as 6-7% in Europe are considered possible.

There are many reasons for our relatively robust forecasts for nominal economic and profit growth. Unlike in previous recessions, private consumption could be supported by high levels of savings built up during the coronavirus pandemic. High energy prices should continue to bolster the profits of energy companies in particular and also of companies in primary and mining industries. Financial companies should also benefit from the new (higher) interest rate environment. So while aggregate index margins have probably peaked, we do not believe that they will collapse.

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For the stock markets, this could mean that the revaluation following the recent large interest rate hikes have now more or less ended. A high valuation phase due to very low interest rates has been followed by a low valuation phase, and we are currently transitioning to a medium valuation phase for the years ahead. While this is no indication that 2023 will be a great year for stocks, we do expect solid price increases in the single-digit percentage range. Stocks therefore remain a particularly interesting asset class and essential components in a diversified portfolio. Nonetheless, we believe that short-term and even substantial price fluctuations could occur at any time during 2023 given investor caution, analysts' continued overestimation of profits in some cases and the many political and economic risk factors. Market participants may continue to react strongly, even to less significant news.

Although defensive sectors could continue to outperform over the medium term, valuations now look rich. Sectors that are more cyclical and value-oriented in nature appear attractive to us. Financials, materials (ex. chemicals) and energy stocks in particular are trading at depressed valuation levels on a historical comparison. Investors wanting to position themselves more defensively may want to consider healthcare stocks. The sector offers above-average earnings growth supported by strong secular trends at a reasonable price.

In regional terms, one investor focus in 2023 could be Europe. Recent valuation discounts in this region have been disproportionately high, with economic and geopolitical risks already factored in. Extensive fiscal programmes and high levels of savings should buoy private consumption, and expected stronger Chinese growth will be important to many European companies. The U.S. stock market will of course remain the focus, but its technology bias, and the resulting greater sensitivity to interest rate movements, may lead to greater investment risks, as could the expected weakening in the USD.

Figure 10: Equity index forecasts for end-December 2023

Source: Deutsche Bank AG, Forecasts as of November 18, 2022.

United States (S&P 500)	4,100
Germany (DAX)	15,000
Eurozone (Euro Stoxx 50)	4,000
Europe (Stoxx 600)	445
Japan (MSCI Japan)	1,250
Switzerland (SMI)	11,150
United Kingdom (FTSE 100)	7,600
Emerging Markets (MSCI EM)	990
Asia ex Japan (MSCI Asia ex Japan)	625
Australia (MSCI Australia)	1,450

Among the emerging economies, Asian markets remain the most attractive. Strong capital flows to "safe havens" caused marked declines in valuations in northern Asian markets, such as South Korea, Taiwan and China in 2022. The average drop in these markets was around 20%, a trend that has now been partly reversed. These markets may make a comeback when the macroeconomic environment and investor sentiment improve.

In recent months, the Indian stock market has performed well despite volatility. Corporate EPS is currently forecast to increase by around 17% in 2023 although the Indian market's 12-month P/E ratio of around 20 is comparatively high.

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However, given the country's continued strong economic momentum, it is difficult to see the Indian stock market as fundamentally overpriced.

Japan should benefit from its delayed and still-ongoing Covid-19 recovery as well as accommodative fiscal and monetary policy. Similar in some ways to Germany, the country's cyclical structure is highly dependent on China, which could provide a tailwind in 2023 and make Japanese equities a useful tool for diversification.

Stocks remain an essential component of a diversified portfolio. Decent overall price gains are expected in 2023, but with periods of perhaps substantial volatility.

Stocks: real assets at a reasonable price

Market and portfolio implications:

- High valuation discounts have made stocks seem comparatively inexpensive again
- But short-term risks remain and volatility could be high
- Investors could focus on European stock markets in coming months



06



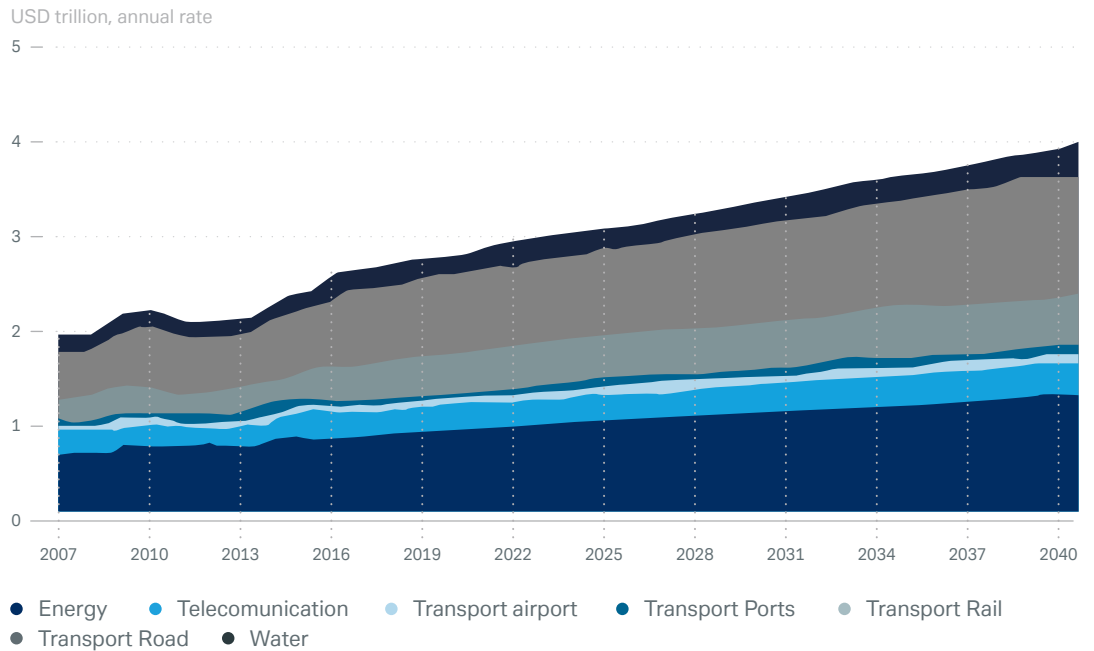
Infrastructure: the best is yet to come

Well-functioning infrastructure is essential to economic growth, ‘green’ growth and sustainable economic transformation. The development of resilient infrastructure is one of the 17 Sustainable Development Goals (SDGs) set by the United Nations. Significant investment in infrastructure will be required around the world over the coming years and decades.

Infrastructure ranges from traditional activities such as building and operating roads, bridges, railway networks, ports and airports, to developing and expanding stable energy grids and a safe drinking water supply as well as telecommunications and data networks. Businesses involved include the operators of the relevant infrastructure as well as infrastructure planners and builders.

Figure 11: Infrastructure investment needed for many sectors

Source: Deutsche Bank AG G20 Infrastructure Outlook. Forecasts as of April 2021.



Governments worldwide are seeking to drive the expansion of their infrastructure with considerable investment. The U.S. has initiated no fewer than three major investment programmes recently. A USD1.2tn infrastructure package was passed in 2021 aimed at modernising the country’s roads, bridges, ports, airports and railways; a CHIPS and Science Act followed in 2022, which provides for total investment of USD280bn – including USD52bn in chip manufacturing. In August 2022, U.S. President Joe Biden then signed the Inflation Reduction Act, which comprises a USD430bn package of climate, social and tax measures.

In Europe, the European Union launched its NextGenerationEU development fund back in 2020, now worth around EUR800bn taking inflation into account. This will be disbursed to individual member states partly in the form of loans and partly via direct grants for use primarily on climate protection and digital transformation.

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Governments worldwide are seeking to drive the expansion of their infrastructure with large amounts of investment. The market for listed infrastructure investments alone is currently worth approximately USD7tn.

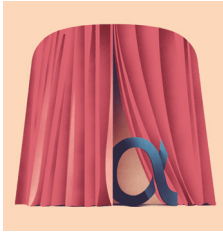
These funds have only just begun to be distributed in Europe as well as in the U.S. Accordingly, the best things in infrastructure are probably still yet to come – from our planet’s perspective as well as the investor perspective. The market for listed infrastructure investments alone is worth approximately USD7tn according to current estimates. What is appealing for investors is, among other things, that the earnings from major traditional infrastructure operations may offer a level of protection against inflation. By contrast, innovative newer ‘green’ infrastructure projects aimed at decarbonisation and digital transformation are often smaller in scale but offer the prospect of capital growth. Note however that infrastructure projects can be subject to external influences in a strong and direct way. For example, the Covid-19 pandemic resulted in a massive drop in aviation in 2020 and, consequently, in income for airports and investors.

Infrastructure: the best is yet to come

Market and portfolio implications:

- The U.S. and Europe have announced enormous infrastructure investment plans
- Infrastructure comprises a large number of different asset classes
- Infrastructure investments can offer the possibility of regular earnings or capital gains

07

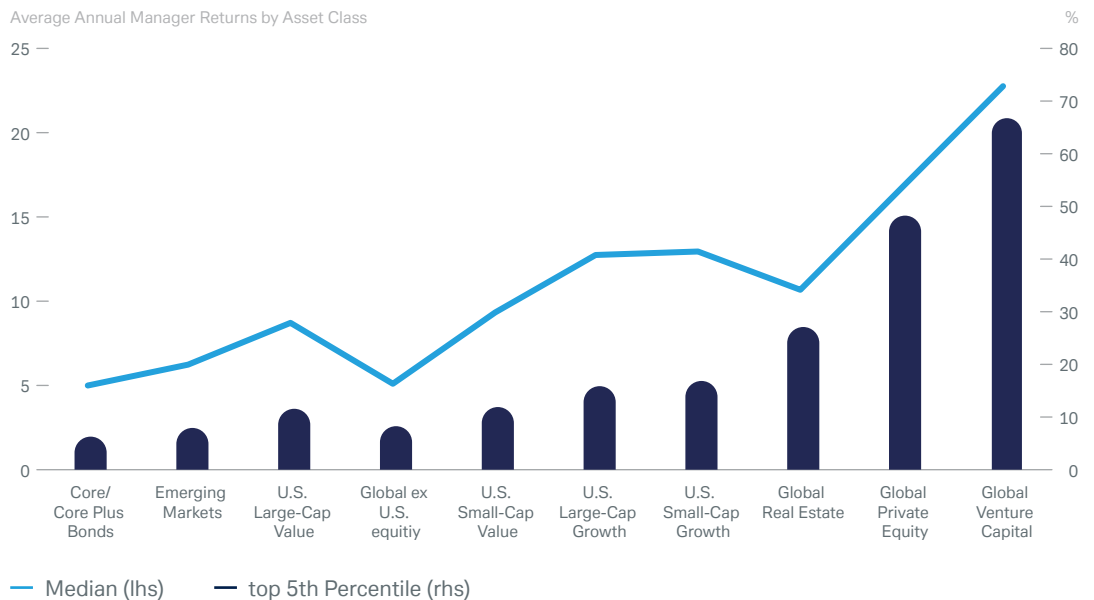


Alternatives: if you don't like beta, try alpha

Stocks and bonds are essential to a balanced portfolio but, of course, they do not have to be the only components. There are a variety of alternative asset classes available to investors depending on the objectives they wish to attain with their portfolios. Investors seeking a yield in excess of the market return (positive “alpha”) may want to investigate actively managed illiquid investments such as private equity, private debt (non-bank corporate financing), venture capital and infrastructure investments. Investors hope that these will improve the diversification of their portfolios, deliver reliable and high returns and provide a certain degree of protection against inflation. Investors looking to hedge their portfolio against inflation might look to real estate, especially as rents can rise faster than the inflation rate during phases of high inflation. This approach can be successful but also has risks and must be appropriate to the investor.

Figure 12: If beta (overall market return) is problematic, add active management

Source: Cambridge Associates, Deutsche Bank AG. Data as of September 2022.



Real estate illustrates the risk and opportunities involved. Rising interest rates in 2022 have challenged the upward movement in prices in the global residential real estate market. In the U.S., for example, mortgage interest rates are at their highest level in more than 20 years and the number of houses sold has fallen by almost 30% since its peak in 2020. However, persistently high demand for housing could increase further in the next few years and vacancy rates in the U.S. are still at a historical low. Financing and construction costs are also likely to hold back supply, meaning that the price of new-build residential property is not likely to fall by any significant amount in the near future.

Within the commercial property sector, the logistics segment may offer interesting opportunities. The growth of online retail and rising demand for warehouse capacity to safeguard against supply chain issues are keeping vacancy rates low, making rent increases feasible. The vacancy rates for retail and office properties, on the other hand, are significantly higher. Overall, real estate markets may be going through a rather fragile transition period that will potentially last one to two years. However, our sentiment towards this asset class remains generally positive, especially as rents will likely increase further in the long term. In times of high inflation rental properties can offer resilient earnings and inflation supports the argument that property should remain a key component of diversified portfolios.

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Highly energy-efficient “green buildings” may be an area of particular interest, and not just because of current energy price concerns. With regard to listed investment vehicles such as real estate investment funds, investors should however factor in relatively high volatility for the foreseeable future.

In particular, investors hope that alternative investments will improve the diversification of their portfolios, deliver reliable and high absolute returns and provide a certain degree of protection against inflation.

Alternatives: if you don't like beta, try alpha

Market and portfolio implications:

- Alternative investments can be a means of achieving yields in excess of market returns
- The long-term outlook for the real estate asset class remains positive
- Real assets may provide an effective hedge against inflation



08

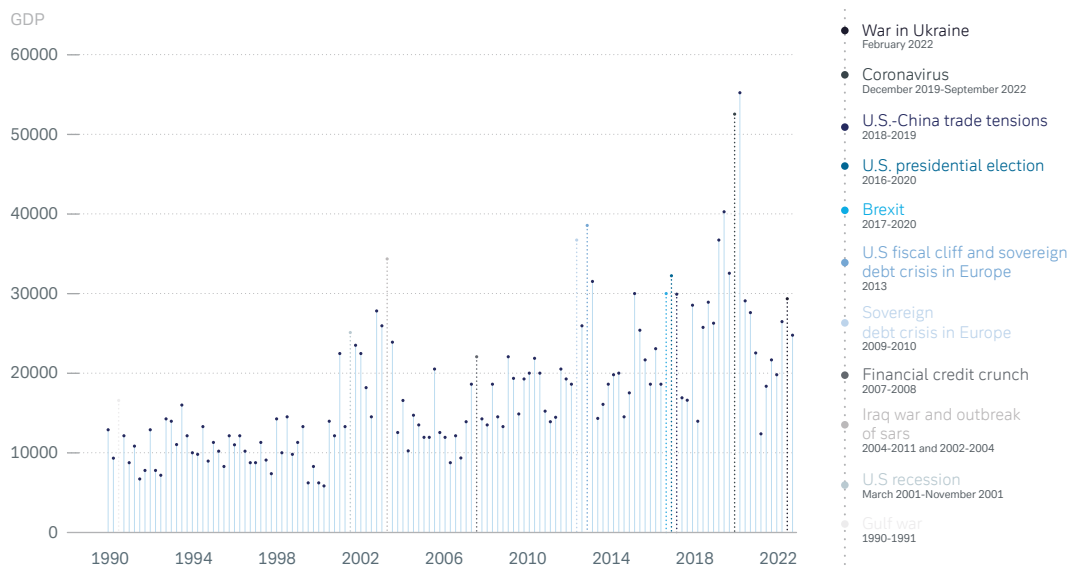


Risks: known unknowns

The biggest risks to the economy and capital markets in 2023 might appear to be familiar foes: geopolitics, the fight for global technology leadership, the Covid-19 pandemic, China’s real estate market and a potential sell-off in the bond market. However, if you look more closely, there are important differences.

Figure 13: (Geo-)political risks here to stay

Source: IMF World Uncertainty Index. Data as of November 21, 2022.



Military and political tensions, most visible in eastern Europe and the East China Sea, ramped up in 2022 and are likely to pose major challenges for the global community in 2023 as well. Solutions to end Russia’s invasion of Ukraine remain elusive. This in turn means no solutions to the knock-on effects of this conflict on areas such as migration movements, global supplies of fossil energy commodities and food; and potential geopolitical shifts extending far beyond the region. In East Asia, long-standing tensions remain between North and South Korea and in relation to China’s declared claim to Taiwan. From a purely economic point of view, the latter is particularly important as Taiwan is the world’s largest supplier of semiconductor chips. Elections in Spain, Poland, Turkey and India will also demand additional attention from investors in 2023.

In the contest between the U.S. and China for global technology leadership, the battle lines may harden further. The points of conflict still include U.S. allegations of intellectual property theft by China, significant data privacy concerns on both sides, and restrictions on mutual market access that include far-reaching trade sanctions. The extent of this ‘tech war’ is becoming increasingly apparent, too: a trade conflict has now morphed into an effort to set the applicable long-term standards in highly important fields such as 5G, artificial intelligence and chips. Success will expand the country’s power base over the long term. So both sides will not want to yield ground easily.

It is important in 2023 to build on the success achieved in containing the Covid-19 virus. China in particular needs this from a macroeconomic point of view, as extended lockdowns continue to cause considerable disruption to economic activity in key urban centres. Signs still point to an improvement in the global situation, but potential new outbreaks and the associated restrictions must be monitored closely.

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The Chinese property market's long-standing problems have been exacerbated to some degree by the Covid-19 pandemic. The sector is responsible for roughly 25% of the country's economic output and is therefore extremely relevant. We expect that the Chinese government will be able to further stabilise the market as the year progresses. Stimulation of buyer demand by rolling back the country's strict Covid-19 restrictions further would of course help – but international capital markets may remain sceptical.

We do not expect another 2022-style sell-off in global bond markets in 2023. However, if high inflation should prove to be more stubborn than generally expected or climbs even further, this could drive up bond yields again. If the yields on 10-year U.S. government bonds were to rise markedly, we believe that this would risk another sell-off with a significant impact also on stock markets and especially on securities with high interest rate sensitivity, such as those in the technology sector.

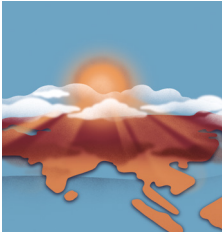
The major risks in 2023 will be familiar ones from previous years: geopolitics, the fight for global technology leadership, the Covid-19 pandemic, China's real estate market and a sell-off in the bond market. But there will be important differences too.

Risks: known unknowns

Market and portfolio implications:

- Escalation of geopolitical tensions could amplify market upheavals
- Fight for global technology leadership has extensive consequences for many market sectors
- Potential downward pressure within the bond market could impact stock markets

09



Asia: hope in the Year of the Rabbit

India, Indonesia and China – three of the four most populous economies on earth with more than three billion inhabitants in total – could each see GDP grow by 5-6% in 2023. The developed economies of South Korea and Japan may also grow more rapidly than those of most other developed markets.

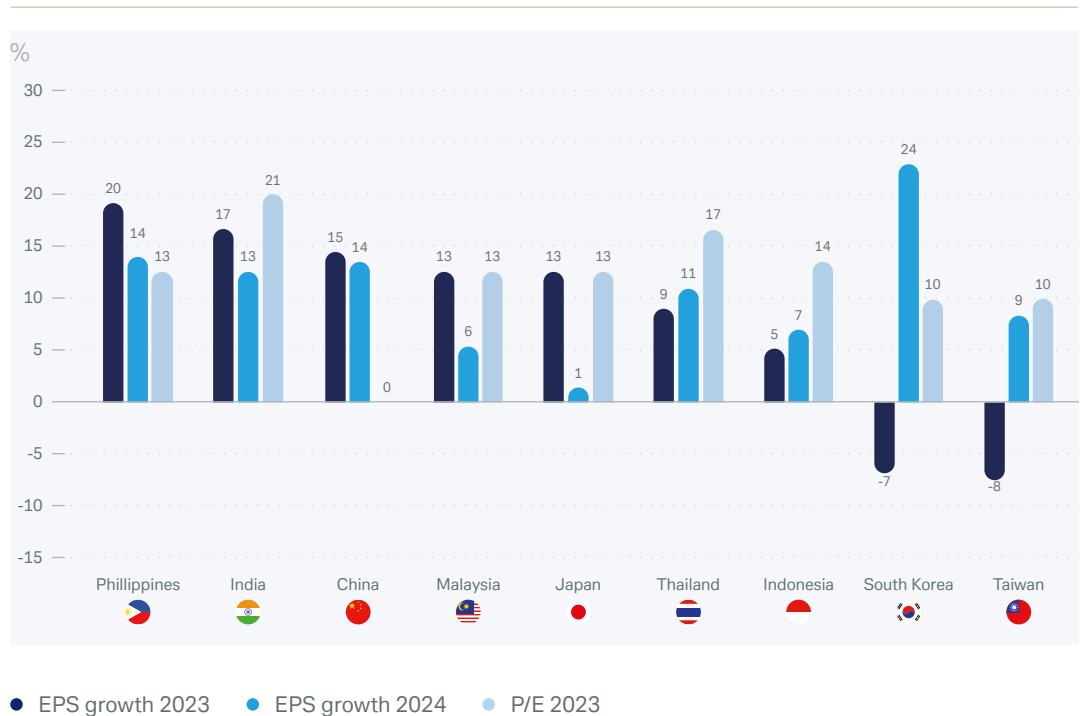
We expect Asian economies to largely reopen by no later than spring 2023. The Chinese government’s fiscal measures, which have been restrained so far, could then have their full impact, for example, in the areas of digital transformation, infrastructure, transport, renewables and biotech. This would be advantageous for China’s trading partners in Asia, too. Accumulated private savings in China may be spent on holiday travel, and popular destinations such as Thailand, Malaysia and the Philippines would profit from this.

India is currently expanding its manufacturing sector on a massive scale and launched a major infrastructure investment programme in early 2022 to encourage foreign company offshoots. The Japanese government is banking on comprehensive fiscal support to alleviate the energy crisis for its domestic businesses.

The risks to growth in Asia in 2023 emanate primarily from increasing geopolitical tensions, especially in the Pacific, a potential reigniting of the Chinese real estate crisis, and from delays in rolling back the strict Covid-19 containment measures in China.

Figure 14: Consensus expectations for selected Asian equity markets

Source: Refinitiv, Bloomberg Finance L.P. Data as of November 3, 2022.



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Investors in Asia must differentiate between the individual capital markets in terms of share valuations and expected profits. Stock exchanges in China, Taiwan and South Korea saw significant capital outflows and drops of up to 30% in share value in 2022 amid the global uncertainty and investor concentration on “safe havens” for investment. These markets in particular are hoping for a comeback given the improved macroeconomic environment, with South Korea experiencing substantial net capital inflows in November. The Indian stock market has performed well in recent months, with strong growth in corporate profits expected in 2023. Japan, the sole traditional industrial nation in the region, might represent something exceptional for investors: with a cyclical economic structure that could benefit particularly strongly from recovery in China.

The upcoming year is the Chinese Year of the Rabbit, which symbolises confidence and strong-mindedness – like the region itself.

Many Asian markets that were hard hit in 2022 are hoping for a comeback with an improved macroeconomic environment and, by extension, improved investor sentiment in the upcoming Year of the Rabbit.

Asia: hope in the Year of the Rabbit

Market and portfolio implications:

- Reopening and dynamic economic development are shifting investors’ focus back to Asia
- Diverse range of investment options depending on valuations and expected profits
- India as the new China; Japan’s market structure may appeal.

10



ESG: energy transition – climate is macro essential

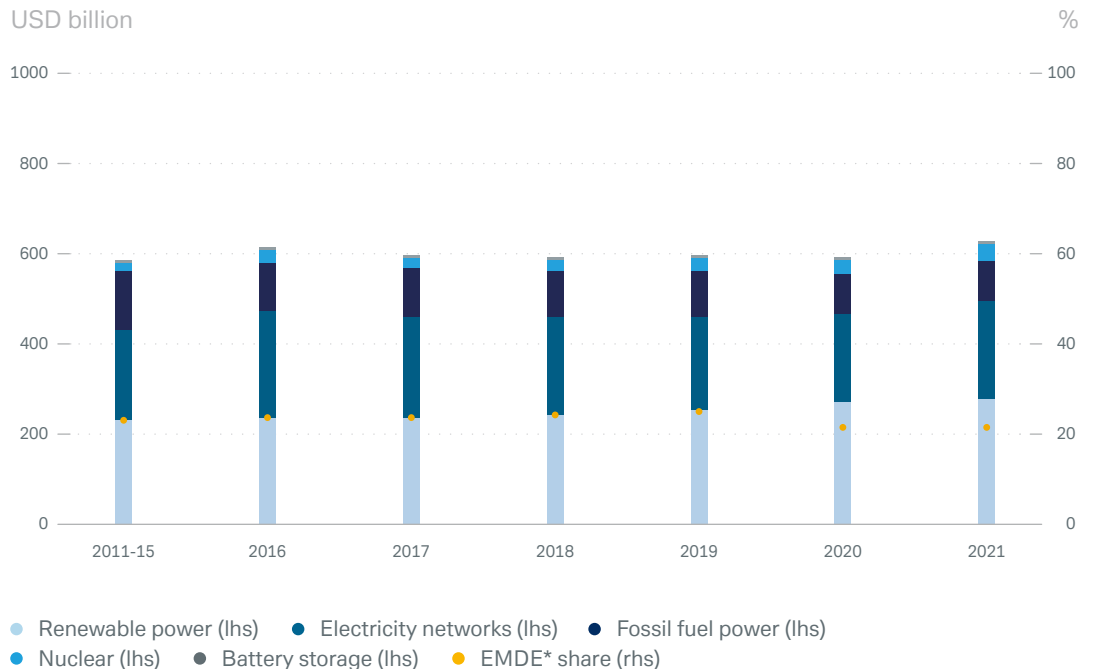
ESG investment aims to change the way we live and do business. A fundamental shift needs to take place, as virtually all experts agree that the “triple planetary crisis” – climate change, pollution and loss of biodiversity – constitutes an existential threat to humankind.¹ The primary cause of the structural market failure that has led to this crisis is that we have neglected to integrate the systematic value of nature into our economic model. Overcoming this challenge therefore requires a holistic approach that incorporates all the relevant economic and social aspects of the necessary transformation. These aspects are far more expansive than climate change and need to include social and governance dimensions. Nevertheless, the energy transition must remain a key element in strategies to overcome the triple planetary crisis. According to estimates, energy production accounts for around three-quarters of the world’s greenhouse gas (GHG) emissions.²

The significance and urgency of the energy transition for the climate was highlighted once more at the UN Climate Change Conference 2022 (COP27) in November.³ Worldwide, great efforts are being made to implement the energy transition. These include the Inflation Reduction Act (IRA), probably the most significant climate protection legislation in U.S. history. This envisages providing a total of USD369bn to promote clean energy technologies and greater environmental equity at the local government level.^{4,5} In the European Union (EU), increasing the share of renewable energy used in different industry sectors is seen as a crucial building block for achieving EU energy and climate targets. These envisage a reduction in greenhouse emissions of at least 55% by 2030 compared with the 1990 base year, and climate neutrality in Europe by 2050.⁶

Figure 15: Investments critical to achieve energy transition

Source: Refinitiv, Bloomberg Finance L.P. Data as of November 3, 2022.

Global investment in the power sector by technology



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The debate about the energy transition and energy resilience has gained momentum recently in the light of the Russia-Ukraine war. We face a global challenge that requires consideration of the ideas and goals of developing and emerging economies especially, and also of the resulting social and regulatory issues.⁷ The success of the global energy transition will depend largely on its fair implementation, addressing the social and governance issues.

Global energy transition success is essential to continued development but must be seen as being implemented fairly.

ESG: energy transition – climate is macro essential

Market and portfolio implications:

- Energy transition is a key part of ESG investments
- It will create massive new long-term investment opportunities for investors
- But success will depend on addressing associated social and governance issues too.



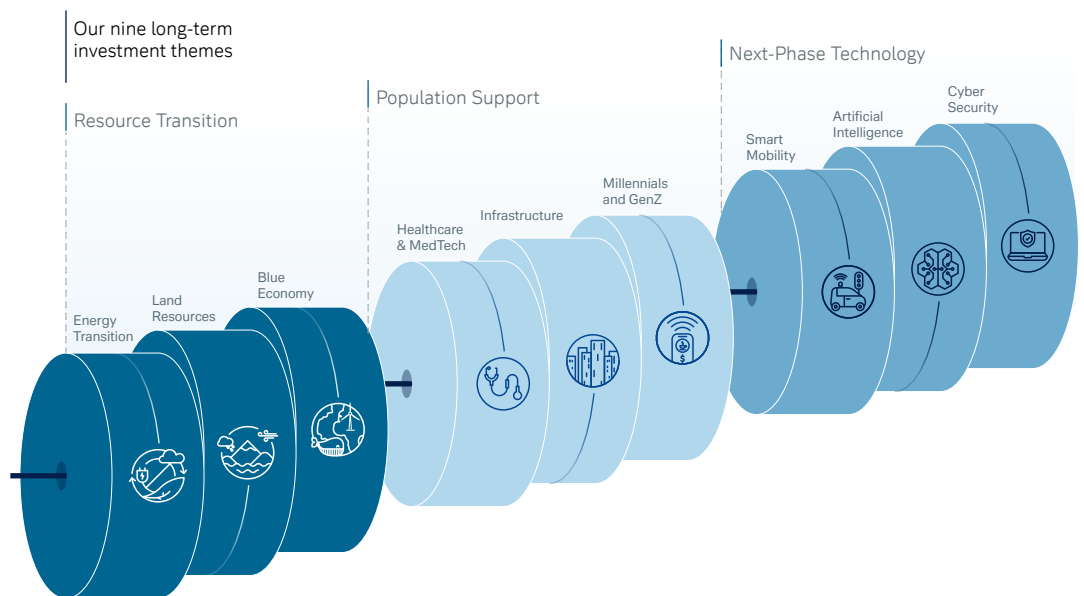
Our long-term investment themes (LTIT)

This year, we group our nine LTIT into three broad areas: **Resource transition**, **Population support** and **Next-phase technology**. We see these as the key global challenges: how to properly manage and conserve our global resources; how to provide for the global population, and how to develop key technologies to help us all do this.

The division of the LTIT into these three areas is shown in figure below. Our existing hydrogen theme is incorporated into **energy transition**. The existing resource stewardship and water themes become **land resources**. The Industry X.0 theme is now incorporated within the three next-phase technology themes – **smart mobility**, **artificial intelligence** and **cyber security**.

Figure 16: Our nine long-term investment themes

Source: Deutsche Bank AG. Data as of November 2022.



Energy Transition

What **Energy transition** includes the many components needed to wean the world off its traditional CO₂-emitting energy sources. These include changes to production, distribution and consumption (e.g. via energy saving). Transition energy sources can include long-established technologies (e.g. hydro-electricity), improving existing renewable technologies (e.g. solar and wind power), and emerging but commercially-unproven methods of energy production. The last group includes “green” hydrogen, produced by using renewable energy to electrolyse water.

- Why** **Development** of new energy sources will remain a focus of government policy due to climate change and security concerns (reinforced by the Russian invasion of Ukraine). For example, the REPowerEU plan brings forward hydrogen-specific targets on energy use, transportation networks and regulation. The European Commission now targets 10 Mt of production and 10 Mt of imports of hydrogen by 2030, while also setting aside EUR200mn for research.⁸ In the U.S., the Inflation Reduction Act introduces a graduated system of tax credits based on lifecycle emissions, aimed at making “green” hydrogen cheaper than the “grey” alternative.⁹ There is a lot to do: the IEA estimates that low-emission hydrogen production accounted for only 0.7% of total global production in 2021.¹⁰
- How** **Investments** can be made in different parts of the renewable energy chain – production technology (e.g. electrolyzers), distribution infrastructure (e.g. pipelines) and use technologies. Project sizes will vary substantially but the total amounts will be large. Reaching net zero will require USD3tn of investments by 2050.¹¹ Private market investments may be particularly important in the most innovative areas.
- Risks** Some emerging energy technologies still need to prove their **commercial viability**. Energy security in some areas will depend on resilient supply chains for key materials.



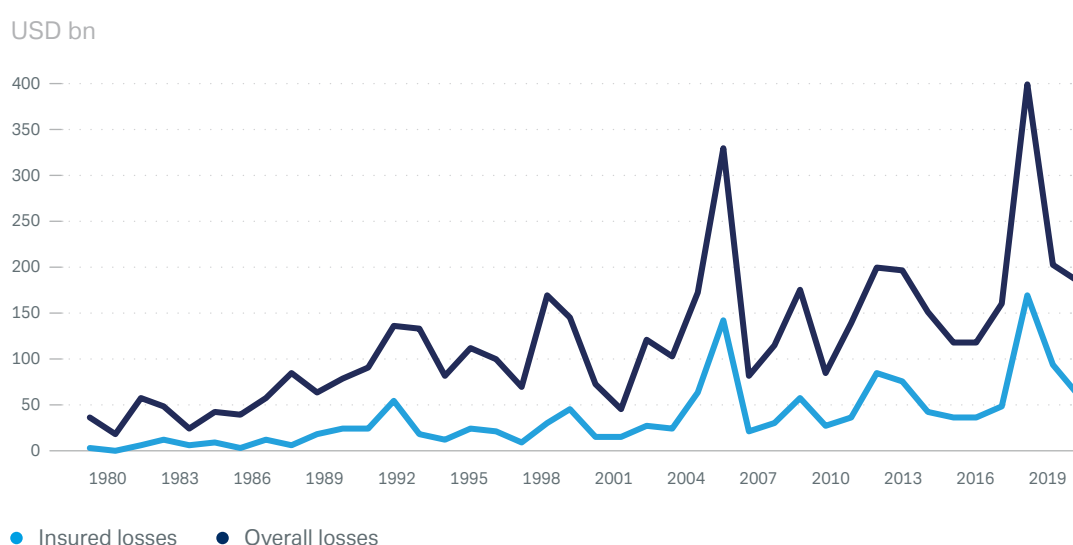
Land Resources

- What** The **land’s resources** – mineral, water, vegetable or animal – need careful stewardship to preserve them for future generations. This can involve reduced consumption, conservation and recycling and may use both technology and nature-based solutions (e.g. forest preservation). Protecting biodiversity will be a growing priority. Rising populations and resource-intensive future development (e.g. battery production for electric vehicles, or green hydrogen output) also mean that better use of water (e.g. through recycling and desalination) is a key area.
- Why** **A key driver is climate change**, its unpredictable impact on many natural resources, and the impetus it is giving to political and social efforts to boost sustainability. Awareness of the problems posed by economic growth and urbanisation (e.g. on water consumption and waste management) is increasing. Technology is opening up new ways to approach these problems but large amounts of capital will be needed. Large-scale public infrastructure investment programmes are being put in place (e.g. in the EU and U.S.) but this will only scratch the surface of the problem and substantial private investment will be needed. According to the United Nations, for example, annual spending on water supply will need to triple to USD114bn in the coming decade.¹²
- How** In some areas, **investment can come from publicly-listed companies**, e.g. in energy, water or waste management, with established global indices. Private investments could be made, directly or indirectly, into smaller, innovative, more narrowly-focused firms at an earlier stage in their growth cycles. New forms of investing are also emerging, e.g. via voluntary carbon credits based on forest or marine nature-based approaches to resource stewardship.
- Risks** **Changes in raw material prices (e.g. metals as well as energy) can impact the viability of resource projects, as can changes in regulation**. Interest rate changes could also have an impact on investment valuations. Overall fiscal pressures could limit public funding initiatives. Political risks may also come from populist parties opposed to the environmental agenda. Improving data and understanding of life on land could shift policy priorities.

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Figure 17: Losses and insured losses from extreme weather events (USDbn)

Source: Bloomberg Finance L.P., Deutsche Bank AG. Data as of October 17, 2022.



Blue Economy

What

The **Blue Economy** can be defined as the sum of the economic activities of Ocean-based industries, together with the assets, goods and services provided by marine ecosystems.¹³ One estimate is that the Ocean provides USD2.5tn in goods and services each year and has total assets worth around USD24tn. The concept of a Sustainable Blue Economy focuses on the need to provide social and economic benefits for current and future generations through restoring, protecting and maintaining diverse, productive and resilient ecosystems.

Why

There is a growing in interest and understanding of the Ocean's role as a natural asset as well as economic engine – for example, it absorbs around 30% of the world's total carbon emissions. Achieving a Sustainable Blue Economy is likely to provide many investment opportunities not just through new sectors, but also as the value chains of existing industries are rethought. Clean technologies and renewable energy are only one component of this: other important areas may include changing existing industries (e.g. the seafood industry) and improving coastlines' defence against climate change-related effects. Sustainability issues run across many investment areas, given the risks to existing assets, for example, through extreme weather events, rising sea levels, or exploitation by humans.

How

Equity exposure is possible through larger companies involved in parts of the maritime economy, or private markets may help investors in emerging firms or technologies. New forms of investment include "blue bonds" (from governments, development organisations or individual firms) although issuance of these remains small. Investment in marine and coastal ecosystems (e.g. mangroves) may also be facilitated by growing interest in "blue carbon" credits as part of the expected strong growth of the voluntary carbon market. In this changing financial landscape, "blended finance", e.g. through public/private partnerships, is also likely to be important.

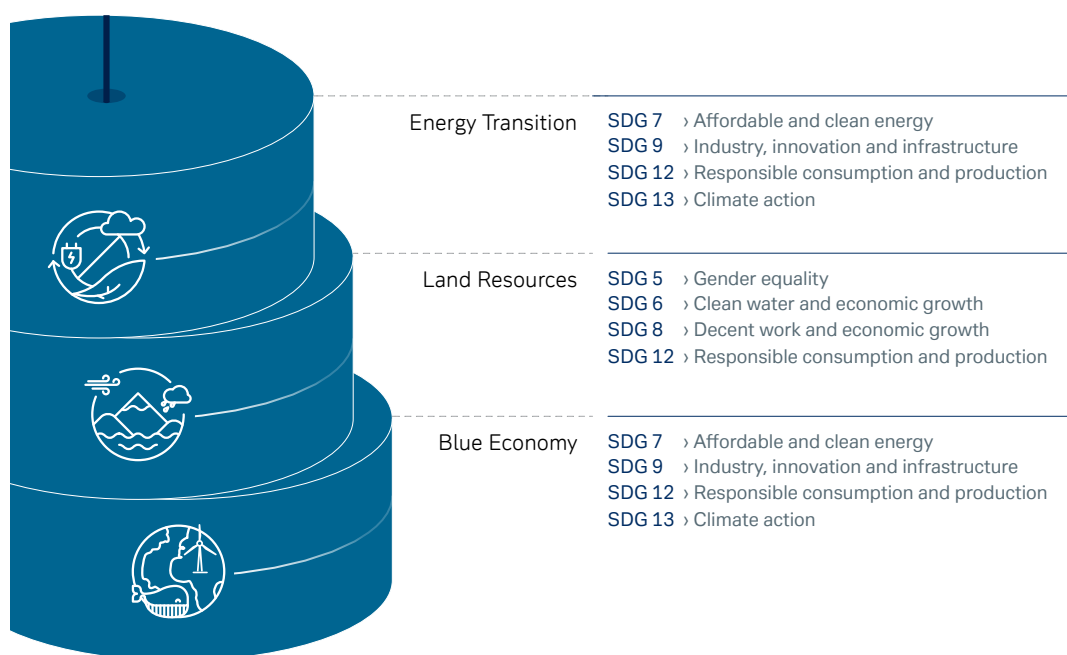
Risks

Limited current scientific knowledge on large parts of the Blue Economy is a major challenge for investors. New regulation may create transition risks. There are also geopolitical risks, with Ocean resources distributed across or outside national economic zones. Ocean governance is likely to be put under further stress by the "blue acceleration" – the intensifying race for ocean resources.

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Figure 18: Mapping resource transition LTIT to the UN's Sustainable Development Goals (SDGs)

Source: Deutsche Bank AG. Data as of November 2022.



Healthcare and MedTech

What **Healthcare and MedTech covers a wide range of activities** including data & analytics, diagnostics, genomics, lab automation, medical instruments, precision medicine, regenerative medicine, robotics, and telehealth. One estimate puts global healthcare costs at USD6.9tn in 2021.¹⁴ Sub-sectors are themselves vast: the revenue of the medical technology sector alone was estimated at USD440bn in 2021 and that of the digital health market at over USD100bn.¹⁵

Why **Digitalization will remain a driver of change.** Healthcare, biotechnology and information technology are combining to offer new market opportunities, e.g. in the form of telemedicine, remote monitoring, med-tech or artificial intelligence. (AI is being used, for example, to discover new chemical compounds and drugs. One estimate is that it cuts drug preclinical development time by up to 75% and costs by up to 50%).¹⁶ Aging populations are another driver. Healthcare spending of the elderly (55+) in the U.S. – by far the biggest healthcare market worldwide – now accounts for 56% of total health spending, despite this age group making up only 30% of the population.¹⁷

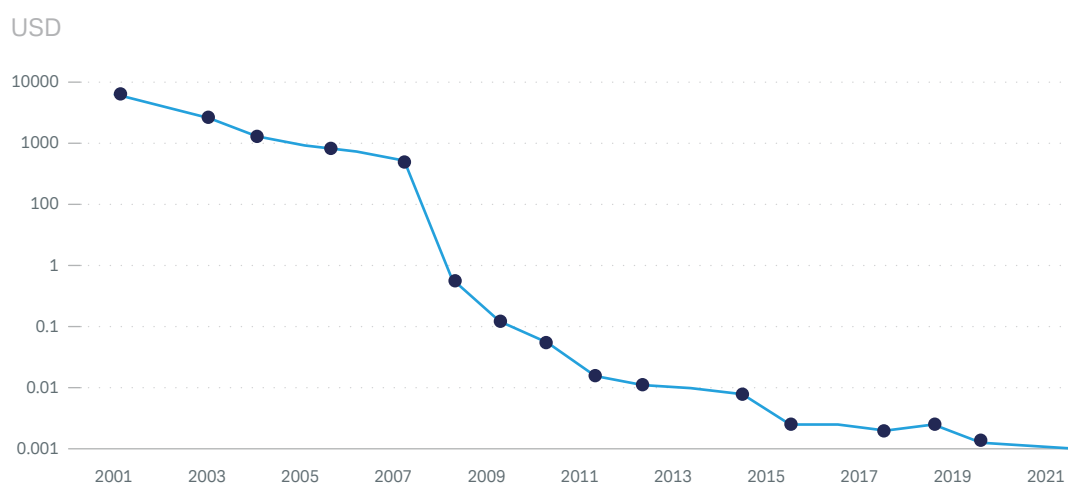
How **A very large number of investment methods exists, in established and emerging sub-sectors.** At a public markets level, investments can be done through individual securities, and many thematic ETFs exist covering different aspects of the Healthcare and MedTech sectors. Many private market opportunities exist too, in both established and emerging sub-sectors.

Risks **Overall spending pressures on governments could trigger measures to limit access to healthcare or prices paid** (e.g. the Inflation Reduction Act signed in the U.S. in August). Regulation may complicate the introduction of new products and technologies. Investors should be aware that technological development is sometimes marked by abrupt and non-linear shifts.

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Figure 19: Cost per megabase of human genome DNA sequencing (USD)

Source: National Human Genome Research Institute, Deutsche Bank AG. Data as of November 2022.



Infrastructure

- What** Infrastructure is the backbone of all our economic activities. The asset class focus has traditionally spread across areas such as power networks and electricity grids, to communication towers and fibre-optics networks, to gas pipelines and storage, and to toll roads, ports, bridges and airports. But investment interest in infrastructure is now broadening out to include non-physical social and information infrastructure.
- Why** Traditional infrastructure investment returns often depend on income flows from large-scale investment projects (e.g. transit fees at airports). Because these are often subject to periodic price renegotiation, part of their appeal has been to offer some degree of protection against inflation. But two factors are now driving a new approach: decarbonisation (and other environmental initiatives) and digitalization. Public funding in the EU, U.S. and elsewhere is designed encourage change in both areas. The result has been different, more innovative and often smaller-scale infrastructure projects where investor interest may be on capital gains through M&A or platform technologies.
- How** The overall listed infrastructure market is worth around USD7tn. Private markets offer a broad range of issuers, potentially allowing investors to pick more specific investments, thanks in part to the targets set by public institutions. Europe is the largest market for private infrastructure financing.
- Risks** As noted above, the appeal of traditional infrastructure may be in apparently more predictable cash flows than for other asset classes – but the Covid pandemic has reminded us that the unexpected can happen (e.g. the fall in airport traffic). The impact of rising interest rates on new investments is complex: traditional infrastructure may provide some protection against associated high levels of inflation, but more innovative technology-based infrastructure could prove more vulnerable.



Millennials and Gen Z

- What** Millennials, or Generation Y, are usually defined as those born between the early 1980s and the mid-1990s. They are now between their late 20s and early 40s.¹⁸ This is a generation who are seen as good at handling multiple sources of knowledge and dealing with both real and virtual experiences, but who are less true “digital natives” than their successors (Gen Z, born 1995–2010). These artificial “generations” can be compared to previous groups (Gen X and baby boomers) to identify differences in consumer behaviour and life priorities.¹⁹
- Why** The purchasing power of this group will remain large and they could also have an increasing influence on political decision making (e.g. on economic policy) as the relative number of older baby-boomer voters falls. Millennials are seen as wanting services that can give them access to products without the problems of ownership.²⁰ They place a high value on convenience of access to goods and services, and trust is also very important to them. Using digital media, they are concerned about comparing and finding the best deal.²¹ They also expect the companies they deal with to behave sustainably and socially, and this may lead them to favour companies with high ESG scorings.
- How** Areas particularly affected by millennials’ preferences include social media and entertainment, health and fitness, clothing and clothing accessories, food and drink, travel and leisure, housing and household goods, and financial services. Smaller companies that focus specifically on millennials are rather less common in listed markets. Private markets will offer a range of opportunities across these broad areas.²²
- Risks** Longer-term economic development is important: millennials’ spending power could be impacted by lower salary growth, increased taxation (to meet many countries’ increasing fiscal burdens) or problems due to inter-generational wealth inequality (e.g. in housing). Worsening environmental concerns could also force millennials to reassess their own spending levels and priorities.



Smart mobility

- What** Smart mobility is defined as energy-efficient, low-emission, safe, comfortable and cost-effective mobility. It is not just about self-driving or electric cars. It has a much broader scope, including different transport methods and ownership structures (public, private and shared). It involves both new projects and the optimisation of existing offerings with regard to environmental concerns and other factors. Connectivity and real-time information provision will be key to many new and innovative approaches but the theme does not necessarily have a narrow information and communications technology (ICT) focus.²³
- Why** There are three key drivers: sustainability, urbanisation and changing consumer demand. First, the political and social drive for more sustainability. Achieving net zero CO₂ targets will need more than just the adoption of electrical vehicles. We will have to rethink mobility as a whole. Second, smart mobility will have to address the side-effects of further urbanization (e.g., greater traffic congestion, particularly in supercities). Third, changing consumer demand patterns may increasingly favour more flexible individual mobility (e.g. short-term car rentals over car ownership).²⁴
- How** Investments are possible in companies that may benefit from energy storage technologies, autonomous vehicles, shared mobility and new transport methods. Some will be in the Information Technology sector but the Consumer Discretionary, Industrials and Materials sectors are also relevant. Investments can therefore cover the entire supply chain – from production to software.²⁵

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Risks Development of smart mobility can create conflicting goals, e.g., greater on-demand mobility could lead to lower demand for public transport.²⁶ Regulatory frameworks may change due to different priorities in climate change mitigation, impacting the relative attractiveness of different smart mobility concepts. Public funding for smart mobility may be constrained by general budgetary pressures.



Artificial Intelligence

What AI provides problem-solving capabilities across multiple sectors – including healthcare, mobility and fintech. Key topics include deep learning, neuro-linguistic programming (NLP), image recognition, speech recognition & chatbots, cloud computing and cybersecurity. AI market size is estimated at around USD330bn.²⁷ Most AI companies are located in the U.S., followed by South Korea and China.

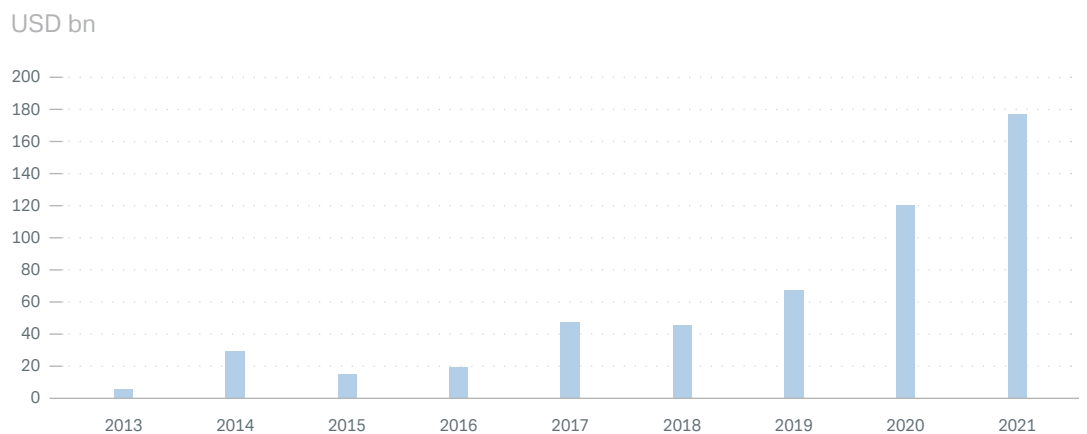
Why Likely rapid further growth in volumes of data created, captured, copied and consumed will accelerate improvement of AI's abilities. AI systems are creating a demand for training data (e.g. already labelled sets of images) to allow systems to become proficient, to the potential advantage of private or public entities with access to extensive data collections. AI (and associated data training) is already getting much cheaper – for example, training costs for image classification systems have fallen by over 60% since 2018.²⁸ Industry benchmarking systems are also likely to improve. Interest in the sector overall is likely to increase even further as deep AI (scaling up of current machine learning, with less dependence on human intervention) comes closer.

How Most investment opportunities are in the information technology sector, followed by the communications sector. Areas include data set provisions, automated customer service agents, sales process recommendation & automation, automated threat intelligence & prevention, IT automation, and fraud analysis and investigation.²⁹ Investment can be done through public or private markets.

Risks AI ethics remain contentious, with fairness (e.g. language prejudice) and openness key concerns. Increasing regulation is trying to address ethical and other concerns but is struggling to keep up with developments, and reversals are possible. AI is also vulnerable to geopolitics – U.S./China trade disputes could have an impact, particularly given extensive cross-country collaboration between the two (measured by AI scholarly papers).

Figure 20: Global corporate investments in AI (USDbn)

Source: HAI Stanford University, Artificial Intelligence Report 2022, Deutsche Bank AG. Data as of November 2022.



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Cyber Security

- What** Cyber Security (or IT security) protects sensitive data and vital systems from online threats. Threats to networked applications and systems can come from within or outside an organisation.³⁰ Cyber Security has many different areas, including data loss prevention, network security to threat intelligence, among many others.³¹ In 2021, the market for cyber security was estimated to be worth USD140bn.³²
- Why** The increasing interconnectedness of our world (e.g., growing numbers of internet users, the “internet of things”, the metaverse and artificial intelligence) increases the potential dangers. Business models increasingly operate almost entirely in the cyber world (e.g. through e-commerce platforms). This, and technological breakthroughs in fields like artificial intelligence, cloud computing and blockchain, has enhanced possible internet security solutions in a linked network infrastructure. In the wake of rising threats, consumers, companies and governments are spending more on cyber security and this upward trend is expected to increase. Companies in the sector offer a wide range of products or services, from cyber professional services to network security and threat intelligence.³³
- How** Established companies focused on cyber security currently dominate the sector, but major market players with broader business models could move into this area. At the other end of the scale, small niche companies in emerging areas may also offer opportunities. We see continued growth in usage of enterprise security solutions in the manufacturing, banking, financial services, and insurance (BFSI), and healthcare sectors.
- Risks** Increased regulation of cyber space could limit activity and thus cyber security growth in some sectors. There is a shortage of trained professionals in cyber security, which could prove a structural risk if companies do not succeed in finding or training talent.³⁴

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Appendix 1

Macroeconomic forecasts

	2022 Forecast	2023 Forecast
GDP growth rate (%)		
U.S.*	1.8	0.4
Eurozone (of which)	3.2	0.3
Germany	1.8	0.0
France	2.5	0.3
Italy	3.5	-0.1
Spain	4.6	0.8
Japan	1.6	1.2
China	3.3	5.0
World	3.2	2.8
Consumer price inflation (%)		
U.S.	8.2	4.1
Eurozone	8.4	6.0
Germany	8.9	7.0
Japan	2.3	1.6
China	2.0	2.3

Bloomberg consensus *For the U.S., GDP growth Q4/Q4 % is 0.5% in 2022 and 1.6% in 2023.

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Appendix 2

Asset class forecasts

Bond yield and spread forecasts for end-December 2023

United States (2-year Treasuries)	4.10%
United States (10-year Treasuries)	4.20%
United States (30-year Treasuries)	4.35%
USD IG Corp (BarCap U.S. Credit)	150bp
USD HY (Barclays U.S. HY)	550bp
Germany (2-year Schatz)	2.30%
Germany (10-year Bunds)	2.40%
Germany (30-year Bunds)	2.40%
United Kingdom (10-year Gilts)	3.30%
EUR IG Corp (iBox Eur Corp all)	150bp
EUR HY (ML Eur Non-Fin HY Constr.)	550bp
Japan (2-year JGB)	0.00%
Japan (10-year JGB)	0.20%
Asia Credit (JACI)	380bp
EM Sovereign (EMBIG Div.)	500bp
EM Credit (CEMBI Broad)	425bp

FX forecasts for end-December 2023

EUR vs. USD	1.05
USD vs. JPY	140
EUR vs. JPY	147
EUR vs. CHF	1.00
EUR vs. GBP	0.90
GBP vs. USD	1.15
USD vs. CNY	7.35

Equity index forecasts for end-December 2023

United States (S&P 500)	4,100
Germany (DAX)	15,000
Eurozone (Euro Stoxx 50)	4,000
Europe (Stoxx 600)	445
Japan (MSCI Japan)	1,250
Switzerland (SMI)	11,150
United Kingdom (FTSE 100)	7,600
Emerging Markets (MSCI EM)	990
Asia ex Japan (MSCI Asia ex Japan)	625
Australia (MSCI Australia)	1,450

Commodity forecasts for end-December 2023

Gold (USD/oz)	1,850
Oil (Brent Spot, USD/b)	100

Forecasts as of November 17, 2022.

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Glossary

The [Bank of England \(BoE\)](#) is the UK central bank.

[Brent](#) is a grade of crude oil used as a benchmark in oil pricing.

[Bunds](#) are longer-term bonds issued by the German government.

The [Composite PMI \(Purchasing Managers Index\)](#) tracks business trends by measuring the activity level of purchasing managers in both the manufacturing and service sectors.

[CHF](#) is the currency code for the Swiss franc.

[CO2](#) 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.

[COP27](#) refers to the 27th United Nations Climate Change Conference held in Egypt in November 2022.

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.

[Democrats](#) is short for the Democratic Party in the U.S., one of the two major parties.

[Dividends](#) are payments made by a company to its shareholders.

The [U.S. Dollar Index \(DXY\)](#) is a weighted index based on the value of the U.S. dollar versus a basket of six other currencies.

[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.

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.

The [European Central Bank \(ECB\)](#) is the central bank for the Eurozone.

The [European Green Deal](#) is a 2019 initiative by the European Commission with the aim of making the European Union's net greenhouse gas emissions zero by 2050 and making it the first "continent" to achieve climate neutrality.

[EUR](#) is the currency code for the euro, the currency of 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 19 European Union member states that have adopted the euro as their common currency and sole legal tender.

[Exchange Traded Funds \(ETFs\)](#) are investment funds traded on stock exchanges.

The [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.

Glossary

The **FTSE MIB Index** includes the 40 most trade stocks on the Italian national stock exchange.

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

Gilts are bonds that are issued by the British Government.

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.

The **Harmonised Index of Consumer Prices (HICP)** is an approach to measuring consumer price inflation which has been standardised across EU countries.

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.

The **International Monetary Fund (IMF)** was founded in 1944, includes 189 countries and works to promote international monetary cooperation, exchange rate stability and economic development more broadly.

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.

A **Japanese Government Bond (JGB)** is a bond issued by the government of Japan.

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

The **median** is the data point lying at the middle of a data range.

Mergers and acquisitions (M&A) are two key methods of corporate consolidation: A merger is a combination of two companies to form a new company, while an acquisition is the purchase of one company by another in which no new company is formed.

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 EM Index** captures large- and mid-cap representation across 23 emerging markets countries.

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

The **NASDAQ index** is a market capitalisation-weighted index of around 3,000 equities listed on the Nasdaq exchange.

The **National Bureau of Economic Research** founded in 1920 in the U.S. conducts and disseminates non-partisan economic research.

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NextGenerationEU (NGEU) is a major EU recovery plan, based around grants and loans, running from 2021-2023. It aims to make Europe greener, more digital, more resilient and more able to adapt to current and future challenges.

The **non-exempt members of OPEC** are Iran, Libya and Nigeria and they are not subject to the **OPEC+** production agreement.

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 12 members. The so-called "**OPEC+**" brings in Russia and other producers.

Price/book (P/B) ratios measure a company's share price relative to its tangible assets.

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.

The **Recovery and Resilience Facility (RRF)** is a key instrument of the NextGenerationEU recovery plan, financing reforms and investments in EU members from the start of the pandemic in February 2020 until the end of 2026.

REPowerEU is a European Commission plan that aims to achieve complete EU energy independence from Russia well before 2030 by saving energy, producing clean energy and diversifying Europe's energy supplies.

Risk premia refer to the return in excess of the risk-free rate of return that an investment is expected to yield. It is a form of compensation to investors for tolerating the extra risk.

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

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

The United Nations **Sustainable Development Goals**, finalised in 2015, comprise 17 sustainable development goals and 169 targets.

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

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

A **strategic asset allocation** process involves setting preferred allocations for asset classes on a medium to long-term time horizon.

The **TAPAs** (there are plenty of alternatives) argument is that, with bond yields higher, there are alternatives to equities for investors seeking yield.

The **TINA** (there is no alternative) argument has been much used in recent years for investing in equities, in the belief that they are likely to offer relatively attractive returns.

The **Transmission Protection Instrument** unveiled by the ECB in July is a new 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.

Glossary

Treasury Inflation Protection Securities (TIPS) index redemption values to the U.S. CPI.

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

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

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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