Deutsche Bank
Chief Investment Office

Annual Outlook 2022

CIO Insights

2022: no quick fixes

Economic and investment outlook

Contents

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Letter to Investors

Christian Nolting
Global CIO

2022: no quick fixes

Inflation and central banks will be in focus. This should be the year where central bank policy really starts to change gear – with other central banks starting to follow the Fed's line on tightening. But there will be plenty of other regime shifts underway too (in terms of inflation, climate, geopolitics and technology, amongst others).

All this change will make for an environment where complacency around any "baseline" scenarios should be avoided. The pandemic has already shown us that full and quick fixes to complex problems are rare. We should view 2022 as a transition year, enabling investors to position portfolios for the challenges ahead.

Economic recovery from the lows of mid-2020 was never going to be completely straightforward. It has required high levels of both monetary and fiscal policy support. The world has changed over the last two years and many economies are still struggling to readjust.

High rates of inflation are an important symptom of this readjustment process. To a large extent, they reflect a mismatch between the recovery of demand and supply. We can see this in disruption to global production and supply chains but also in labour markets.

Fixing such mismatches will not stop the process of change: the world economy is a dynamic place. To paraphrase what the ancient Greek philosopher Heraclitus is supposed to have said: it is impossible to step in the same river twice. The river is different and you as a person are different too. The inflation "river" is always changing with different drivers; your own personal inflation expectations are changing too.

What change means is that effective risk management of portfolios needs to complemented by longer-term considerations of portfolio aims and composition: you need to think in a structural, rather than reactive, way. I think that there are two essential components to this.

01 This is an important time to focus on strategic asset allocation. Using market timing around such complex processes of change won't be enough, with an effective strategic asset allocation likely to prove a much more effective and reliable source of long-term returns. This may also be a less stable investment environment than first appears. Financial repression (artificially low or negative real interest rates) is clearly here for some time to come. But even relatively small changes in interest rates can have major direct and indirect effects on asset classes. We should also not assume that a very traditional asset allocation (e.g. the classic 60/40 equity/bond allocation) will work well. More sophisticated approaches will be needed.

02 Environmental and ESG issues more broadly (i.e. including social and governance aspects) will get even more important for portfolios. Environmental issues are now firmly fixed centre-stage in global policymaking, and the implications for investors go far beyond higher rates of inflation. Whatever your stance is here, potential risks (e.g. around stranded assets) have to be faced up to. The switch to a carbon-neutral economy will also, of course, create many interesting opportunities. ESG-related and other long-term investment themes are discussed later in this publication.

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As I said above, 2022 should be viewed as a transition year as the global economic and investment environment evolves in search of a new reality. Acting now on strategic asset allocation and ESG in portfolios and should help capture this process of change.

Wishing you a successful and wealth-creating investment year.

Christian Nolting

Christian Nolting
Global CIO

Ten themes for 2022

1. Politics: sharing pains. Competition for trade and natural resources continues with environmental issues and redistribution of resources within economies important too.

2. Economy: running hot. Strong growth rates in 2021 are likely to be followed by only a slight moderation in 2022. But this will be a subtly differentiated recovery, with implications for FX and other asset classes.

3. Asia: the eye of the tiger. The region's economic dynamism will make for an exciting 2022 after a challenging 2021. Chinese economic stabilisation is likely to benefit many regional assets and Indian growth should be strong.

4. Inflation: the rhino in the room. Price rises are a serious problem, are already disruptive and contain a number of long-term risks. We are unlikely to go back to an ultra-low inflation regime.

5. Monetary policy: twilight fears. High inflation creates multiple problems for central banks and reactive policy could further unsettle markets. The likely hawkishness of central banks should not be overstated.

6. Fixed income: shifting sands. Volatility prompted by policy change may challenge the role of fixed income in portfolios. Some markets will be well supported but be aware of the risks.

7. Equities: real(istic) returns. The asset class outlook still looks generally positive, but returns may be lower than in 2021. Cyclical and geographic rotations during 2022 could have an impact.

8. Commodities: green growth. Commodity price volatility may decline as economic reopening pressures ease. Creating a green infrastructure could boost demand for energy and some industrial commodities.

9. Real estate: still building. The sector offers some scope for further gains, but sectoral and geographic differentiation is important. Materials and labour costs may impact supply in some markets.

10. FX: macro matters. Worries about U.S. inflation and the likely policy responses have driven up the USD. But other policy and macro fundamentals could start to work against the currency in 2022.

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Ten themes for 2022

01

Politics: sharing pains

As the world learns to live with coronavirus, geopolitics are again coming to the fore. Different social and economic systems are competing for trade and natural resources in a way that goes beyond the historical rivalries of traditional regional power blocs.

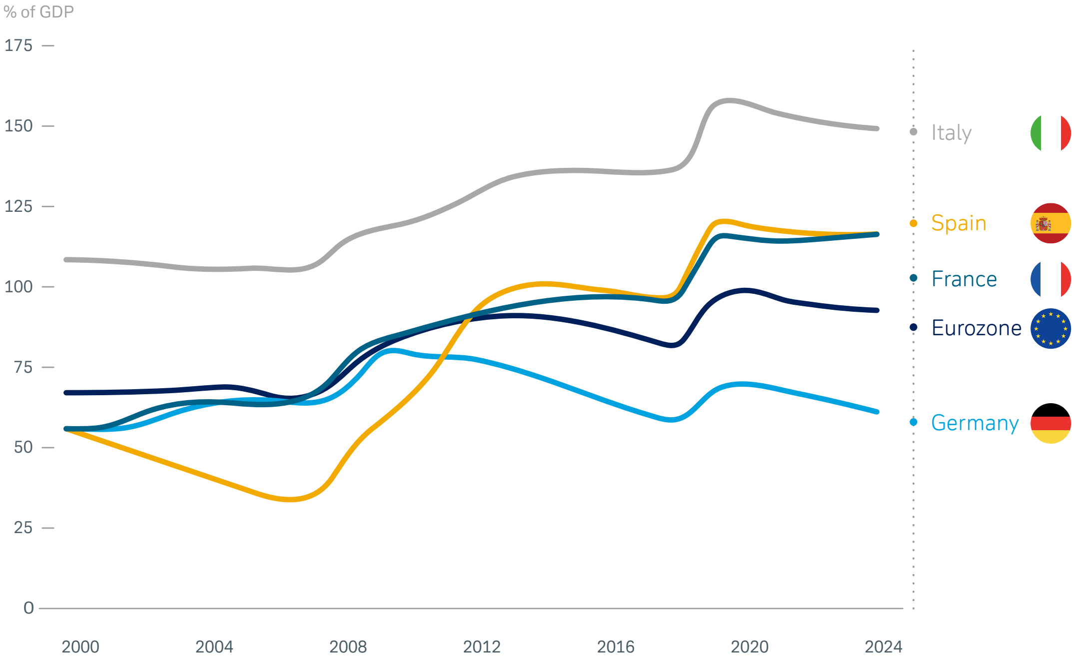
Geopolitical stresses may be evident in multiple ways – through financial markets (e.g. in terms of listing restrictions), through commodities (supply restrictions), through other regulations, through political summits and, ultimately, the underlying threat of military conflict.

Geopolitical differences will be further complicated by environmental issues. The important and intensifying struggle against climate change, with implications for activity levels and costs, may expose new divisions within traditional blocs (e.g. India, China and other emerging markets) as well as between developed and emerging economies.

All this will take place when individual economies are growing fast but remain under varying forms of economic stress. For most, offsetting the economic impact of the coronavirus has been expensive. Public finances are already under stress but the need for redistribution of resources between social groups – as economies restructure – remains at a time when public debt levels are already high, but with some divergence (Figure 1 illustrates for the Eurozone). Populations' redistribution concerns will be expressed through a range of important elections and appointments in 2022 – for example the French presidential elections in April and the U.S. mid-terms in November. More formalised decision-making – for example China's National People's Congress and the likely subsequent high-level political reshuffle – will also have to acknowledge public concerns in this area.

Figure 1: IMF public debt forecasts for the Eurozone

Source: IMF, Deutsche Bank AG. Data as of November 2021.



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What this means is that there will be significant sharing pains at both at an international and national level. Reconciling the different economic and political needs behind these sharing pains will be difficult – this is the big political challenge for 2022.

Geopolitical differences may be complicated by environmental issues, at a time when individual economies remain under varying forms of economic stress. Populations' redistribution concerns will be expressed via a range of important elections and appointments in 2022.

Theme 1. Politics: sharing pains

Market and portfolio implications:

- Geopolitics don't just impact commodities
- Public finance issues will add to investment stress
- Expect volatility around key events

02

Economy: running hot

Economic recovery will continue, despite coronavirus becoming endemic in many countries. We are still forecasting, for most economies, strong growth rates in 2021 to be followed by only a slight overall moderation in 2022. (Our forecasts are given in Figure 2 below.) Generally, many economies will be running hot as high levels of stimulus continue to be applied to economies where potential growth rates remain low: such ignoring of supply conditions creates inflation and other risks.

Figure 2: GDP growth forecasts

Source: Deutsche Bank AG. Data as of November 18, 2021.

GDP growth (% YoY)

	2021	2022
India	9.3	7.5
China	7.7	5.3
UK	6.8	4.5
France	6.7	4.3
Italy	6.2	4.7
World	5.6	4.5
U.S.*	5.6	4.0
Brazil	5.1	1.5
Eurozone	5.0	4.6
Spain	5.0	6.3
Russia	4.3	2.5
Germany	3.0	4.8
Japan	1.9	2.9

* For the U.S., GDP growth Q4/Q4 is 4.7% in 2021 and 4.1% in 2022.

Despite overall strong growth, this will be a subtly differentiated recovery. The relative growth trajectories of different countries will be important. As we already know, European recovery is, for the moment, lagging that in the U.S. But also consider the broader implications of slower Chinese growth. There will be a continuing process of readjustment within economies.

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GDP drivers will be important. When economies first started pulling out of coronavirus lows, the focus was on consumption – private and government. Investment and consumption have been sustained by a range of government plans (e.g. NextGenerationEU) but it is important to realise that these are different in scope and run on different timelines – their impact on economic growth will vary over time, as evidenced by the multiple U.S. stimulus packages over the last few years.

Exports' direct and indirect contribution to growth in many economies should be boosted by the resolution of most global supply issues by H2 2022. But note that base effects – in this era of change – will impact YoY rates.

Environmental policy will also have an important impact on growth in multiple ways (e.g. through a global roll-out of CO_2 pricing). This has sometimes in the past been seen as a negative – in that it constrains certain areas of activity. But building a new green infrastructure will be a positive for many areas, including demand for commodities.

Many economies will be running hot as high levels of stimulus continue to be applied. But this will be a subtly differentiated recovery with a continuing process of readjustment within economies.

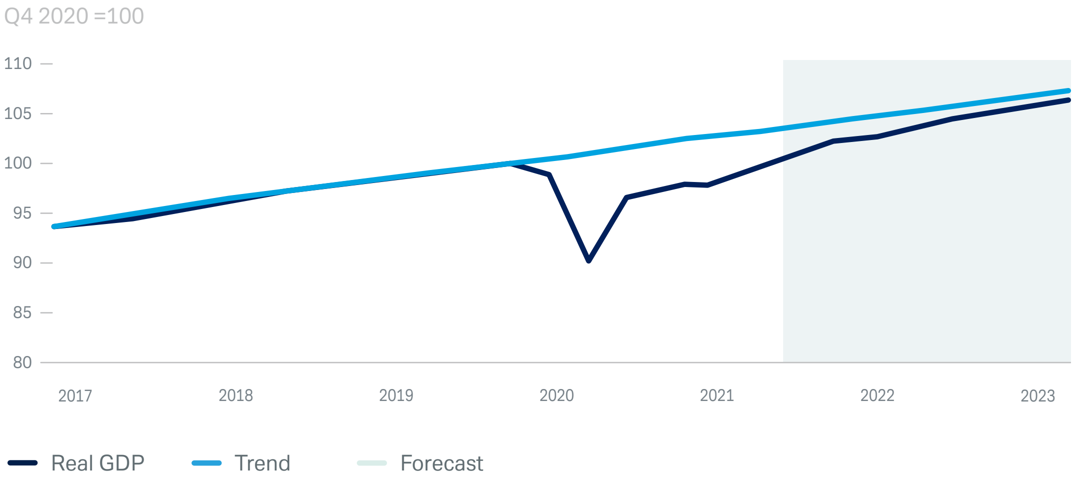
Theme 2. Economy: running hot

Market and portfolio implications:

- Strong growth supports real assets
- Regional growth disparities to impact FX and other asset classes
- Building the green infrastructure a positive for many areas

Figure 3: U.S. GDP soon back on trend levels

Source: DWS, Deutsche Bank AG. Data as of November 2021.



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03

Asia: the eye of the tiger

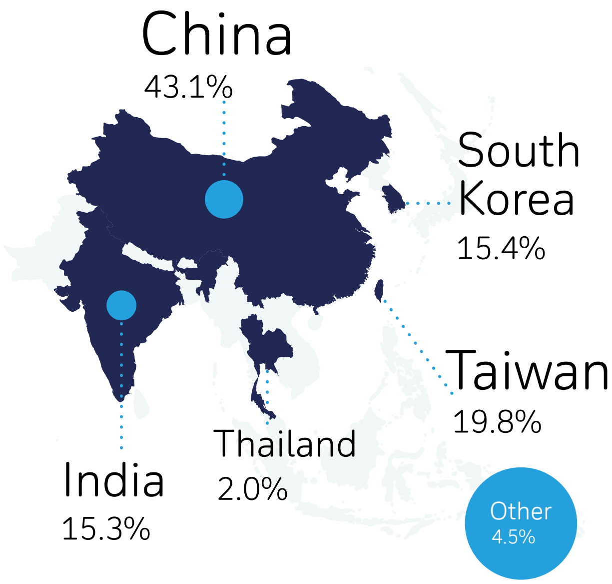
Asia is indeed at the centre of many ongoing issues – e.g. geopolitics (China/U.S./India), supply disruptions (integrated circuits from Taiwan and elsewhere) and the battle against coronavirus. The region's centrality reflects its economic importance and continued economic dynamism. This dynamism will make for an exciting 2022 and this would be our emerging markets focus.

China had a difficult 2021 and many problems remain to be resolved. Chinese growth rates are slowing (see Figure 2), new regulation has been problematic and property sector concerns have cast a shadow over both Chinese fixed income and equity markets. Many of these issues will take time to fix but we are likely to see more stable QoQ growth trends in 2022 – as we move into the new "Year of the Tiger". The authorities will clearly want to have the economy on an even keel before Xi's presumed accession to another presidential term late next year. We have already seen hints of a more flexible attitude by the PBoC and support from both monetary and fiscal measures might become clearer in early 2022. We could also see some eventual rowing back of regulatory measures which would be beneficial for markets – but this is something that could take some time. As is often the case, reforms intended to be positive for long-term growth may hinder growth in the short term.

India has come back strongly from the coronavirus pandemic; estimated GDP growth of over 9% in 2021 is forecast to be followed by a 7.5% expansion in 2022 – comfortably above China's expected growth. Coronavirus appears to be under control, after successive waves, and we see scope for catch-up in both corporate capex and private consumption. Inflation risks remain, but the Reserve Bank of India is expected to move slowly on tightening policy – with real rates likely to remain negative.

Figure 4: MSCI EM Asia – country weights in index

Source: MSCI, Deutsche Bank AG. Data as of November 9, 2021.



Theme 3. Asia: the eye of the tiger

Market and portfolio implications:

- China real estate problems will take time to fix
- But Chinese economic stabilisation will benefit many regional assets
- Indian growth to create investment opportunities

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04

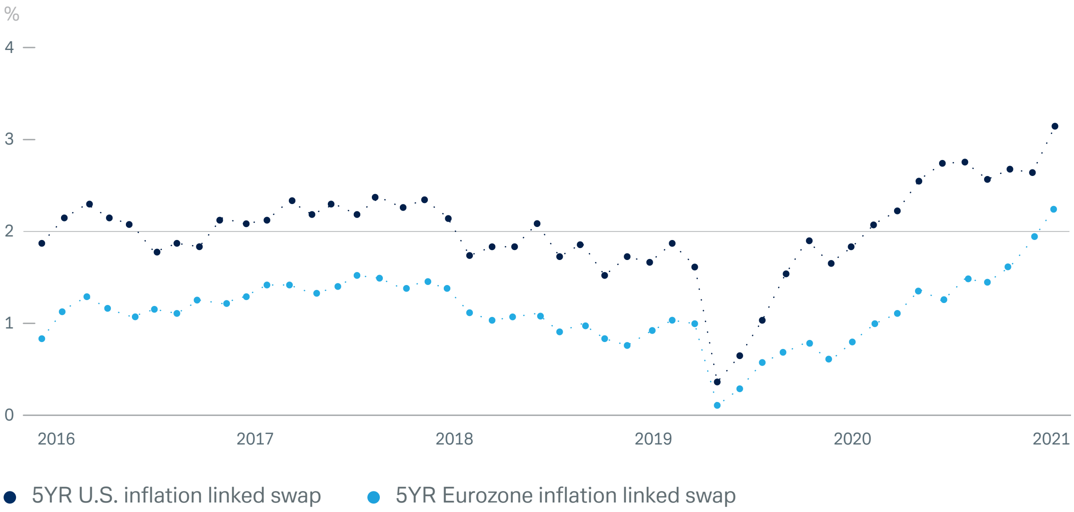
Inflation: the rhino in the room

Misalignment of demand and supply during our current recovery from the pandemic has put pressure on many prices during 2021, with worries about deflation quickly replaced by inflation concerns – taking YoY rates of U.S. CPI above 6% and PPI inflation above 10% in many economies.

Inflation is a serious problem, is already disruptive and contains a number of long-term risks – it really is the rhino in the room. One concern is that higher inflation expectations will start to be embedded in wages settlements (and benefit increases). The spectre of the 1970s – when high rates of inflation were combined with low growth and social unrest – continues to be a ghost in the machine. 2022 is likely to be a crunch year for inflation – where the problem either starts to be resolved or ratchets up a notch.

Figure 5: Inflation expectations in the U.S. and Europe

Source: Bloomberg Finance L.P., Deutsche Bank AG. Data as of November 9, 2021.



There are some reasons to be positive. Cost-push pressures are likely to moderate as global supply issues are largely resolved (by H2 2022) as the world readjusts to different patterns of production and distribution. This will be evident in, for example, reduced cost and supply pressures on integrated circuits and some users of them (e.g. cars). We are also not forecasting a further sharp increase in oil prices over a 12-month horizon. But inflation has multiple drivers. High demand for certain sorts of labour in individual economies (in part due to changes in regional supply chains) is, for example, pushing up wages. At present, on the assumption that YoY rates of inflation start to fall back during 2022, so reducing annual average inflation rates (see Figure 6), the assumption is that inflationary expectations will not become embedded in labour markets – but nothing should be taken for granted.

Inflation is a serious problem but there are some reasons to be positive if inflationary expectations do not become embedded. Cost-push pressures are likely to moderate but inflation has multiple drivers.

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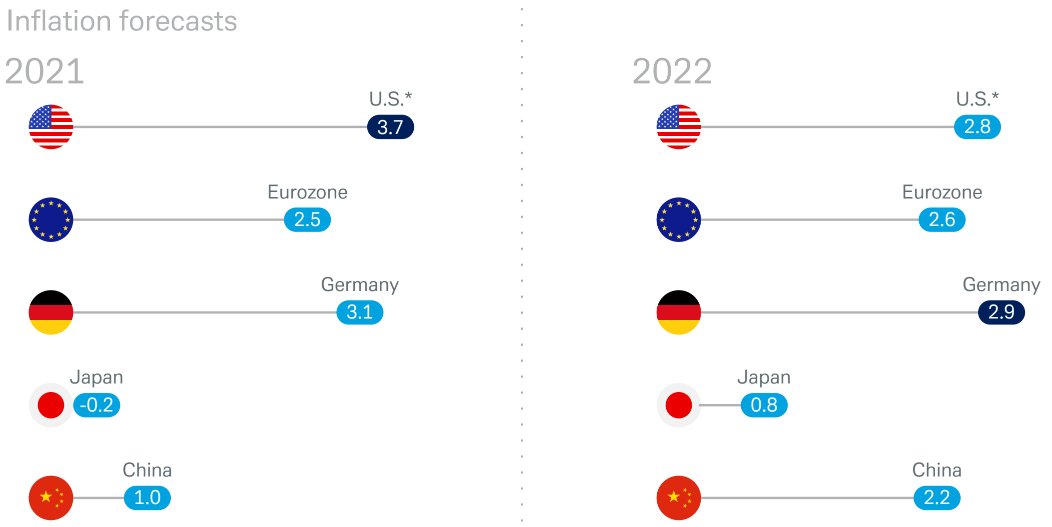
Figure 6: Inflation forecasts

Source: Deutsche Bank AG. Forecasts as of November 18, 2021.



*For CPI, measure is core PCE (Dec/Dec) – average is 3.1% in 2021 and 3.3% in 2022; headline PCE (Dec/Dec) is 4.0% in 2021 and 3.0% in 2022 – average is 3.5% in 2021 and 3.6% in 2022.

But we are not going back to the ultra-low inflation regime of the last decade or so. Inflation rates will remain vulnerable to further disruption as the world readjusts. Regionalisation of supply chains (so-called glocalisation, due to political concerns or simply intended to mitigate against future global fall-out) may continue to add to price pressures. And, over the longer-term, greenflation (price increases due either to environmental measures, or pressures in building the new green infrastructure) will be a significant threat.

From an investor's perspective, differentiating between these various sorts of inflation is important – as they may have varying effects on correlations between asset classes.

Theme 4. Inflation: the rhino in the room

Market and portfolio implications:

- High rates of inflation add to uncertainty around yields
- Greenflation is already a significant issue
- Inflation causes have varying impacts on asset class correlations

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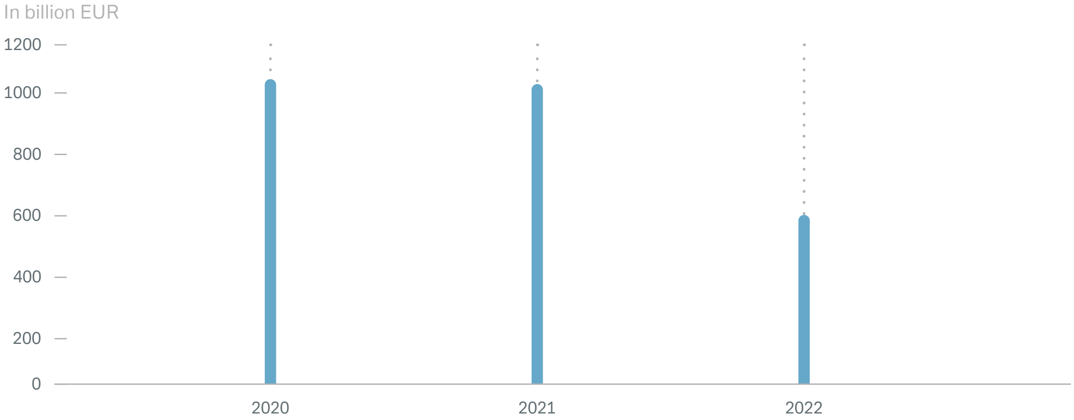
05

Monetary policy: twilight fears

The prospect of higher inflation rates – for several months at least – poses yet another challenge for central banks. It could make managing this twilight world of gentle monetary tightening even more difficult. One problem is that high inflation may make central banks more reactive, and less proactive. They may start to lose control of the narrative. Rather than being able to plot and hold to a policy course out of the problem (as in 2008 and 2020), they have to react to monthly inflation changes, possibly leading market expectations to move significantly out of line with central bank expectations. Such uncertainty could open the door wider to bond vigilantes – markets determined to attack central banks' resolve. Higher bond market volatility would ultimately have implications for equity market volatility and sentiment more broadly.

Figure 7: Overall ECB asset purchases likely to fall in 2022

Source: DWS, Deutsche Bank AG. Data as of November 2021.



For the moment, the Fed appears to be behind the curve on rate rises – and perhaps willingly so. Average inflation targeting removes one reason for moving quickly (in that high rates of inflation can be discounted, at least initially). But deferral of rate rises may mean dealing with an even worse inflation problem in 2023. It may also make it more difficult for markets to judge the likely hawkishness of central banks – our assumption is that they will remain essentially dovish, given the uncertainties around future growth. At the time of writing (December 2021) it seems likely that the end of the Fed tapering process will be followed by a rate rise later in 2022. The overall level of ECB net asset purchases will be reduced in 2022, but a rate hike looks unlikely. The Bank of England, by contrast, may make several rate increases during the course of 2022. The Bank of Japan seems unlikely to make major changes to monetary policy in 2022.

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There are also some more conceptual concerns around monetary policy. There will be continuing questions – after an atypical decade and amidst continued global readjustment – about what exactly is the underlying monetary policy "normality" – in terms of business cycles and the natural rate of interest, for example.

Central banks may also face a broader academic debate about monetary policy and how it relates to fiscal policy. Discussions around modern monetary theory (MMT) may increase, particularly if fiscal deficits remain at high levels.

Although increases in nominal interest rates are expected to be relatively small and real interest rates very low or negative, changing real rates will still have the power to drive country and sectoral relative outperformance and underperformance – creating opportunities and risks.

Deferral of rate rises risks having to deal with an even worse inflation problem in 2023. It also makes it more difficult for markets to judge the likely hawkishness of central banks.

Theme 5. Monetary policy: twilight fears

Market and portfolio implications:

- Inflation may make banks more reactive, adding to uncertainty
- Policy and yields uncertainty opens the door wider to bond vigilantes
- Yields volatility to prompt country and sectoral rotations

06

Fixed income: shifting sands

The world is changing, but financial repression is not going away soon. So the usual caveats apply to any fixed income assessment. Figure 8 sets out our key forecasts.

Figure 8: Fixed income forecasts for end-December 2022

Source: Deutsche Bank AG. Forecasts as of November 18, 2021.

United States (2-year Treasuries)	1.10%
United States (10-year Treasuries)	2.00%
United States (30-year Treasuries)	2.30%
USD IG Corp (BarCap U.S. Credit)	70bp
USD HY (Barclays U.S. HY)	290bp
Germany (2-year Schatz)	-0.50%
Germany (10-year Bunds)	0.20%
Germany (30-year Bunds)	0.40%
United Kingdom (10-year Gilts)	1.25%
EUR IG Corp (iBoxx Eur Corp all)	75bp
EUR HY (ML Eur Non-Fin HY Constr.)	290bp
Japan (2-year JGB)	0.00%
Japan (10-year JGB)	0.20%
Asia Credit (JACI)	275bp
EM Sovereign (EMBIG Div.)	320bp
EM Credit (CEMBI Broad)	290bp

Shifting sands around fixed income – and associated volatility – further reduce the value of the asset class in balanced portfolios. There is also a risk that tapering will lead to co-movements in equity and bond prices (particularly in the U.S. and Europe), so reducing their role as a diversifier. Investors may demand a higher risk/return profile.

For government bonds, we are forecasting only apparently modest increases in overall yields over a 12-month horizon. But this could still have major implications for the government bond market.

But, in a sense, the journey may be as important as the destination. Our end-year forecasts for U.S. Treasuries, for example, assume some overshooting of yields during the year (as growth continues) before risk aversion (e.g. around the U.S. midterms) pushes yields down again later in the year. The shape of the yield curve will be important – both as an indication of what is going on now, and as a view of what will happen next. The yield curve reflects the preoccupations of the different sorts of buyers of different maturities – which may be contradictory.

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The important point remains that returns on developed government bonds are likely to be negative and the prices of these bonds will go up and down – so this is not a "risk free" investment. As in recent years, the question for investors becomes how far you are willing to move out along the risk/return curve to get return.

Investment grade (IG) – both USD and EUR – looks likely to continue to benefit from strong demand from investors. In the U.S., lower gross supply and other factors should keep some technical factors supportive too. Deleveraging and continued central bank buying will support EUR IG. However, the high duration of IG investment (for example vs. HY) adds to the risks associated with rate rises.

In high yield (HY), many fundamentals (e.g. very low default rates) are likely to remain supportive. But it would be unwise to overlook potential risks from higher inflation, changing central bank policy and perhaps less upbeat earnings reports. We currently forecast a slight contraction in EUR HY spreads but expect USD HY spreads to remain at around current levels.

Emerging market bonds had a mixed 2021: higher commodity prices were supportive for many EM economies, IMF support was important and liquidity problems have been avoided. Macro fundamentals are however differentiated between economies, coronavirus problems continue and developments in China cast a long shadow, particularly over Asian high yield (Figure 9). Fed tightening could still cause problems, as could policy decisions in some economies. We have slightly downgraded our 12-month strategic forecasts for EM sovereigns but still expect slight spread tightening. For corporates, we think that resilient credit fundamentals, recovering EM growth and a valuation buffer will mitigate policy and rate risks – some spread tightening is expected.

Figure 9: Asia credit spreads

Source: Bloomberg Finance L.P., Deutsche Bank AG. Data as of November 29, 2021.

Theme 6. Fixed income: shifting sands

Market and portfolio implications:

- "Balanced bear" risks remain with fixed income selling off too
- High duration of investment grade adds to interest rate risks
- Emerging market corporates may appeal more than sovereigns

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07

Equities: real(istic) returns

The equities outlook for 2022 still looks positive – given expectations of continued good economic growth, and the likelihood that central banks will tighten only slowly (so real yields stay negative). Supply chain issues are likely to moderate and most companies have some ability to pass on inflation. And information technology continues to evolve in interesting ways – the digitalisation revolution is not over.

We think that this sets the stage for single-digit earnings growth in most markets on a 12-month horizon (Figure 10). There are several reasons why equities growth will not be as strong in 2022 as in 2021. Economic growth is strong but decelerating towards potential and it is sensible to work on the assumption that valuations have now peaked. Growth in margins is likely to slow sharply and we may be looking at lower (if still historically high) forward price/earnings (P/E) multiples on a 12-month horizon.

Figure 10: Equity index forecasts for end-December 2022

Source: Deutsche Bank AG. Forecasts as of November 18, 2021.

United States (S&P 500)	5,000
Germany (DAX)	17,000
Eurozone (Euro Stoxx 50)	4,600
Europe (Stoxx 600)	510
Japan (MSCI Japan)	1,350
Switzerland (SMI)	13,000
United Kingdom (FTSE 100)	7,350
Emerging Markets (MSCI EM)	1,340
Asia ex Japan (MSCI Asia ex Japan)	885
Australia (MSCI Australia)	1,500

Modest index growth on a 12-month horizon will however conceal important potential sector and geographic rotations within the course of 2022. Rates dynamics will be an important driver (as in 2021) – e.g. in terms of value vs. growth and Europe/Japan vs. the U.S. Broadly, we could see a move from cyclicals in H1 2022 to defensives in H2 2022. Rising (if still negative) real rates may increase the appeal of "short duration" stocks such as banks and cyclicals relative to "long duration" stocks very dependent on assumptions on expected earnings. Such "long duration" stocks can vary from old-style infrastructure to information technology, both established and young, unprofitable technology companies highly valued on expected earnings. Such rotations may also not be completely smooth – spikes in real rates may lead to risky and unstable rotations back and forth between markets and sectors.

Equities are often noted as offering some resilience to inflation, but rising prices and costs will have different impacts in different sectors. Wages growth (the result of labour shortages in some areas due to temporary factors or more structural change) may benefit scalable digital platforms – services could be a loser. High commodities prices would benefit oil and gas and, overall, hurt manufacturing. Transportation costs would benefit shipping and logistics – and hurt firms dependent on supply chains. Pricing power may benefit IT and premium brands – but not help old consumer brands. Figure 11 illustrates historical average annual S&P 500 price returns at different levels of inflation.

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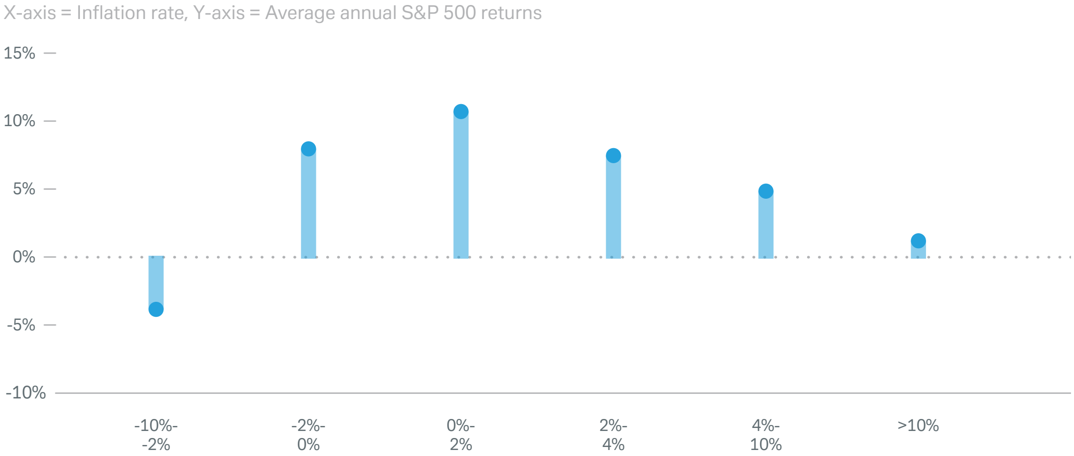
Figure 11: Average annual S&P 500 price returns in different inflation regimes

Source: Bloomberg Finance L.P., Deutsche Bank AG. Data as of November 9, 2021.



Equity strategies will vary over time and between markets but a base case strategy with general validity would be a barbell approach – with "growth"/tech stocks at one end and "value"/banks at the other.

At a geographical level, and despite interest rate worries, there is still a lot to be said for IT and the U.S. market. In the U.S., we are overweight consumer discretionary, financials and IT. We are constructive on U.S. small and mid-caps.

In Europe, many of the signals are good. Multiples have already derated, with price/earnings ratios already back to pre-crisis levels and the region has in the past tended to outperform in periods of higher yields. Aggregate labour cost pressures also appear under control in most economies. One approach might be selective investment in structural growth IT stocks and materials and industrials (which include some cyclical recovery names). Small and mid-cap stocks also look attractive here.

In Japan, the corporate sector could appear attractive. Relative valuations are good and there are hopes that domestic growth will pick up following economic reopening. Companies' balance sheets are good and dividends remained stable during the pandemic. Set against this are low structural earnings per share (EPS) and geopolitical risks from China. Companies are also reluctant to raise prices domestically. All this may keep foreign investors cautious on Japan.

Emerging markets equities had a relatively poor 2021, overshadowed by China. But, while valuations of Chinese stocks may now look attractive after recent declines, caution is still advised in the medium term – given regulation worries, slower Chinese growth, tighter credit and the problems in the real estate sector. After a difficult Q1, we would hope for some improvement later in 2022. Looking forward, we would prefer A-shares and "policy friendly" sectors such as solar, EV, semis, and industrial automation. Latin American stocks are likely to be challenged by continuing questions around inflation, fiscal policy – and a heavy political calendar, notably Brazil's elections on October 2.

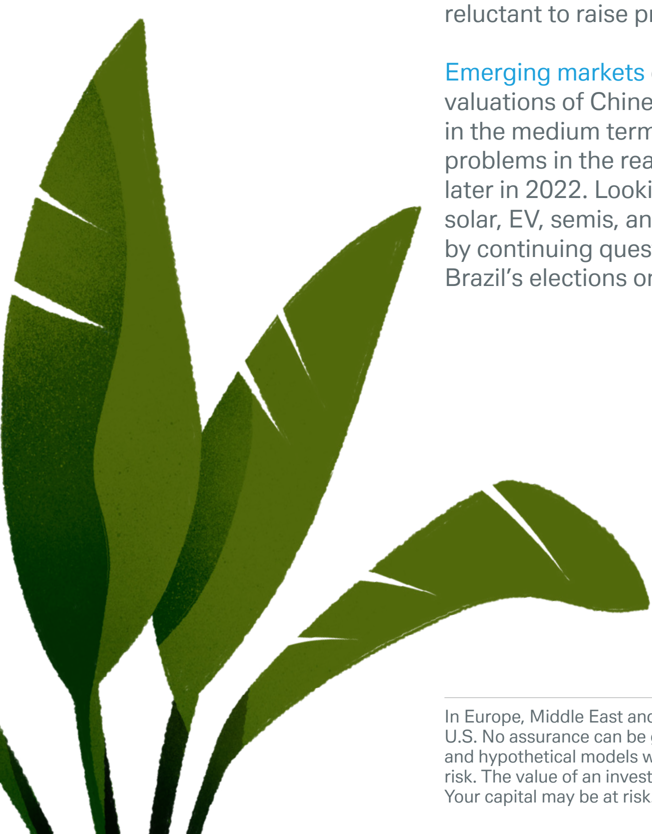


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Figure 12: Equities sectoral and geographic preferences

Source: Deutsche Bank AG. Views as of November 25, 2021. These preferences are likely to change in the course of 2022.

	Europe	U.S.	EM
Energy	Neutral weight	Neutral weight	Overweight
Materials	Neutral weight	Underweight	Neutral weight
Industrials	Overweight	Neutral weight	Neutral weight
Consumer Discretionary	Neutral weight	Overweight	Neutral weight
Consumer Staples	Underweight	Underweight	Underweight
Healthcare	Neutral weight	Neutral weight	Neutral weight
Financials	Overweight	Overweight	Overweight
Information Technology	Overweight	Overweight	Neutral weight
Communication Services	Underweight	Neutral weight	Neutral weight
Utilities	Neutral weight	Underweight	Neutral weight
Real Estate	Underweight	Neutral weight	Underweight

● Underweight ● Overweight ● Neutral weight

Generally, equity market reversals are likely to be short-lived and equity market bears are likely to suffer. But you need to be aware of various potential risks which could lead to bouts of volatility. The most obvious include energy supply (particularly in Europe), ripple effects from the Chinese property sector, a coronavirus resurgence, or much faster rises in rates than expected. Crypto-bursts, major tax rises in the U.S. (unlikely) or a ramping up of tech regulation could also be concerns.

Theme 7. Equities: real(istic) returns

Market and portfolio implications:

– A barbell approach – e.g. “growth”/tech vs. “value”/banks may still be appropriate

– Inflation will have a varying impact on different equities sectors

– Market reversals likely to be short-lived but underlying risks remain

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08

Commodities: green growth

There were big moves in commodity prices in 2021 as economic reopening and geopolitical pressures played out. Oil and gas prices were amongst the most visible.

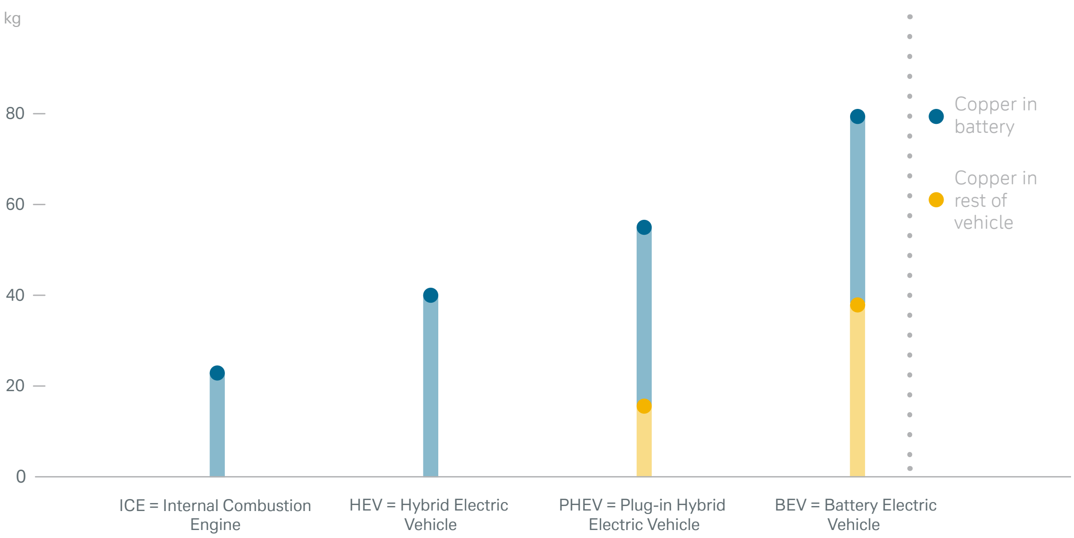
Commodity price volatility may decline in 2022, as economic reopening pressures moderate, but this will not be a stable situation and upward pressures will continue. It is possible to speculate about a new commodities super-cycle.

For oil, we should see limited additional output from OPEC+, particularly in 2022 H2, and production from some members (e.g. Iran) could increase more markedly. U.S. producers are however likely to remain disciplined, driven by corporate finance preferences – meaning that a return to easy supply conditions is unlikely. Given the likelihood of continued strong demand for oil, this means that oil prices may stay around current levels – we forecast a WTI price (12-month forwards) of USD70/b at end-December 2022.

In a broader context, redistributional policies seem likely to bolster overall demand for commodities. It is also worth noting the "green antithesis" – the likelihood that building a new green infrastructure will initially be energy intensive in terms of exploration/building and will also boost demand for industrial commodities such as copper and lithium. ESG pressures and the resulting financial discipline (i.e. restrictions) in energy investments may also provide an upward boost to oil and other prices. An evolving global CO_2 market will also encourage reevaluation of projects.

Figure 13: Copper use in different types of vehicle

Source: Copper Development Association, Deutsche Bank AG. Data as of November 9, 2021.



Commodity price volatility may decline in 2022 but this will not be a stable situation and upward pressures will continue. The "green antithesis" could also initially boost demand for energy and some industrial commodities.

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As always, precious metals need to be treated rather differently. Gold is historically problematic in periods of rising interest rates and had a rather mixed 2021. (It was notable how higher inflation did not translate into higher gold prices, with gold perhaps no longer the obvious safe-haven for some investors.) Despite still high inflation, gold seems unlikely to have a good 2022: we forecast a price of USD1,750/oz at end-December 2022.

Figure 14: Commodity forecasts for end-December 2022

Source: Deutsche Bank AG. Forecasts as of November 18, 2021.

Gold (USD/oz)	1,750
Oil (WTI 12-month Forward, USD/b)	70

Theme 8. Commodities: green growth

Market and portfolio implications:

- “Green antithesis” could boost demand for commodities overall
- Oil supply will remain constrained but prices unlikely to rise significantly
- Gold still not responding to continuing inflation fears

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09

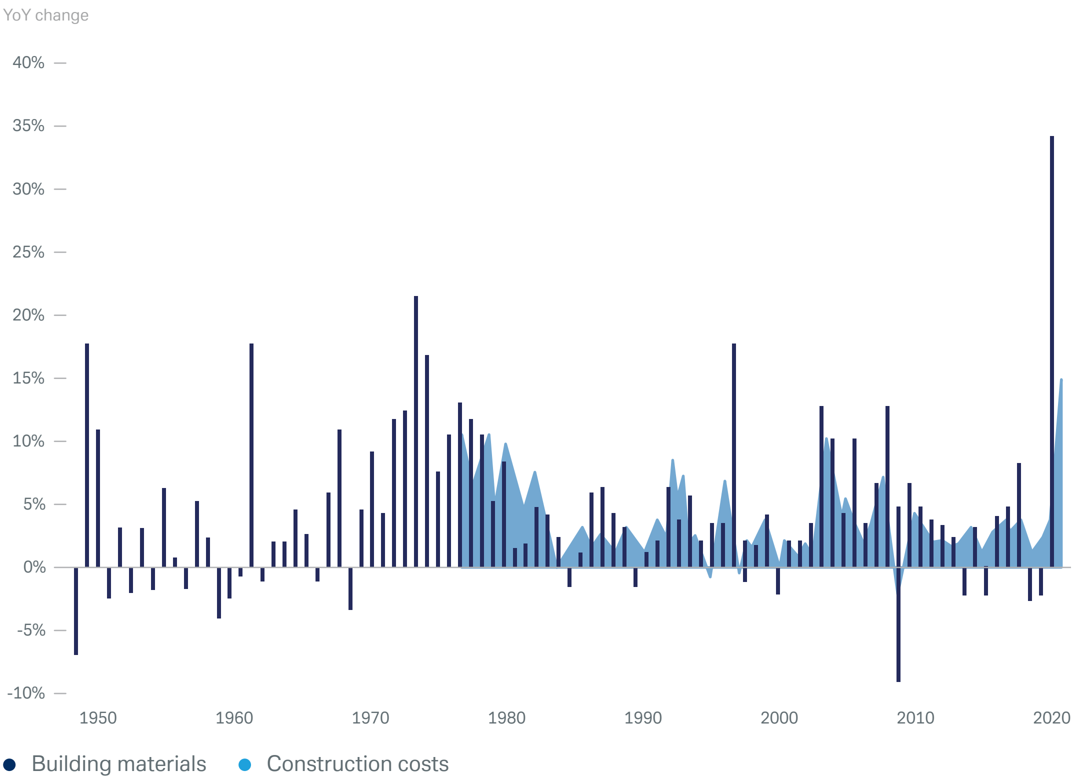
Real estate: still building

2021 was a boom year for real estate in many markets. Many of the fundamental drivers remain in terms of demand and low financing costs will continue to apply. "Cap" rates (essentially, the ratio between the income on a property and the property's value) are low but interest rates are lower. However, there are large variations across geographies and real estate sectors, and there are appreciable risks.

In the U.S., logistics and residential have been the top performing areas recently. Unsurprisingly, offices have been slower to recover than in previous upturns but there are not many signs of distress. Elsewhere, logistics has a been a good performer although retail remains challenged. Listed real estate showed strong growth in the U.S. in the first three quarters of 2021 but much more muted growth in Europe ex-UK.

Figure 15: U.S. construction costs have been rising

Source: Bloomberg Finance L.P., Deutsche Bank AG. Data as of September 2021.



Demographics and growing tech sectors are a factor behind demand. But supply is also an issue. Inflation in building materials costs (up around 30% YoY in the U.S.) and other costs (e.g. labour) may be putting a brake on supply (so supporting prices, everything else being equal).

Theme 9. Real estate: still building

Market and portfolio implications:

- Real estate offers scope for further gains
- Sectoral differentiation is extremely important
- Materials and labour costs impact supply in some markets

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10

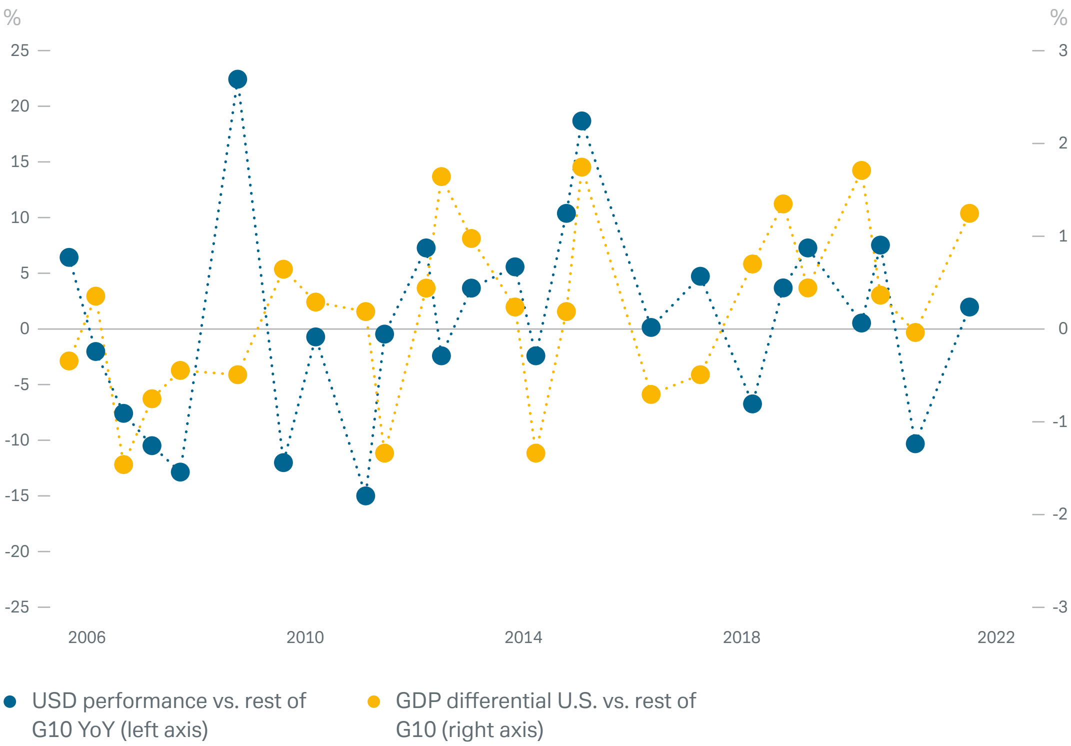
FX: macro matters

In 2021, we saw a shift from major currency pairs being driven by general risk on/risk off sentiment to being driven by fundamentals. Late in the year, worries about U.S. inflation – and the possible consequences of it through bringing forward Fed rate rises – helped drive EUR/USD down and took DXY (the overall dollar value index) to new highs.

What happens in 2022? Relative interest rates are not the only factor and other fundamentals could work against the USD. The growth differential between the U.S. and Europe (and the rest of the G10) may decline slightly in 2022 (although remaining high) – implying less capital flow into the U.S. Strong global growth may also lead to flows into economies that show most catch-up potential (i.e. have the strongest "growth beta"). If these economies manage to close output gaps more quickly, interest rate differentials will be eroded. Many valuation measures (e.g. NEER, REER, OECD-PPP and GDP per capita-adjusted PPP) also suggest that the USD is overvalued, and investors' big long positions in the currency could be run down.

Figure 16: USD performance and U.S./G10 ex-U.S. growth differentials

Source: DWS, Deutsche Bank AG. Data as of October 29, 2021.



All this will take time to have an impact, and we think that USD strength could be maintained into the first half of 2022. But later in the year, we think that the EUR will strengthen, taking EUR vs. USD to 1.20 by end-December 2022.

Our currency forecasts are summarised in Figure 17. In general, despite a slight strengthening of EUR vs. USD, JPY vs. USD looks likely to be broadly stable compared to late 2021 levels. Strong commodity prices are likely to support the AUD, NZD, CAD and NOK although most of their rise may now be behind us.

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Figure 17: FX forecasts for end-December 2022

Source: Deutsche Bank AG. Forecasts as of November 18, 2021.

EUR vs. USD	1.20
USD vs. JPY	115
EUR vs. JPY	138
EUR vs. GBP	0.86
GBP vs. USD	1.40
USD vs. CNY	6.65

Most emerging market currencies may see a slight deterioration in 2022, but some will experience sharper declines due to idiosyncratic events or policy errors. In 2021, many EM currencies were supported by high commodity prices and central bank rate hikes (e.g. RUB, MXN and BRL). With the U.S. now starting to tighten, these currencies may start to lose some advantage over the next 3-6 months. But further rate rises by some emerging central banks will offer support and the effects of slower Chinese growth are likely to be offset by a strong current account, relatively low Chinese consumer price inflation and stable PBoC policy, helping brake a slight decline in the CNY. And the availability of carry will, of course, offer continued support for emerging market currencies as a whole.

Fundamentals will be important for FX in 2022 but interest rate differentials will not be the only factor. Expect some fundamentals to start to work against the USD in 2022.

Theme 10. FX: macro matters

Market and portfolio implications:

- Some fundamentals start to work against the USD during 2022
- CNY decline is likely to be modest, helped by PBoC policy
- EM currencies still appeal as carry source despite Fed tightening

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Portfolios and investment

Think structural

Portfolios need to be built on the assumption that while some interest rates are set to increase, we are not going back to a "normal" situation.

Developed market government bonds are not "risk free" and most corporate bonds will offer low rates of returns.

Moreover, changed correlations between asset classes mean that traditional portfolios (e.g. a 60/40 equities/bonds split) cannot be relied on to provide protection in the event of a market reversal.

At a more granular level, those not taking an ESG approach should also be aware that environmental legislation creates the risk of "stranded assets" – e.g. sectors, firms and operations where asset values decline sharply due to operational restrictions or the switch to newer, greener technology.

01 Intra-asset class strategies. Within asset classes, consider carefully how to invest. For example, within equities one approach might be a barbell strategy overweighting both growth stocks with attractive earnings potential and cyclical companies with attractive earnings recovery potential and solid balance sheets. You could also focus on companies with higher pricing power (i.e. ability to adjust prices of their output in response to changes in inflation).

02 ESG strategies. Consider adopting an ESG approach – which can come in a number of different forms. This may help provide a better risk/return combination (and guard against stranded assets) as well as creating beneficial outcomes.

03 Alternative investments. For some investors, particularly those with a longer time-horizon, alternative investments (e.g. private equity, venture capital, real estate) may be a way to access higher returns, which are also likely to be less correlated with conventional asset class moves. But be aware of illiquidity and risk issues surrounding such investments.

04 Add further risk controls. Multi-asset portfolios may still benefit from additional risk overlays and other approaches (e.g. Risk Return Engineering).

Although some interest rates will increase, we are not going back to a normal situation. ESG strategies, alternative investments and further risk controls will all have a role to play in portfolios in 2022.

A consistent and well thought-through investment approach will continue to be beneficial. One component of this approach may be investments in key long-term themes, as we discuss below.

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Key long-term investment themes

Overall portfolio management can be complemented by investing in key investment themes. These are designed to have long-term relevance and to identify continuing investment opportunities – well beyond 2022.

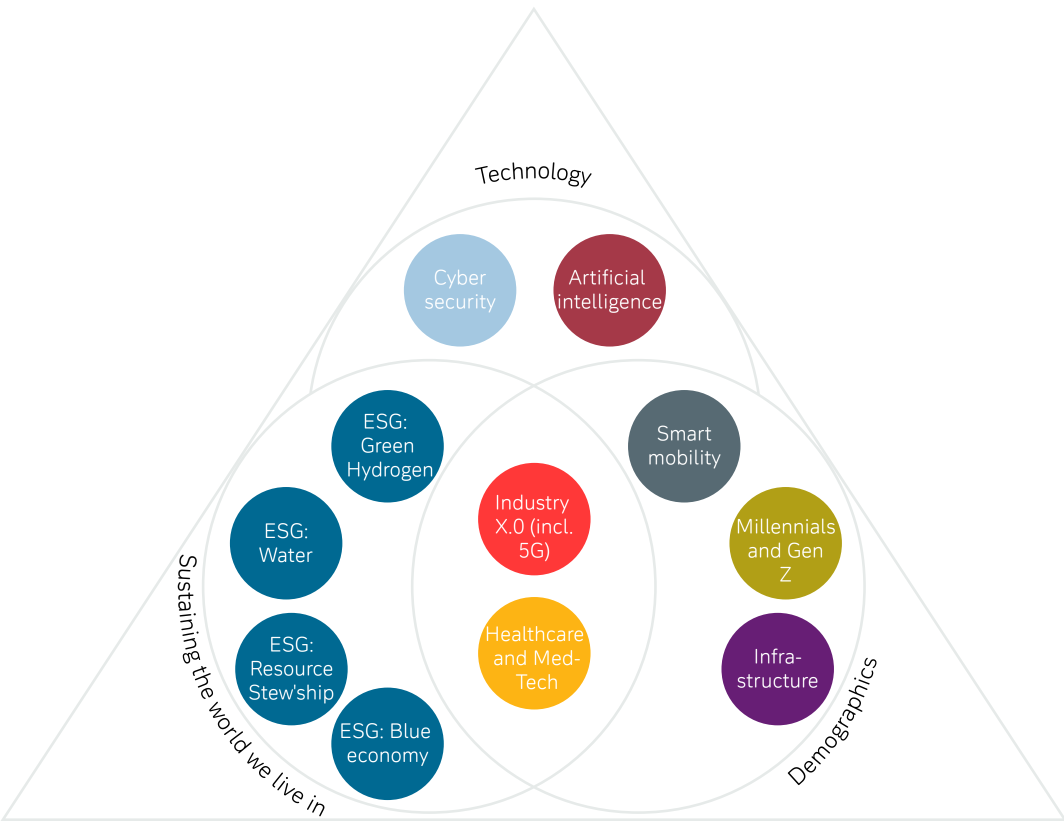
We have been developing our key investment themes for over five years. They can be visualised as sitting within what we call the TEDS triangle – bounded by the three dimensions of technology, demographics and sustaining the world we live in.

Environmental, social and governance (ESG) investing has become increasingly central to the investment universe. One of the ten investment themes below is ESG and we highlight four interesting long-term ESG sub-themes.

In reality, of course, ESG considerations permeate all of the themes below, including those with a clear technology or demographics focus. COP26 in Glasgow in November highlighted how ESG is now defining economic reality, in terms of how we live and how companies and governments will respond to environmental challenges. The immediate focus may be on the "E" (environmental), but this will imply major changes for the "S" (social) and "G" (governance) components too. Environmental pressures will be accompanied by social and governance pressures as economies and sectors restructure to address multiple dimensions of change.

Figure 18: The evolving TEDs triangle

Source: Deutsche Bank AG. Data as of December 2021.



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ESG

Global temperature worries will be accompanied by biodiversity concerns: COP26 was just part of a long process. Progress on taxonomy and standards is likely and will be increasingly expected and required by investors: “greenwashing” concerns will help investment transparency and performance reviews. Focus may shift to positive contribution approaches and comprehensive impact assessments. Growing awareness of impact of green transition on increasing inflation levels. Financial innovations will continue, with global green bond issuance of USD400-500bn in 2021, nearly double the 2020 level.

ESG sub-themes

ESG Blue Economy

Continued ocean degradation through climate change and pollution means that a shift to more sustainability is increasingly necessary, particularly in rapidly expanding ocean sectors. The United Nations Sustainable Blue Finance Initiative and EIB Blue Sustainable Ocean Strategy have been launched. “Blue Economy” investment initiatives include funds and bonds for marine conservation but there will be continued calls for better investment criteria, taxonomies and stakeholder networks. Public-private partnerships may be important to address projects with uncertain returns.

ESG Hydrogen

Environmental concerns and commitments will maintain focus on developing hydrogen sources. "Green" hydrogen remains a potential way to decarbonise parts of the economy that cannot be reached by electrification alone (e.g. chemical and steel production) but this remains a long-term hope/solution. It is unlikely to become economically viable for several years, even though costs of electrolysers and renewable energy sources used to produce hydrogen are declining. Short-term progress is likely to remain uncertain, despite national strategic commitments.

ESG Resource Stewardship

The pandemic added to global waste, and not just through medical equipment disposal. Packaging use also increased while recycling plants stopped running in emerging economies. Climate change and the global waste problem are intertwined, so awareness of governments, companies and individuals will increase. Government efforts need to focus more on real impact, not media-friendly quick fixes. Developed world policy may need major improvement (e.g. EU approach to residual waste) and large investments in technology are needed, with implications for investors.

ESG Water

Continued population growth, urbanisation and higher living standards in emerging markets will increase demand and opportunities across the entire water sector (recycling, desalination, industry, agriculture etc.) often via public/private partnerships. Earmarking of USD55bn for water investments in U.S. infrastructure plans and EU members’ water plans will get assistance via the NextGenerationEU package. Prospect of rising interest rates could weigh on defensive sectors (e.g. utilities) and fiscal pressures could slow disbursements of water infrastructure public funds.

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Artificial intelligence (AI)

AI is likely to grow in importance. The AI theme has shown adaptability to changing societal needs and is an enabler of other technologies (e.g. in the field of digital business). Concerns centred on implications of AI "success" not "failure" (e.g. worries about employment implications, mass surveillance). AI could provide opportunities for emerging markets to leapfrog developed markets in some areas. In the immediate future, AI development will potentially be hindered by the ongoing lack of semiconductors/chips, but acceleration of AI in healthcare is expected to continue. Machine learning (ML) likely to remain main direction of AI funding.

Cyber security

There is a continuing need for improved cybersecurity – for example, to protect critical infrastructure, increasingly sophisticated connected mobility systems and more digitalised healthcare systems. Growing retail e-commerce sector, inter alia, is likely to need more security, and there is an increasing interest in use of artificial intelligence to improve security systems. Home working may have increased risks. Surveys show data breaches are at a new high, with healthcare badly affected.

Healthcare and MedTech

Ageing populations and increasing incidence of infectious and chronic diseases, as well as the pandemic, are maintaining pressure on healthcare and disease prevention systems. Medical devices are increasingly used for home-based diagnoses and treatment and growth here is expected to continue. Digitalisation, robotics and remote technologies add to options for delivering healthcare. COVID-19 related supply disruptions could however continue to lead to short-term dislocation.

Industry X.0 (including 5G)

Further advances around artificial intelligence (AI), 3D printing and robotics are moving us towards Industry X.0. 5G rollout will continue to increase device connectivity, raise prospect of flexible manufacturing across multiple locations and lead to additional applications. Supply chain pressures (especially for semiconductors) are expected to ease markedly in H2 2022 but other pressures for industrial restructuring will continue, as firms use digitalisation and automation to meet strong recovery demand.

Infrastructure

Infrastructure is increasingly recognized as the thread that connects multiple issues, with a need to update traditional infrastructure as well as upgrade contemporary systems (e.g. via data centres, fibre networks, telecom towers, smart grids). Much pandemic recovery spending focused on physical, digital and green infrastructure with hopes this could help address climate change and other worries. Public/private partnerships are likely to be in focus around larger projects in the EU and the U.S.

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Millennials and Generation Z

Millennials and Generation Z remain important in terms of population and political power, despite so strategies focused on millennials' consumption patterns (e.g. technology, entertainment) should benefit in the long term. But many millennials-relevant stocks remain vulnerable to anticipation of interest rate rises. Large-cap tech stocks also could be liable to increased regulation given market position fears. Fiscal stresses could increase millennials' taxes and other payments, limiting spending.

Smart Mobility

Growing interest in smart mobility and technology angles of 5G, AI and cybersecurity. Climate concerns continue to drive car electrification, but risks remain around development and regulation. Charging infrastructure is both an opportunity and a risk. Higher oil prices and lower battery prices encourage electric car adoption (but note also increase in electricity prices). Advances likely on connectivity (5G), autonomous driver solutions (AI) and shared mobility. Sector is not immune to global supply chain difficulties (e.g. around integrated circuits).

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Glossary

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

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

Beta measures the volatility of an individual security or sector versus the overall market. Lower beta implies lower volatility.

Chinese A-shares are shares of mainland companies, with limited accessibility to foreign investors.

COP26 was the 26th UN Climate Change Conference, held in Glasgow in late 2021.

ESG investing pursues environmental, social and corporate governance goals.

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

The EuroStoxx 50 Index tracks the performance of blue-chip stocks in the Eurozone; the Stoxx Europe 600 includes 600 companies across 18 European Union countries.

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

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.

Nominal effective exchange rates (NEER) are average exchange rates, weighted according to trade values; real effective exchange rates (REER) are additionally adjusted for differing inflation rates.

NextGenerationEU (NGEU) is a major EU recovery plan, based around grants and funds, running from 2021-2023.

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.

Purchasing power parity (PPP) refers to the theoretical exchange rate at which you can buy identical baskets of goods in two countries at the same cost.

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

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

Tapering, in a financial markets context, refers to the gradual reduction of asset purchases by central banks.

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

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

West Texas Intermediate (WTI) is a grade of crude oil used as a benchmark in oil pricing.

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