

Markets and Trends 2022

All-inclusive recovery

Research & Advisory, November/December 2021



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Editorial date: 16 November 2021



Editorial

In 2022, the global economy is set to embark on a new journey. Where will it be going and, more crucially, what kind of journey will it be taking us on? Have our suitcases been packed sustainably and will we be going on an all-inclusive recovery, the worst vacation ever or a dream trip?

I hesitate to say so, but Covid-19 will still be with us in 2022, although the virus is unlikely to totally have us in its grip any longer. We are able – or rather allowed – to move around again. People are venturing out into the world, whether for business or pleasure, albeit not as frequently as before Covid. Gradually, the joys of discovering and experiencing new things, seeing the world from a different perspective, meeting others, being inspired and inspiring ourselves is returning to our everyday lives.

This newly regained freedom to travel not only changes the way we interact but also the composition of our national product and has an impact on economies and capital markets. That is why we have chosen the metaphor of travel for our 2022 annual economic outlook scenarios. The question is, though: What kind of journey will we be embarking on in 2022? Will it be sunshine all the way or will our trip be marred by dark clouds on the economic horizon? What destinations will we be setting our sights on and which ones will we actually reach? Who is accompanying us on this adventure and just how harmonious will our mutual travel experience be?

„To travel is to evolve“

Pierre Bernardo

Anyone who sets off on a journey is prepared for new experiences. Yet, some are afraid of the unknown and some want to know what to expect and plan everything in advance. Others, meanwhile, are impulsive or simply let themselves go with the flow. Just like when it comes to travelling, economies

also have different preferences. This applies to many aspects and, in free (market) countries, people's individual preferences are accommodated as long as they do not violate the freedom of others.

Sustainability is coming along – even in Helaba's Economic and Capital Market Outlook 2022

It is the state's role to intervene with regulatory or framework-setting measures when dealing with externalities. For a long time, the externality of CO₂ emissions was neglected but climate change is becoming an increasingly obvious threat, with the result that sustainability has entered the economic and social policy agenda of many countries. However, there are still big differences of opinion as to exactly how to tackle this issue. Travel plans and roadmaps for reducing carbon emissions are being drawn up that vary from one country or political affiliation to another. Yet almost everywhere, there is a palpable sense that we are embarking on a new journey. Many people are packing their bags and heading for a more sustainable world.

Our Economic and Capital Market Outlook 2022 is also heading in a new direction: we have supplemented the asset class and country analyses with specific aspects of sustainability. Furthermore, we have now added a dashboard with a variety of sustainability indicators for the countries we examine. Finally, our annual outlook is no longer being issued as a print version; instead, it is published online together with many videos that will be available for you to watch over the next few weeks.

Baseline scenario: All-inclusive recovery

Having endured a severe recession in the spring of 2020, the global economy has since picked up speed despite some intermittent periods of disruption. Pent-up demand and accommodative monetary and fiscal policies have made huge contributions to the recovery. In other words, countries find themselves in an upturn that has been underpinned by, as it were, all-inclusive stimulus packages from central banks and governments. This recovery is set to continue in 2022 and will keep on boosting labour markets.

With low interest rates, nobody wastes much time asking who is paying or where exactly those responsible are spending the money – just like with an all-inclusive holiday. The packages available are extremely varied and many people feel drawn to them; others wonder where to start with the plethora of activities and extras on offer around the clock. Since everyone is paying the all-inclusive price, some will be charged for goods and services they either do not need or want.

Queues and price hikes thrown in

Much like with travelling, not everything in this recovery is the same as the claims made in the brochures. Disruptions to supply are comparable to queues at buffets, at sun loungers, at the bar, in a museum or at other attractions that are part of the all-inclusive package. There are too many people trying to grab something at the same time and, in many cases, taking too much because it is supposedly free of charge. Supply cannot keep up with demand anymore and shortages are commonplace. Bottlenecks in raw materials and logistics will be part and parcel of our lives in 2022 as well. They will slow down the economic recovery and drive up prices.

“Traveling is like gambling: it is always connected with winning and losing, and generally where it is least expected we receive, more or less than what we hoped for.”

Johann Wolfgang von Goethe

If you spend your holiday enjoying a gentle breeze on the beach or on the water, you might perceive the blazing sun as a pleasant sensation even though it has long since become too hot. As the day draws to a close, you realise that sunburn is inclusive, too. Likewise, it seems that some central banks have not yet realised that basking in too much monetary sunshine for too long is fuelling inflation.

Be aware of potential for conflict

Besides sunburn, other things are often included in a holiday that were not listed in the brochure, from bugs in the hotel room to a spat with the person on the next table or in the next room. Beyond the risks of inflation and an overheating economy, geopolitical tensions between the trio of the United States, China and Europe as well as within the EU will be another unwelcome extra thrown in for good measure.

But since we are all in the same boat, bus, train or plane when we travel, we have to learn to look out for each other more – because we can only create a more sustainable world by working together. So, the tour guides would be strongly advised not just to put on a show but to really lead the way with a constructive programme. Given the fact that public finances are, in many cases, strained to the limit and that key sectors of the economy, such as construction, are operating at full capacity, the investment needed to achieve this is fraught with potential for conflict. Faced with limited resources, the efficient and targeted use of funds should therefore be the defining criteria for any measures that are taken. These are the challenges in our baseline scenario "all-inclusive recovery".

Overview of scenarios: Probability of occurrence



Source: Helaba Research & Advisory

Negative alternative scenario: Worst.Vacation.Ever.

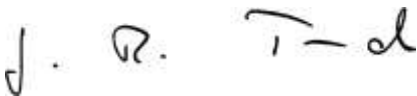
Generally speaking, our worst holiday memories are not of journeys during which one single thing goes horribly wrong. It is usually a combination of multiple factors that make us wish we had never had this experience in the first place. Extremely negative phases of the economic cycle are similar: typically, external shocks, existing problems or imbalances as well as policy missteps combine to take the economy and financial markets with them on the worst vacation ever in our negative alternative scenario.

Positive alternative scenario: Dream trip

If enormous challenges are accompanied by equally great opportunities then it has been a long time since the global economy last enjoyed such a bright outlook as was the case following the shock of the pandemic. In our positive alternative scenario, the world's economies set off on a dream trip together. The low-carbon transformation of our societies holds out the prospect of lasting improvements. Public and private investments have seldom promised such a high "return" as they do today, not only because they are ultimately the key to solving the bottleneck dilemma.

Join us on this voyage to discover the outlook for the economy and capital markets. After all, travelling broadens your horizons. In this spirit, I hope 2022 turns out to be an enlightening and successful year for you.

Yours

A handwritten signature in dark ink, appearing to read 'J. R. Traud'.

Dr. Gertrud R. Traud
Chief Economist/Head of Research & Advisory

PS:

Did you notice something at the beginning of the editorial? Perhaps it takes a second glance to recognise me in my old green 2CV. I have fond memories of holidays spent criss-crossing Europe in what was considered a sustainable vehicle at the time.



Baseline scenario: All-inclusive recovery (75 %)

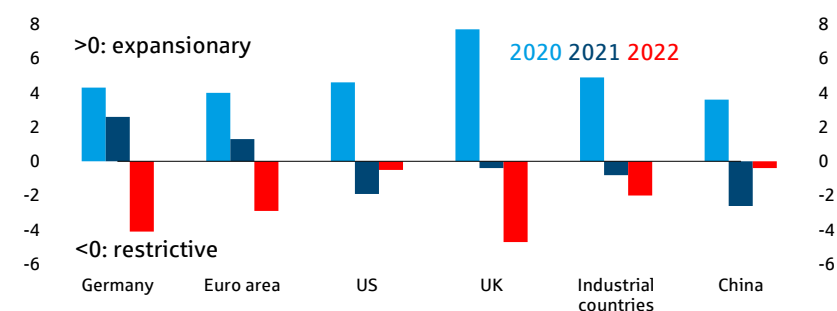
The global economy continues to move along the road of recovery from the shock of the pandemic. Just like the contraction preceding it, this rebound is highly unusual. This time supply bottlenecks and increasing inflation pressures, which are normally late-cycle phenomena, have been part of our baggage almost from the outset. What is more, the demands have become more stringent. A simple recovery alone is not good enough anymore; now, it also needs to be as "sustainable" as possible.

Like a sheet of rain pushed aside by the wind during a hiking trip, Covid-19, which so far has been the dominant factor obscuring everything else, is now gradually receding to reveal the landscape behind it: the post-pandemic global economy. However, despite the sun's rays breaking through the mist, our view is still rather hazy and unclear. Whether the scene that is emerging ahead of us is appealing or not is mostly a question of perspective. In any case, there is something for everyone. Optimists can look at progress in the vaccination drive, a further easing of current restrictions and a return to normal consumer spending habits. Excess savings that households accumulated in 2020/2021 should support the economic recovery. Initially, growth in the major industrialised countries will be significantly above trend and the situation on labour markets will improve.

However, the outlook also has plenty to offer the pessimists: widespread bottlenecks in raw materials, intermediate products and logistics will continue to plague us in 2022 as well. They will put the brakes on economic growth and their direct consequence – higher inflation – will erode real incomes and depress consumer sentiment. In global trade policy, a change of power in Washington may have resulted in a more civilised tone, but almost all of former President Trump's punitive tariffs are still in place. In this respect, 2022 is unlikely to provide much in the way of positive momentum. In the background, the peaks of the mountains of public debt loom large.

Expansionary fiscal policy a thing of the past

Fiscal impulse*, % of GDP



*change in cyclically adjusted public budget balance. 2021/2022 based on estimates by the IMF.
Sources: IMF, Helaba Research & Advisory

The green transition is coming!

It is obvious to everyone that sustainability and the political realisation of transitioning to a zero-carbon economy will be enormous issues in 2022, and that applies beyond Germany and its new government. Just as with any abrupt change in direction, there is an increased risk of accidents, regardless of whether you take the right path or not. Decarbonising the economy is an immensely complex endeavour that, if mistakes are made, may result in painful damage to growth and wealth. Given the fact that public finances are, in many cases, strained to the limit and that key sectors of the economy, such as construction, are operating at full capacity, the investment needed to achieve climate goals is fraught with potential for conflict. Faced with limited resources, the efficient and targeted use of funds should therefore be the defining criteria for any measures taken. In addition, governments will have to make unpopular decisions on who should ultimately pay for the spending these policies will require. Should German taxpayers also shoulder the costs of reducing greenhouse gases in other, more hesitant countries?

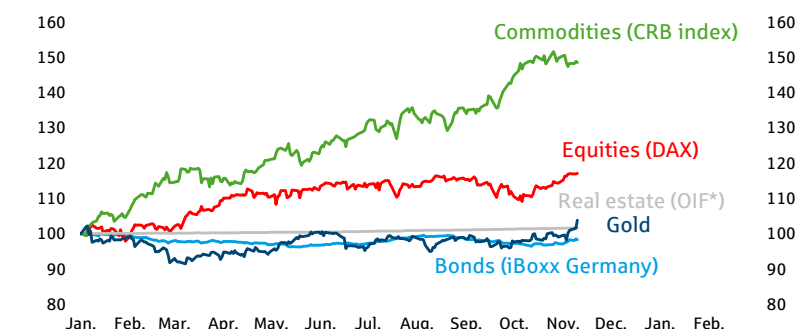
In terms of policymaking, the prevailing zeitgeist of declaring all kinds of expenditure, even if they clearly represent consumption, as "investment" and sticking a label of "sustainability" or "digitisation" on virtually everything is not particularly helpful. In the medium term, this "inflation of terminology" could well prove counterproductive. In any case, the quality and effectiveness of political initiatives to bring countries closer to a more sustainable economy will be a crucial factor in determining sentiment in 2022, not just on the financial markets.

Economic policy on the rocks

In this respect, the current room for manoeuvre of monetary and fiscal policy, both of which have already deployed most of their usable instruments in the last few years, is not the least of governments' problems. Efforts to stimulate and stabilise the economy served the public well in the pandemic, but they make it almost impossible to inject any new economic stimuli in the short term. Even if a considerable sum of money were to be spent on climate policy as early as 2022, with most industrialised countries already having run up record deficits in previous years, fiscal policy is having a restrictive effect and is a drag on overall economic growth.

Commodities even outperform equities by wide margin

Indexed, 31 December 2020 = 100, total return in euro



*Helaba's index for open-ended real estate funds (OIF)

Sources: Refinitiv, Helaba Research & Advisory

This is perfectly acceptable, as are moves towards a more normal monetary policy. After all, saying that the economy no longer needs the support of this policy toolbox would be a major understatement. On the contrary, expansionary economic policies have whipped up demand to such an extent that supply simply cannot keep pace. Critical shortages are now causing a surge in inflation, the likes of which have not been seen in many places for decades. Cynics

might argue that, just like Goethe's sorcerer's apprentice, fiscal policymakers and central bankers are now confronted with the consequences of their experiment and are in danger of being effectively swept away by the liquidity they have collectively created. So far, the major central banks have cut a particularly poor figure in this respect.

"Inflation is as violent as a mugger, as frightening as an armed robber and as deadly as a hit man."

Ronald Reagan

One reason for their relatively impotent response is most likely that, for a long time, economic policymakers, central bankers and academic economists have only treated insufficient demand rather than supply-side shortages as a plausible scenario.

That is why central bankers in both Washington and Frankfurt will be keeping their fingers crossed that inflation does

not permanently settle well above 2 % and that second-round effects from higher wage demands do not trigger an inflationary spiral similar to that of the 1960s and 1970s. Further higher-than-usual inflation in 2022 will be painful enough, especially in light of the fact that nominal interest rates are still exceptionally low.

Overview of forecasts in the baseline scenario

As the world approaches conditions closer to normal, **economic growth** will naturally ease off. The catch-up process since the historically sharp contraction of 2020 has made substantial progress. However, momentum in the major industrialised countries will remain above trends. While the euro area will post a growth rate of close to 4 % in 2022, below that of the previous year, the pace of recovery in Germany will accelerate from just under 3 % to 4 %. We expect the US economy to expand by 4 %, following 5.5 % in 2021.

Oil prices should largely move sideways to marginally downwards in 2022. This will dampen **inflation** over the course of the year. Even though bottlenecks will remain an issue well into the year, they should tend to ease over time. In the euro area, consumer prices will see a similar average year-on-year increase of 2.4 % in 2022 as in 2021. In Germany, inflation should be slightly up on the previous year, at 2.7 %. We look for the US consumer price index to rise by 4 %, still quite a bit more than normal.

Despite strong growth and high inflation, the world's major **central banks** move only at a glacial pace. The Fed probably will not raise key rates until the autumn of 2022, after it has terminated its asset purchase programme. The ECB will taper its bond purchases but will not make any changes to the key interest rates.

Selected forecasts for 2022

Euro area



GDP growth, %	3.9
Inflation, %	2.4

Q1 -Q4

Deposit rate, %	-0.50	-0.50	-0.50	-0.50
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USD / Euro	1.20	1.15	1.15	1.20
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EURO STOXX 50, index value	3,950	4,350	4,250	4,200
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Source: Helaba Research & Advisory

German



GDP growth, %	4.0
Inflation, %	2.7

Q1 -Q4

3M Euribor, %	-0.50	-0.50	-0.50	-0.50
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10y Bunds, %	0.00	0.10	0.15	0.20
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DAX, index value	15,000	16,500	16,200	16,000
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USA



GDP growth, %	4.0
Inflation, %	4.0

Q1 -Q4

Federal Funds Rate (mid-point), %	0.13	0.13	0.13	0.38
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10y Treasuries, %	1.70	1.80	1.90	2.00
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S&P 500, index value	4,200	4,600	4,500	4,400
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As experience has shown, **bonds** fare badly in an inflationary environment and prices are set to decline again next year. However, central banks will presumably have a moderating effect on this fall, which is likely to be kept in check. Despite this, 10-year German Bund yields will depart from negative territory and settle at around 0.2 % by the end of 2022.

Increasing private sector growth will spur the funding activities of **corporates**. Expectations of a more restrictive ECB policy will lead to higher risk premiums. **Banks** will emerge from the crisis in fairly resilient shape and will therefore be able to resume paying out surplus capital. The focus will shift to the interest rate environment and the prospect of higher profits from excess deposits and liquidity portfolios. High-quality **covered bonds** will benefit from a strong level of new mortgage lending by banks and primary market volumes are expected to increase in 2022. Despite declining interest from central banks, spreads will remain well supported with maturities outstripping supply, yields rising and investors returning to the market.

Given the records that have meanwhile been hit, high valuations and ongoing uncertainties, such as those regarding the pandemic, we anticipate an initial correction on **equity markets** followed by a phase of sideways trading amid high volatility over the further course of the year. Towards the end of 2022, the DAX should have returned to a level of around 16,000 points.

"By wisdom a house is built, and by understanding it is established; by knowledge the rooms are filled with all precious and pleasant riches."

Old Testament. King Solomon's sayings (Proverbs 24:3)

Real estate will continue to benefit from low interest rates. This asset class has weathered the crisis in good shape and will resume its recovery in 2022. While structural shifts such as e-commerce and the increasing popularity of working from home will act as a brake on the commercial segment, the upward trend in residential property will continue unabated with brisk demand and a shortage of supply.

Despite higher inflation risks, 2021 was a loss-making year for **gold**. It is unlikely that any reversal in its fortunes will occur in 2022. Competition from equities and rising nominal rates will remain. Nevertheless, gold should be able to maintain a level of around 1,800 US dollar (1,510 euro) per troy ounce, as the new year's hand luggage will include worries over inflation coupled with uncertainties about economic growth.

Although the coming interest rate lift-off by the US Federal Reserve fundamentally supports the **US dollar**, the greenback's yield advantage is limited. Since foreign exchange markets have already priced in a lot and longer-term factors are stacked against the US currency, on balance the dollar will barely appreciate at all. The euro-dollar exchange rate is likely to be trading at around 1.20 by the end of 2022.

Patrick Franke



Monetary policy: ECB lets Fed take the lead

Many central banks have recently raised their key interest rates; in contrast, the ECB and Fed are playing for time. The Federal Reserve is likely to take the first step in the autumn of 2022.

The second year of Christine Lagarde's tenure as President saw the ECB sticking to its accommodative stance, with its balance sheet rising by 20 % after ballooning by 50 % in 2020. In adopting a strategy based on a symmetric inflation target, it simultaneously adjusted its monetary policy reaction function, making a temporary increase in inflation tolerable. It is against this backdrop that the ECB is playing a waiting game, hoping that there will be a tangible fall in inflation.

The willingness among a number of members of the ECB's Governing Council to make financing conditions less generous is not especially pronounced. They are staring at mountains of debt in their home countries and the need for epoch-making funds to address climate change and invest in the future. These ambitious goals would be jeopardised by higher borrowing costs combined

%	Q1/22	Q2/22	Q3/22	Q4/22
3M Euribor	-0.50	-0.50	-0.50	-0.50
ECB Main Refinancing Rate	0.00	0.00	0.00	0.00
Fed Funds Target Rate	0.13	0.13	0.13	0.38

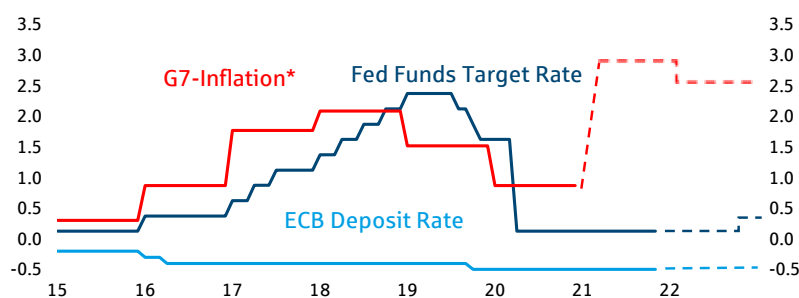
Source: Helaba Research & Advisory

with a sharp increase in prices due to inflation. For this reason, the ECB's agenda for next year does not feature a hike in key interest rates.

Even so, if it wants to retain some credibility the ECB should at least taper the pace of asset purchases in 2022. The ECB portfolio will grow by around 1.1 trillion euro in 2021 as a result of its two bond purchase programmes (APP and PEPP). The large-scale PEPP mechanism is only scheduled to run

Sluggish monetary policy response functions

% respectively % yoy



* aggregated annual rates of the G7 industrialized countries
Sources: Refinitiv, Helaba Research & Advisory

until the end of March 2022. Should the ECB then slam on the brakes, there is a risk of a loss

“A stability-oriented monetary policy will only be possible in the long run if the regulatory framework of Monetary Union continues to ensure the unity of action and liability, monetary policy respects its narrow mandate and does not get caught in the wake of fiscal policy or the financial markets”.

Bundesbank President Jens Weidmann, October 2021

s of control with the potential for domino effects hitting bonds, equities and real estate. Therefore, the ECB is likely to opt for a flexible successor instrument or an expanded APP.

Fed: Only relatively “fast”

The bond-buying programme in the United States is set to wind down around the middle of the year. So far, despite high inflation, the Fed has not indicated it is in any rush to hike interest rates in the near term. Full employment should be achieved in the course of 2022 and inflation is running considerably above target. In view of this, we expect the first interest rate hike since 2018 in the autumn of 2022. Nevertheless, we are probably still many years away from a restrictive monetary policy with positive real interest rates in the United States as well, irrespective of whether the current Fed

Chairman is confirmed for another term or not. While easy monetary policy will support the economy, risks to the stability of financial markets arising from excessive liquidity will not diminish over time – in fact, the opposite is more likely to be the case.

Ulf Krauss, Patrick Franke



Government bonds: Cyclical rise in yields with handbrake on

Elevated inflation suggests that capital market rates in the euro area should rise sharply. However, as the guardian of the low-rate environment, the ECB will resist any such trend.

Just as feared, the yield on bonds in 2021 has been negative with 10-year German Bunds losing around 3 % in value since the beginning of the year. However, yields are heading back into positive territory and should gravitate towards a level above 0 % in 2022. Stronger economic growth combined with elevated, albeit declining, inflation rates and an increase in government debt set the stage for a tendency towards a steeper yield curve.

Following a similar pattern to 2021, signals from the US bond market will tend to exert downside pressure next year. The US Federal Reserve will taper its asset purchases and will probably initiate a turnaround in interest rates during the second half of 2022. This has already been largely factored in by investors, with the yield on 10-year US Treasuries rising from 0.9 % to 1.7 % since January. It is likely that yields will not climb as much in 2022 as they did in the previous year but should nevertheless hit the 2 % mark.

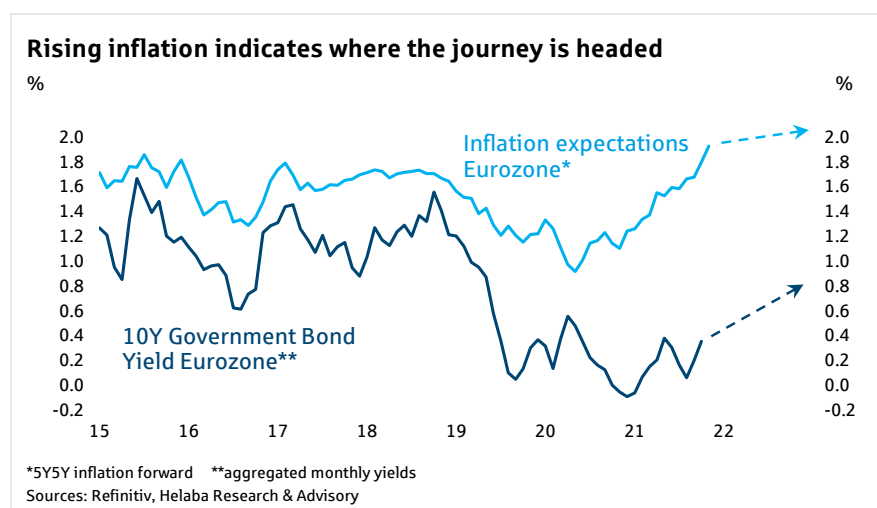
%	Q1/22	Q2/22	Q3/22	Q4/22
10y Bunds	0.00	0.10	0.15	0.20
10y Treasuries	1.70	1.80	1.90	2.00

Source: Helaba Research & Advisory

Attractiveness of bonds at an all-time low

A crucial factor for bonds is the rise in inflation expectations in the euro area, which recently reached 2 % (having risen from a low of 0.75 % in March 2020). This can be interpreted, on the one hand, as the achievement of monetary policy objectives. On the other hand, this success has come at an inopportune moment for the ECB. Real capital

market rates in Germany have hit a historic rock-bottom. Although real yields in the United States do not look much better at the moment, at least investors across the pond are earning a considerably higher nominal return. However, even the Fed will have trouble in restoring the influence of the market. The US debt ratio stands at over 130 % of GDP, more than doubling since the 2008 financial crisis. The euro zone average is around 100 %.



ECB: Last woman standing

The extent to which yields in the euro area are swept up by the global trend depends largely on the ECB's staying power. Through its purchase programmes, it has been steadily consolidating its influence on bond markets. Meanwhile, the ECB's share of outstanding euro government bonds has soared to around 38 % – from 25 % prior to the pandemic.

Two factors play a role in price formation: firstly, yields were immediately squeezed by the ECB's large-scale purchases of euro-denominated bonds. At the same time, the ECB extended a safety net to other investors. This led to a significant reduction in risk premiums in the euro area. Draghi's "whatever it takes" became both a monetary policy dogma and life insurance cover for the single currency. From an investor's perspective, government bonds have therefore become a relatively safe, if expensive, haven. Money from the EU's recovery fund NextGenerationEU also provides additional stability in many euro countries. Nonetheless, a prudent recalibration of monetary policy and the prospect of an interest rate hike by the ECB in 2023, as well as the French presidential elections in April 2022, are likely to act as a catalyst for greater volatility on bond markets.

Ulf Krauss



Covered Bonds: Highly secure

There is little about this asset class to worry investors in 2022. Nevertheless, central bank operations remain both a decisive and disruptive factor at the same time.

The credit outlook for covered bonds remained stable in 2021, with Covid-19 having barely any impact in the form of non-performing loans on the quality of cover assets. On top of that, the banking sector proved itself to be resilient. As a result, levels of overcollateralisation and rating buffers have been high. Sharp increases in property prices in many European countries are matched by effective back-up mechanisms on the covered bond side, such as loan-to-value requirements for cover assets and minimum overcollateralisation provisions. As such, there is no question about the traditionally rock-solid quality of these instruments, even if there are any subsequent credit defaults as a result of the pandemic.

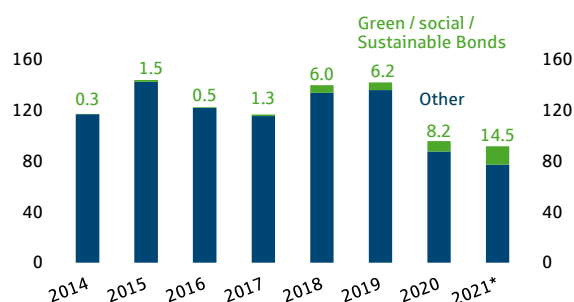
In 2022, additional support will be provided for covered bonds by the ratification and application of the EU Covered Bond Directive in what is expected to be all EU member states. Thereafter, depending on existing national requirements, in some cases more stringent quality standards will apply to covered bonds and their supervision. The first countries, including Germany, France and Denmark, already transposed the new EU requirements in 2021 and are thus on schedule. However, the majority of countries missed the ratification deadline, presumably due to Covid-19, even though initial legislation had already been drafted in many cases. With pressure increasing from Brussels and investors, the process of implementation should gather pace at the beginning of 2022. On the one hand, the EU Commission has been examining the possibility of launching infringement procedures against many countries since October. On the other hand, the EU requirements must be applied to all covered bonds in the EU from 8 July 2022. If not, new issues will lose their regulatory privileges.

Monetary policy will dominate activity on the covered bond market in 2022 as well. In terms of supply, the high levels of TLTRO III uptake will continue to rein in public placements, albeit most likely to a lesser extent than before. For one thing, many banks still have ample liquidity and, for another, the TLTRO III rate of -1 % expires in June 2022 and we do not expect these extremely attractive conditions to be extended. For this reason, it is not inconceivable that we will see first cases of early redemption and, depending on the market environment, limited

capital market refinancing measures. As far as demand is concerned, central banks will remain active in the scope of their asset purchase programmes, although their attention will increasingly turn to the surge of bonds from the public sector and interest in covered instruments will fade. Overall, our forecasts suggest the primary market volume of EUR benchmark covered bonds will be in the range of 110 to 120 billion euro in 2022. That would exceed the levels seen in 2020 (94 billion euro) and 2021 (87 billion euro as of 31 October), but would likely be below the scheduled maturities of 136 billion euro due to a number of prefunding measures in the autumn of 2021 and the fallout of ECB operations. Given the net negative supply of new issues and a certain level of demand from the ECB, we do not expect risk premiums to rise noticeably.

Sustainable issues set for further growth

Global sustainable euro-denominated issuance, billion euro



*January – October

Sources: Bloomberg, Helaba Research & Advisory

We anticipate that 2022 will once again see a steep rise in green and social covered bonds. On the upstream lending side, despite the EU taxonomy presenting major challenges for issuers for a long time to come, there should also be growth in new business with sustainable loans. In the first ten months of 2021, the three first-ever issuers of social covered bonds were joined by as many as ten debut issues of green covered bonds. These sustainable instruments, with a total volume of around 14.5 billion euro, already account for as much as 16 % of this year's euro-denominated issuance activity, almost twice as much as in the previous year.

Sabrina Miehs, CESGA



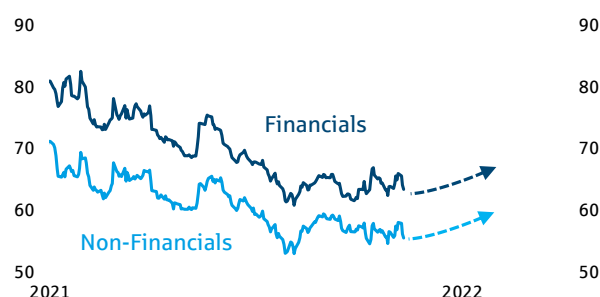
Credits: Risks from interest rate turnaround firmly under control

Economic growth and widening spreads will boost issuance volumes for corporates in 2022. For banks, the primary market will also be marked by looming TLTRO maturities.

Subdued issuance activity on the EUR corporate bond market in 2021 was a result of many companies' healthy liquidity positions and receding crisis-related anxieties. Meanwhile, however, many issuers have significantly trimmed their excess cash reserves, while the rosy outlook for the economy next year points to an even stronger private sector recovery. Taken together, this should stimulate corporate funding activities. In addition, risk premiums on corporate bonds have recently halted their downward trend. Concerns that rising inflation will ultimately lead to tighter monetary policy at the ECB are likely to drive spreads wider. As a result, we believe the probability is high that corporate refinancing costs will tend to rise in 2022. This will probably encourage some companies to consider bringing their refinancing measures forward. That is why we expect to see a higher level of placement activity in 2022 than in 2021, while issues with an ESG component will play an increasingly prominent role.

Credit spreads have bottomed out

iBoxx € non-financials and financials (asset swap spreads, bps)



Sources: Refinitiv, Helaba Research & Advisory

Banks turn their attention to interest rate environment

The results of European banks in 2021 surprised on the upside. These strong figures were primarily driven by a modest level of additional loan loss provisions, since banks had already made extensive allowance for possible credit losses in the pandemic-stricken year of 2020. On top of that, they benefited from strong capital market earnings, a further substantial level of new mortgage lending, cost-cutting programmes and additional income from participation in the ECB's targeted longer-term refinancing operations (TLTRO).

We expect the credit quality of the banking sector to remain stable in 2022. Although an increase in insolvencies in the wake of the pandemic cannot be ruled out, we anticipate further impairment reversals given the fact that risk provisioning is already high. Furthermore, the large amount of excess capital many banks have accumulated should mean continued dividend payments and share buybacks. There will also be a resurgence in opportunistic M&A activity. In our view, however, the key factor that will shape 2022 is the interest rate environment. Rising interest rates will be greatly welcomed by the sector, especially with regard to the profitability of excess deposits and liquidity portfolios. However, if they climb too quickly this could also pose risks in the form of fair value adjustments to assets, credit defaults and a lower level of new lending.

In addition to this, banks cannot expect additional earnings from the ECB's TLTRO programme in 2022 at the same magnitude as they have been so far, irrespective of whether a follow-up programme is launched or not. Yet, the programme's – at least partial – replacement may act as an impetus for future bank bond issuance: of the 2.2 trillion euro of outstanding TLTRO III bonds, around 1.7 trillion euro will mature between September 2022 and December 2023. This is compounded by high levels of maturities for senior unsecured issues and the fact that requirements for banks' regulatory bail-in capital remain high. The volume of senior unsecured bank bonds in euro-denominated benchmark format with fixed coupons on the primary market is therefore likely to be higher in both 2021 and 2022 than the 125 billion euro issued in 2020. From June 2022, large institutions with exchange-traded issues will have to disclose their ESG risks, which will give even greater impetus to the banking sector's shift towards sustainable activities.

Ulrich Kirschner, CFA, Dr. Susanne Knips



Equities: Selective opportunities still exist

Capital markets will be dominated by volatility in 2022 and equities will not be spared. Higher corporate earnings, the accelerating pace of economic growth and a lack of investment alternatives will have a stabilising effect. This will be tempered by a global tendency towards rising interest rates. High valuation levels also pose a downside risk.

Given the Covid-19 pandemic and its knock-on effects, global equity markets generally performed better than expected in 2021. A major factor in this was the extremely accommodative monetary policy of central banks. As of 15 November, the DAX was up by 17.9 %, EUROSTOXX 50 had gained 23.6 % (helped in no small part by oil stocks in that index), while the US S&P 500 was trading at 24.7 % higher on the year. The Nasdaq Composite was up by 23.1 %, but will likely not match the colossal gains of previous years (43.6 % in 2020 and 35.2 % in 2019). The Hang Seng (-5.8 %) and the Chinese CSI 300 (-6.3 %) were the losers among the heavyweight indices.

Index value	Q1/22	Q2/22	Q3/22	Q4/22
DAX	15,000	16,500	16,200	16,000
Euro Stoxx 50	3,950	4,350	4,250	4,200
S&P 500	4,200	4,600	4,500	4,400

Source: Helaba Research & Advisory

Equity markets fiercely debated a whole host of negative factors in 2021, including Covid-19, supply chain disruption, massive increases in commodity and energy prices, inflation headwinds and the woes of the Chinese real estate giant Evergrande. However, more often than not, these issues only had a temporary impact on stock markets.

"There is nothing so disastrous as a rational investment policy in an irrational world."

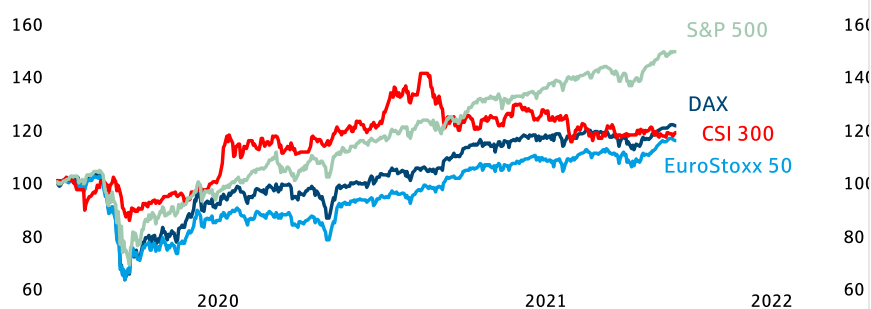
John Maynard Keynes

In Germany as well as other regions of the world, the pace of economic growth slowed down in the second half of 2021. In Germany, growth will gradually pick up again in the course of 2022 when supply bottlenecks, in particular, start to recede. Accelerating growth rates in an environment of high inflation will drive expectations of interest rate rises, which means that a sharp correction on equity markets can be expected at some point over the year, which will be accompanied by greater risk aversion and higher volatility. We anticipate a similar spike in volatility to the one we saw in the first quarter of 2021, when the V-DAX hit a peak of over 33 points. The emerging shift in central banks' strategies, i.e. tapering, and a trend towards rising yields will have both an upside and a downside in 2022.

The US Federal Reserve is set to change its stance well ahead of the ECB and will gradually scale back its bond purchases until the summer of 2022. We expect to see an initial interest rate hike later in the year. Initially, the attention of the European Central Bank will be directed towards the anticipated phasing out of the emergency PEPP programme in March 2022. A smooth transition with an expansion of the APP programme, which will remain in place, should ensure that interest rate hikes in the euro area will not become an issue until 2023.

Existing upside potential dependent on market timing

Indices indexed to 1 January 2020 = 100



Sources: Refinitiv, Helaba Research & Advisory

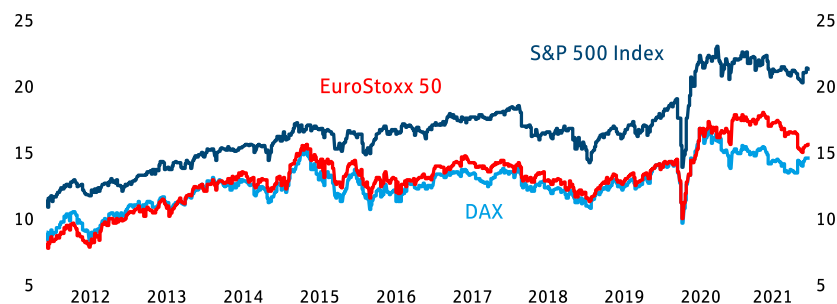
As the year unfolds, we assume that companies will benefit from a renewed acceleration in the pace of economic recovery and that they will see higher profits. Consequently, recent ambitious valuation levels will ease back slightly.

In view of disruptions to supply chains, demand is expected to continue outstripping supply in numerous sectors in 2022. Although many companies have announced their intention to invest in new production facilities, this fundamentally takes time. However, high capacity utilisation in the construction sector will make it even more difficult to respond quickly to this situation. Due to the need for energy-efficient retrofitting and expenditure on climate

adaptation, there are also expected to be changes to manufacturing structures.

Valuations remain ambitious

P/E ratio, 12-month forward



Sources: Refinitiv, Helaba Research & Advisory

In our baseline scenario, the DAX will be trading in a range of between 15,000 and 16,500 points in 2022. Provided the timing is right, there will still be attractive gains to be had within this corridor that will match the historic average annual performance of the DAX of around 8 %. We expect the leading German index to be trading at 16,000 points at year-end.

US markets: Scope for gains largely exhausted

For US equities, the big question is how much upside potential remains and to answer this, it is worthwhile taking a look at the development of US companies' margins. On a macroeconomic level, margins have reached around 18 % and are even higher in some cases. In other words, they are approaching their all-time highs. In the past, similar peaks were followed almost invariably by declines. For this reason, although we expect growth in corporate profits to weaken, it will remain positive. This hypothesis is also corroborated by the fact that the average earnings per share of S&P 500 companies are expected to climb to a record level of 207.6 US dollar in 2021. The P/E ratio of the S&P 500 is still ambitious at 26.1 (12-month forward: 21.5).

"October. This is one of the peculiarly dangerous months to speculate in stocks. The others are July, January, September, April, November, May, March, June, December, August, and February".

Mark Twain

In an environment of gradually less accommodative monetary policy, we do not expect any expansion in valuations; hence, prices and earnings should both exhibit more subdued performance than in recent years. In addition, tax rises on companies and high-income households to help finance part of President Biden's sweeping framework of social and climate investment, which is currently being debated in Congress, could weigh on sentiment.

It is also worth noting that the upward trend of the S&P 500, which began in March 2020, has been steeper than ever before. Generally, curves as steep as this cannot be sustained. Consequently, it is reasonable to surmise that a significant degree of positive expectation has already been priced in at the levels it has reached and that the potential for negative surprises should therefore be weighted higher.

For companies, especially from the tech sector, and all others that have not yet generated any profits, headwinds are likely to become stiffer – not least in view of rising interest rates. Accordingly, we also expect to see a correction on US stock markets in the course of 2022.

Christian Schmidt



Gold: An age-old inflation hedge faces monetary policy challenges

Expectations of rising interest rates and competition from equities restrict the potential for gold. Though they will not recede, the precious metal should be in demand as an inflation hedge.

To all intents and purposes, gold should have been among the winners of 2021; after all, the precious metal is traditionally seen as a hedge against inflation. Indeed, inflation has now made an impressive comeback and the argument of monetary policymakers that it is only a temporary phenomenon does not completely stand up to scrutiny. Despite all that, gold's performance in 2021 has been rather disappointing and it will probably end the year in the red. What is more, it is rather unlikely that any reversal in its fortunes will occur as early as 2022, with continued competition from equities and rising nominal interest rates. Nevertheless, gold should be able to maintain its current level of around 1,800 US dollar (1,510 euro) per troy ounce, as its hand luggage will also be carrying worries over inflation, possibly coupled with uncertainties about economic growth, in 2022.

"No bet has been more certain of being won in the centuries of monetary history than that a gold coin, inaccessible to the inflationary policies of governments, would preserve its purchasing power better than a banknote."

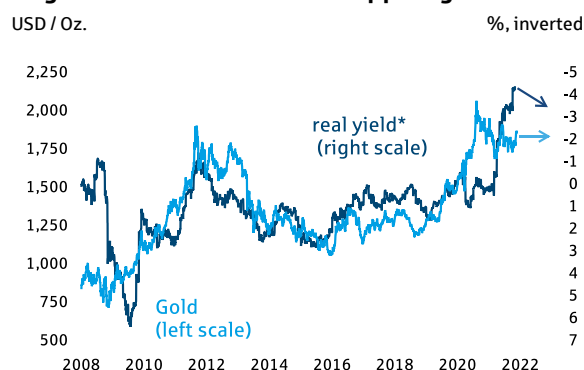
Wilhelm Röpke, German economist

The post-Covid era has got underway with elevated levels of inflation and there is currently no prospect of a slowdown towards stable or lower prices. In fact, structural factors such as demographics, deglobalisation and decarbonisation are more likely to contribute to bursts of inflation in the 2022 economic cycle and beyond. Gold is regarded as the ultimate hedge against inflation; arguments about its ability to protect purchasing power usually outweigh those about its role as a crisis hedge. Over the past two years, however, the main

driver of the gold price has been its safe haven for investment rather than its status as protection against inflation. The question as to what direction the gold price takes in future will depend, among other things, on the monetary stance central banks adopt in the face of heightened inflationary risks.

So far, the Fed and the ECB have been reluctant to confront inflationary tendencies head-on. However, this should change in the course of the year as the market increasingly prices in a shift in monetary policy. That is not only reflected in government bonds but also in the gold price. In this respect, when the actual turnaround in interest rates occurs, it should not trigger any major shocks for the price of gold. What investors should instead focus on is real interest rates, which will largely continue their downward trend in 2022. Since the 2008 financial crisis, central banks have been more concerned with maintaining the stability of financial markets than prices and this policy is unlikely to change significantly next year. Consequently, interest rate policy will remain (too) accommodative in relation to growth and inflation in 2022.

Negative real interest rates support gold



*real yield: 10-year US Treasuries net of inflation in %
Sources: Macrobond, Bloomberg, Helaba Research & Advisory

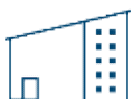
Price / ounce	Q1/22	Q2/22	Q3/22	Q4/22
Euro	1,667	1,565	1,565	1,500
USD	2,000	1,800	1,800	1,800

Source: Helaba Research & Advisory

occasional spurts towards the 2,000 US dollar per troy ounce level as inflation risks increasingly come into play as a motive to buy. From a sustainability standpoint, gold has a lot going for it in the medium term. Firstly, it will be a much sought-after "industrial metal" that is used in environmentally friendly technology, such as high-performance catalytic converters. Secondly, unlike its Bitcoin competitor, it emits virtually no greenhouse gases once the production process is complete.

As a real asset alternative, gold should be able to hold its own, even if things could get a little bumpy around the time of an interest rate hike. Bullion will hover around the 1,800 US dollar per troy ounce mark, with

Claudia Windt



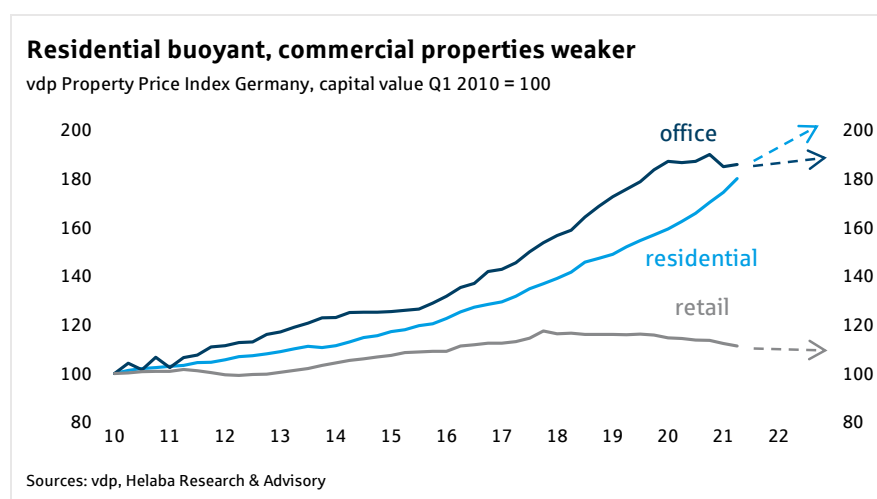
Real estate: Uneven recovery

Low interest rates and strong economic growth are the factors guaranteeing a healthy property market. Yet, it is important to note key differences between segments.

The German real estate market has weathered the Covid-19 pandemic and the severe recession brought on by the lockdowns in good shape, once again proving that it is remarkably resilient to volatility by global standards. Although interest rates are likely to edge up slightly in 2022 from their extremely low level, this will not have any fundamental impact on the low interest rate environment and therefore on the relative appeal of this asset class, particularly in relation to fixed-income securities. However, as a result of experience gained during the recent crisis, investor interest is very unevenly divided between the various segments of the property market.

Commercial properties: Less dynamic

While logistics properties have become the darlings of investors in the commercial segment, the far more significant retail segment has suffered. The structural problem of mounting competition from e-commerce had already been weighing on the performance of retail properties long before the pandemic struck. Despite the fact that consumer spending patterns have meanwhile returned to normal and the internet's share of total retail sales has declined considerably, it is not possible to give the all-clear for this segment. Consequently, a number of submarkets are likely to see a further slight fall in property prices and rents in 2022.



Notwithstanding fears over increased working from home, the office segment was less badly affected. Both capital values and average office rents in prime locations in Germany remained largely stable in 2021, having risen strongly in previous years. Vacancy rates have grown by less than one percentage point from what were, in some cases, extremely low levels. Given the expected strong economic upturn and a corresponding buoyant labour market, the office market should perform better in

2022 than it did in the prior year, although it will not reach the heights of the pre-Covid boom. Demand for office space, which continues to be sluggish, and a return to an above-average level of completions suggest a further modest rise in vacancy rates, which will predominantly affect less attractive properties. Nevertheless, in these times of scarce investment opportunities, investors will not be able to sidestep the crucial office segment in their search for properties; consequently, our presumption is that capital values will see a slight appreciation.

% y/y	2018	2019	2020	2021e	2022f
Open-ended fund index*	2.7	2.7	1.5	1.9	2.2
Residential real estate**	8.3	6.4	6.8	10.0	7.0
Commercial real estate**	6.8	6.4	3.1	0.0	2.0

* Helaba index für German open-ended funds (annual total return); **vdp price indices Germany
f=forecast, e=estimate; Sources: vdp, Refinitiv, Helaba Research & Advisory

German housing market: No end in sight to boom

As was the case in the past, the recent crisis has shown the German housing market to be extremely robust. The recession has not had any negative effects on rents and property prices. On the contrary, persistently low mortgage interest rates, the lack of alternative investments and, arguably, with remote working on the rise, the way many people have upgraded their own homes, have given an additional boost to demand for residential property. Although major drivers of the residential real estate market will remain in place in 2022, momentum is likely to slow down somewhat. This is because the trend towards urban living, which was very pronounced before Covid-19, is easing off and demand is shifting to cheaper areas further away from cities – a process that is also facilitated by

"Our target is to build 400,000 new dwellings per year, 100,000 of which will be publicly subsidised homes."

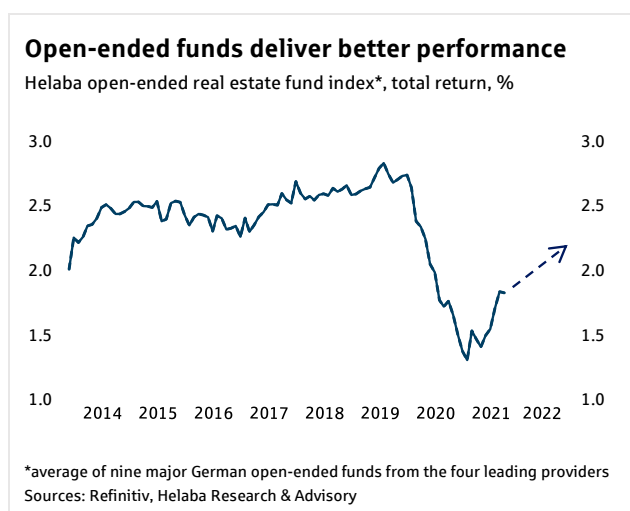
Joint exploratory paper by the SPD, the Greens and the FDP

more flexible work-from-home options. Another factor could be a slightly higher number of completions. However, bottlenecks in capacity will continue to limit construction activity into 2022, so that the new German federal government will miss its target of an anticipated 400,000 new dwellings per year. Annual price growth for owner-occupied housing in Germany is expected to normalise from a level of around 10 % to approximately 7 %.

German open-ended real estate funds: Strong recovery

The average performance of open-ended mutual property funds in Germany had fallen to 1.3 % as a result of Covid-related depreciation in the hotel and retail segments; thankfully, it rebounded again during 2021. In the meantime, it is on course to hit the 2 % mark. This positive trend is expected to continue but returns will not yet reach pre-crisis levels in 2022. The main reason for this lies in the breakdown of portfolios by sector, since logistics and residential, which continue to grow at an

above-average rate, only play a minor role with a share of rental income of 5 % and 3 %, respectively. That contrasts with the most important property type of office, which make up around 55 % of fund assets and are projected to see slower growth, followed by retail space in second place with almost 24 %.



By the end of 2022, performance of German open-ended real estate funds is likely to be just below their 10-year average of 2.4 %. As such, this asset class will remain attractive to private investors in a low-interest rate environment. For 2021, inflows of more than 7 billion euro can be expected – significantly above the long-term average of 4.3 billion euro per year. A similarly high sales result is anticipated for 2022.

Sustainability increasingly defining real estate industry

As one of the leading sources of CO₂, buildings are at the forefront of climate policy. The failure to meet targets in 2021 prompted the German government to launch an emergency programme with additional funds of 6 billion euro for retrofitting buildings. In 2022, one of the new German government's priorities will be further measures to reduce CO₂ emissions. However, spending on energy-efficient refurbishment will be competing with ambitious new targets for housebuilding, especially in view of the very high capacity utilisation and a severe shortage of skilled workers in the German construction industry, which is already an acute problem.

Retrofitting portfolios is a challenge for German open-ended funds, as around one fifth of portfolio properties are more than 20 years old. In the future, "green" properties will be particularly sought after for new investments. In order to meet the regulatory requirements of the EU taxonomy, these portfolios must first be systematically evaluated from an ESG perspective. To this end, it would be helpful to develop uniform industry standards. In this respect, as a broad-based term, sustainability not only comprises ecological criteria, such as carbon emissions, water consumption or soil sealing, but also governance aspects. For instance, in future property owners are likely to pay more attention when it comes to choosing tenants and investors will have to take greater care in avoiding corruption and ensuring adequate working conditions at construction firms, especially those outside Germany. In order to comply with social standards, aspects such as subsidised housing, affordable housing as well as assisted living for the elderly may become more important in the fund sector.

Dr. Stefan Mitropoulos



Currencies: US dollar running out of steam

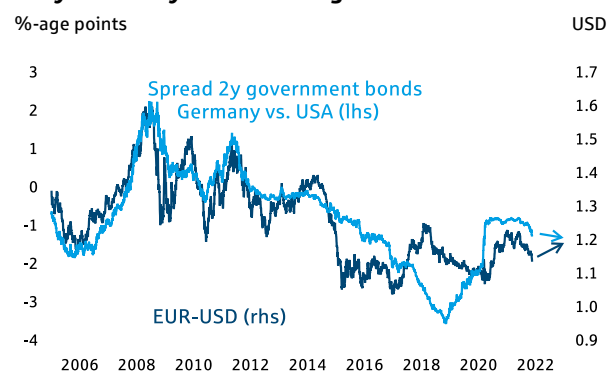
The US dollar is riding in the tailwind of monetary policy, but it will not be enough for it to soar. Structural factors suggest caution is warranted. The euro-dollar rate is likely to trend sideways.

The prophecies of doom for the US dollar have – yet again – not materialised. The US currency has enjoyed a remarkably good year so far in 2021, posting solid gains. Once again, the greenback's performance was supported by US economic growth, which left the euro area in its wake. US monetary policy is therefore poised to make a U-turn in 2022. Does this mean that the US currency is headed for a further strong year?

Monetary policy is typically the most significant factor setting the pace on foreign exchange markets, especially during periods of interest rate reversals. As was often the case in the past, the US Fed will presumably make the first move in raising rates before the ECB in this cycle, too. In the run-up to such a hike, around six months in advance, the US dollar has traditionally benefited, while the first step was followed by a countermovement. Anticipation that the Fed will taper its asset purchases more quickly should primarily be interpreted as a signal for interest rate policy. This is because the dollar supply is still growing faster than that of the euro.

The prospect of higher key interest rates has already boosted the dollar's yield advantage over the euro and this trend is likely to resume, albeit less markedly, in 2022. Compared to recent years or the current exchange rate, however, the yield advantage is modest. There is little room left for a further significant appreciation. Given the US dollar had more or less jumped the gun in terms of a putative hike in interest rates in the second half of 2022, even a temporary setback would not come as a surprise. Moreover, following a reversal in US monetary policy, the focus will shift to the ECB. Then it would not be surprising if the US dollar were to see some typical profit-taking.

Only modest yield advantage of US dollar



Opportunities for the euro in the long run?

Beyond monetary policy, there is little support for the greenback. In terms of purchasing power parity, the dollar is clearly overvalued against other currencies as a whole and especially against the euro. This is exacerbated by higher US inflation. It therefore comes as no surprise that the US trade and current account deficits have grown once again. Notwithstanding a reduction, the 2022 federal deficit will remain relatively high, even compared to those of euro area countries. The "twin deficits" will continue to be a factor weighing against the US dollar and even the growth advantage of the US over the euro area will probably turn out to be smaller.

Admittedly, there are a number of political uncertainties in Europe, such as elections, that could temporarily impact the euro-dollar exchange rate. At the same time, though, problems in the single currency will gradually subside. The recovery fund NextGenerationEU will strengthen the weaker economies. It is a matter of debate as to whether this fund represents the first step towards a permanent fiscal redistribution mechanism. Moreover, previous divergence in unit labour costs is increasingly disappearing, particularly in the wake of higher inflation rates, and gaps in competitiveness are narrowing. Finally, the EU

Establish the euro as the standard currency in markets of the future and for sustainable financial products.

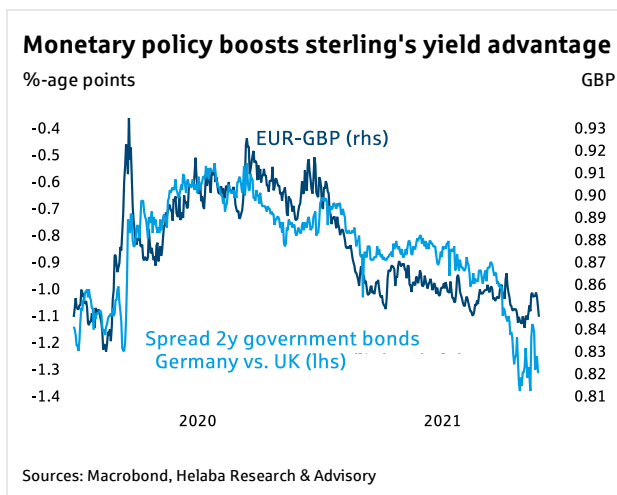
Paper by The Greens

appears to be leading the way on the issue of sustainability, especially with regard to creating a zero carbon economy. The union is becoming the market leader in Social and Green Bonds. Should these markets continue to grow, the euro could wrest market share from the top dog – the US dollar – in the longer term.

So, the environment does not look quite so bright for the US currency after all. Overall, the US dollar will receive, at best, a temporary boost from monetary policy. However, since the euro lacks a strong monetary tailwind, on balance the euro-dollar rate will presumably trade in a sideways range. At the end of 2022, one euro should cost 1.20 US dollar.

Pound sterling has upside potential

Sterling has prospered in 2021, particularly versus the euro, and monetary policy will continue to support the British currency in the year ahead. The Bank of England will react more swiftly to the changed inflation context and raise its key interest rate several times until the end of 2022. This will make the UK currency more attractive in relation to the euro and the US dollar, as reflected in the yield differentials. However, there are limits to how far sterling can go. The relative strength of the economy will diminish in 2022, which was also a result of the sharper downturn in 2020 and the more rapid vaccination programme. The country's troubled relationship with the EU could cause temporary uncertainty, especially as some negative aspects of Brexit are only gradually becoming apparent. The EUR/GBP exchange rate is likely to fall to 0.82, while the GBP/USD rate could rise to 1.46.



Swiss franc less resistant

Despite greater risk appetite on the financial markets and higher bond yields, the Swiss franc put in a strong performance against the euro in 2021. Despite this, inflation and the resulting increase in capital market yields worldwide will have a particularly negative impact on the Swiss currency. There is little reason for the SNB to change tack before the ECB. Although the Swiss economy has already returned to its pre-pandemic level, growth in 2022 will continue to lag behind the euro area. This especially applies to inflation of around 1 %. Yield differentials are likely to move increasingly against the franc and this will make the currency less attractive relative to the euro. From a long-term perspective, the franc is considered overvalued anyway. Only temporarily, the safe haven for investments could benefit from uncertainties. In the course of 2022, the Swiss currency is likely to depreciate and the EUR/CHF rate should rise to 1.10.

Japanese yen to hold steady

The Japanese yen emerged as the biggest loser of 2021 among the leading currencies. Unlike the franc, this safe haven currency suffered from a high

risk appetite and rising capital market yields. The interest rate environment will remain difficult for the yen. The Bank of Japan will maintain its accommodative stance for longer, despite rising inflation, while other central banks are at least tentatively steering in another direction. Nevertheless, in terms of yield differentials, a lot of negative developments have already been priced into the yen, and in some cases there has even been a slight overreaction. That is why there will probably be some modest cooling off and the yen could even see a slight temporary appreciation. The new prime minister, Fumio Kishida, is not regarded as a major proponent of reforms and will not be of any help to the currency at least. Overall, the yen can be expected to trade sideways against the euro in 2022. The EUR/JPY exchange rate should end the year at 132. On balance, the same applies to the US dollar, although there could be a more substantial, albeit temporary, recovery.

vs. Euro	Q1/22	Q2/22	Q3/22	Q4/22
US dollar	1.20	1.15	1.15	1.20
Japanese Yen	133	130	130	132
British Pound	0.85	0.82	0.82	0.82
Swiss franc	1.08	1.10	1.08	1.10

Source: Helaba Research & Advisory



Kryptoassets: Huge potential amid enormous differences

Blockchain is all the rage, even among investors. The transformation of processes has begun and new investment opportunities are emerging. But not all cryptoassets are equal.

Almost everywhere you look, the onward march of digitisation is disrupting the way business processes are organised. For investors, this opens up entirely new investment opportunities. Blockchain technology is making waves and cryptoassets are garnering ever more attention. According to the DSGV Wealth Barometer 2021, around 7 % of private investors already consider "cryptocurrencies" to be a suitable means of asset accumulation.

A project instigated by Facebook to establish a stable cryptocurrency served as a wake-up call, also for the world's central banks. What is more, China is testing a digital version of the yuan in various pilot projects. When it comes to cryptoassets, it is vital to keep an eye on the differences as well as the opportunities and risks of these novel instruments.

It was Bitcoin that marked the beginning of the cryptocurrency success story, which has since mushroomed into thousands of different iterations. The term cryptocurrency implies they are recognised means of payment. But this is not the case, and that is why it is better to refer to them as cryptoassets. Meanwhile, the onset of tokenisation has resulted in a plethora of new cryptoassets and it would seem apt to make a distinction between payment, utility and security tokens.

So-called cryptocurrencies do not possess any intrinsic value

Digital currencies are payment tokens and, in addition to normal "cryptocurrencies", also include stablecoins and central bank digital currencies (CBDCs). In the case of stablecoins, which are backed by underlying assets, the focus is on their function as a means of conducting transactions. However, there are risks involved. Not only is the lack of transparency of the deposited collateral a critical factor but they could also have a negative impact on financial stability.

Although CBDCs are still in the project, planning or consultation phase, as such they constitute money. Moreover, as the development of CBDCs and bank money tokens progresses, the importance of cryptocurrencies may decline, even though banks and central banks are likely to face continued competition from "non-banks" issuing stablecoins.

Bitcoins and comparable payment tokens do not possess any intrinsic value and are extremely risky. These "currencies" have not reached the status of money because they barely meet the requirements as a means of payment – and are not likely to in the foreseeable future, either. On top of that, the vast amounts of energy many of these digital tokens consume pose a problem.

Utility tokens can, for example, be used to represent digital identities or to store access rights in digital form. This category of cryptoasset also includes the large number of tokens that are used to express voting rights.

The tokenisation of tangible assets, i.e. digitising assets using security tokens on a blockchain, enables them to be divided into almost any number of parts. One key difference to cryptocurrencies is that these tokens are backed by "real" assets and that, generally speaking, their price is determined by the cash flow of the underlying assets and their performance.

The potential for growth in the tokenisation of tangible assets is colossal

The potential for growth in the tokenisation of tangible assets is colossal. It is equally important, though, to keep in mind both the associated opportunities and the risks, which chiefly include information asymmetry. For micro-investments, in particular, the costs of obtaining information can outweigh any possible price gains or returns – a problematic scenario.

Ralf Umlauf



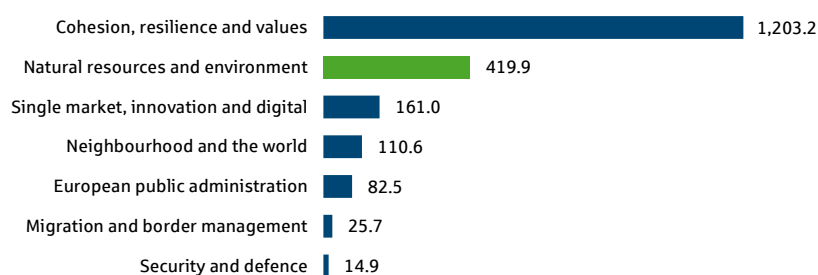
European Union: Putting it all on Green

At the moment, ecological aspects still dominate the EU's sustainability strategy. Preparations are ongoing, however, to incorporate other dimensions and a lot of room for discussion remains.

As efforts to tackle the pandemic hopefully will soon enter the homestretch, the issue of sustainability will remain a key priority for the EU in 2022. With its strategy adopted at the end of 2019, the so-called "Green Deal", the EU is aiming to become climate neutral by 2050. The main instrument for the transition to a sustainable economy is the EU Taxonomy Regulation, which is designed to take all three dimensions of sustainability – environmental, social and governance – into account. Currently, the clear focus is on ecological issues. Disclosure requirements for companies are successively being expanded and criteria for social and governance-related objectives are in the pipeline. Given the differences between EU member states on economic and political matters, there is an urgent need for coordination and a deep-seated fear of losing competitiveness.

One fifth for the environment

Budgeted expenditure for Multiannual Financial Framework 2021-2027 by objective, billion Euro



Sources: EU Commission, Helaba Research & Advisory

The environment features prominently in the current Multiannual Financial Framework: of the total amount of nominally 2,018 billion euro up to 2027, about one fifth is earmarked for "Natural Resources and Environment". This focus is even more apparent in the "NextGenerationEU" (NGEU) recovery plan which, with a volume of just over 800 billion euro, accounts for around 40 % of the total EU budget up to 2027. According to calculations by the ECB and the

EU Commission, the NGEU fund could increase the bloc's GDP by 1.5 % in the medium term. The programme mainly consists of the Recovery and Resilience Facility of approximately 724 billion euro, which is roughly equally divided between grants and loans. More than a third of this is planned to be channelled into green investments.

Green ambitions on the capital markets

Green is the order of the day for fundraising as well, with 30 % of the funds for NGEU to be raised by issuing Green Bonds. In October 2021, the EU issued its first-ever Green Bond with a volume of 12 billion euro, which was oversubscribed by more than ten times. By the end of 2026, the issuance volume is expected to rise to around 250 billion euro. Demand is likely to remain high, as interest in green bonds is gathering pace and polls show that climate change and environmental concerns rank high among the issues on the minds of EU citizens. Despite significant

"This is Europe's 'man on the moon' moment."

Ursula von der Leyen on the "Green Deal"

agreement on the goal of sustainability, many points still need to be clarified, for example with regard to the inclusion of (green) investments in public sector debt. After all, a sustainable fiscal policy would have to address the long-term viability of public finances. However, the Maastricht debt ceilings will remain suspended in 2022.

On the global stage, the EU's efforts alone will not suffice in fundamentally changing the direction the planet is moving in. This is something only a coordinated approach can achieve, including global standards for green bonds, requirements for social criteria and good corporate governance. If the EU acts quickly, this could serve as an example to others and possibly even set the benchmark. Nevertheless, even if a go-it-alone approach does not guarantee success, it is a well-known fact that even the longest journey begins with the first step.

Marion Dezentner



Germany: Spurring innovation

Economically, Germany is on the road to recovery. The challenge of addressing climate change will limit the scope for consumption. Technological progress is the only way to tackle this.

In Germany, the Covid-19 pandemic re-emerged in the first half of November and is preventing consumers from returning to their pre-crisis spending habits. Moreover, the availability of intermediate products is limited. This is partly a consequence of the boom in global industrial output. As a result, considering the extent to which the

	2021e	2022f	2023f
GDP real, % yoy	2.8	3.9	1.8
GDP real, % yoy, working day adjusted	2.8	4.0	2.0
Private consumption, % yoy	0.5	5.5	1.2
Government spending, % yoy	2.7	2.0	1.3
Gross fixed capital formation, % yoy	2.3	3.3	2.2
Investment in equipment, % yoy	5.0	5.5	5.5
Construction, % yoy	1.5	1.5	1.0
Exports, % yoy	8.0	4.5	3.5
Imports, % yoy	9.0	4.0	2.5
Consumer prices, % yoy	3.1	2.7	2.4
Unemployment rate, %	5.7	5.1	4.7
Unemployed, million	2,600	2,350	2,150
Budget balance, % of GDP	-4.5	-2.5	-1.5
Current account balance, % of GDP	7.2	7.0	6.9

e=estimate, f=forecast; Source: Helaba Research & Advisory

economy shrank in 2020 (-4.9 %), growth in 2021 will be a disappointing 2.8 %. Hope now lies in 2022, when the page should finally be turned on the pandemic with a rise in GDP of around 4 % adjusted for calendar effects. The economy will exceed its pre-pandemic level as early as in the first quarter.

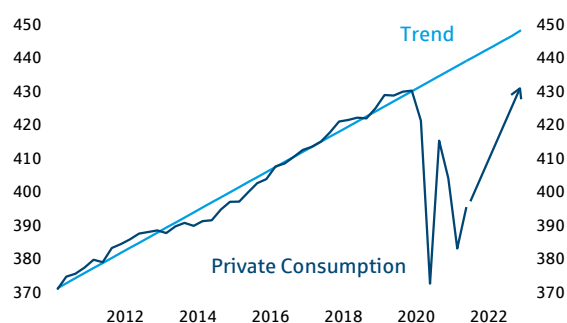
As the Covid-19 assistance programmes expire, fiscal policy will have a dampening effect in 2022. However, the prospective new federal government is planning to introduce stimulus measures in a number of sectors that will alleviate this impact. As the process of economic recovery will probably be completed in 2022, growth will fall to 2 % in 2023.

Consumer spending, which has only risen by an estimated 0.5 % in 2021, should act as the principal engine of growth in 2022. For one thing, disposable incomes of around 2 ½ % in 2021 have lagged behind a significantly higher inflation rate of just over 3 %. In other words, private households have seen a real decline in their incomes. For another, the savings rate, which is expected to have reached approximately 15 % in 2021, is still well above its 2019 level (10.8 %). In 2022, demand for services should pick up again and, as supply bottlenecks ease, goods such as vehicles will also be more readily available. Then the savings rate will fall to roughly the same level as before the pandemic. Disposable incomes are likely to grow by more than 4 % as the situation on the labour market improves, pensions should see a substantial 5 ½ % increase and corporate and investment income will also rise. The potential government-in-waiting has announced plans for a one-time increase in the minimum wage of 25 % to 12 euros. If this is implemented, it would provide a further boost to purchasing power. On balance, consumer spending is expected to jump by 5 ½ % in 2022.

Inflation will only decline marginally to 2.7 % in 2022, with special effects providing some relief. For instance, the inflationary effect of VAT adjustments will no longer be a factor in the calculation. While energy prices are likely to remain high, the rate of changes will be significantly lower in 2022.

Consumption: a gradual return to trend

Billion euro, quarters, seasonally adjusted



Sources: Macrobond, Helaba Research & Advisory

Equipment investment is estimated to have grown by 5 % in 2021. Problems in industrial sectors arising from shortages of intermediate products and logistical constraints after the slump have been obstacles to a better performance since the middle of 2019. A steady improvement in companies' logistical capabilities should lead to growth of 5.5 % in 2022. Incoming orders for capital goods on the German market have already risen sharply. An exploratory paper by the potential coalition partners in a new German government mentions "super" tax write-offs in the fields of digitisation and climate change mitigation. Positive effects can be expected if these measures are adopted in 2022.

At the moment, construction activity is plagued by shortages of materials and limited capacity; while the former should gradually subside, the latter will not. In this respect, the rate of growth in construction investments will remain subdued in 2022 at 1.5 %, despite strong demand. Overall, around 315,000 dwellings are likely to have been completed by the end of 2021. In light of this, the target set by the prospective new government of 400,000 new dwellings per annum, of which 100,000 as subsidised affordable housing, is ambitious and based on the assumption that there will be a significant expansion in construction capacity. The soaring costs of building as well as property and land prices will act as an additional impediment to activity. More building land would have to be made available.

Market-based instruments and more rapid technological progress are the only means to limit the costs of mitigating climate change.

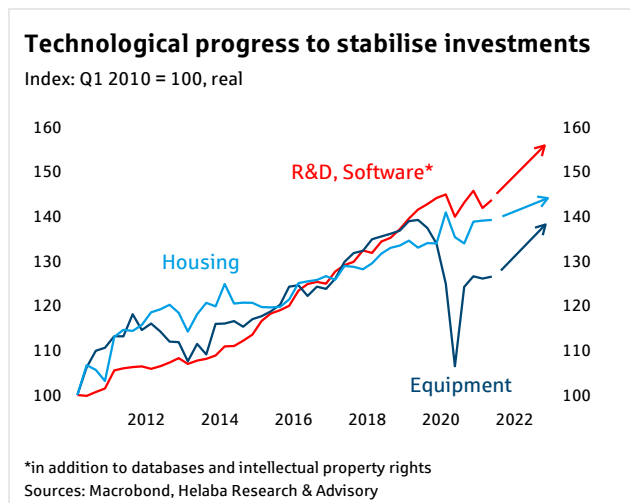
Germany's export industry has not contributed anything to growth in 2021. In fact, at around 9 %, imports are even likely to have risen somewhat faster than exports (8 %). The increase in trade with other euro area countries has been above average, while exports to the United Kingdom have not recovered. Exports have also been negatively affected by disruption to supply chains. These problems should subside

in 2022. However, buoyant consumption and higher levels of manufacturing will translate into brisk imports. Despite this, exports (4.5 %) are still likely to rise slightly more than imports (4 %), so that Germany should post a higher net exports in 2022.

Efforts to mitigate climate change will temporarily restrict consumer spending

The macroeconomic outlook is promising, but Germany also faces enormous challenges. According to calculations by the Joint Economic Forecast of Germany's leading economic research institutes, potential output is set to fall below 1 % by 2026, mainly because of a decline in the working-age population. As a result of the need to transition to a zero carbon economy in order to tackle climate change, part of the capital stock will depreciate in value.

This will necessitate colossal levels of investment and will, at least temporarily, lead to a fall in per capita consumption.



The costs of this transformation will also be reflected in the form of higher consumer prices in the medium term. While they have risen in Germany at an annual rate of just over 1 % in the last five years, prices are likely to increase by more than 2 % in the next five years due to climate-related factors, among others. There is a danger that additional low carbon incentives, e.g. for energy efficient retrofitting of buildings, will lead to further price increases due to capacity bottlenecks instead of to economies of scale. An environmental policy based on free market principles, as opposed to interventionist measures, could reduce the inevitable costs.

The dilemma outlined above between addressing climate change and a temporary drop in real incomes per capita is one that could be alleviated by technological progress. This is the only way to deliver new low or zero carbon products and processes as well as higher productivity. The new German government is therefore well advised to prioritise research and innovation, as it announced in its draft exploratory paper. Any success made in this area would also be reflected in "other investments", which include software and databases in addition to research and development. In the long run, they will grow at an above-average rate, even if momentum has recently slowed. Meanwhile, they account for almost one-fifth of total capital expenditure.



Hesse, Thuringia, North Rhine-Westphalia, Brandenburg: A two-phase recovery

The pace of the economic slump and recovery in Helaba's core regions varies. One aspect they all have in common, however, is that they have all grown in 2021 and will continue to do so in 2022.

When it comes to the issue of tackling climate change, all four German federal states start from different baselines: North Rhine-Westphalia and Brandenburg are Germany's two largest coal-mining regions.

Hesse: Above-average expansion in 2022

In the first half of 2021 a huge strides in recovering from the pandemic were made. Germany's gross domestic product (GDP) rose by 2.9 % compared to the previous year (not adjusted for calendar effects), having slumped by 4.9 % in 2020. Hesse grew at almost the same pace – 2.8 % – although the contraction in 2020 was more pronounced at 5.6 %. In the second half of 2021, the pace of recovery has slowed down. Supply bottlenecks, limited capacity and a steep rise in inflation have put the brakes on growth. For 2021 as a whole, the German economy is estimated to have grown by only 2.8 % and Hesse is likely to have achieved a similar figure. The bottlenecks will not clear until 2022, when many sectors will finally be able to satisfy the pent-up demand. That means a sharp 3.9 % increase in German GDP is on the cards; the rebound should be somewhat more robust in Hesse at 4.2 %.

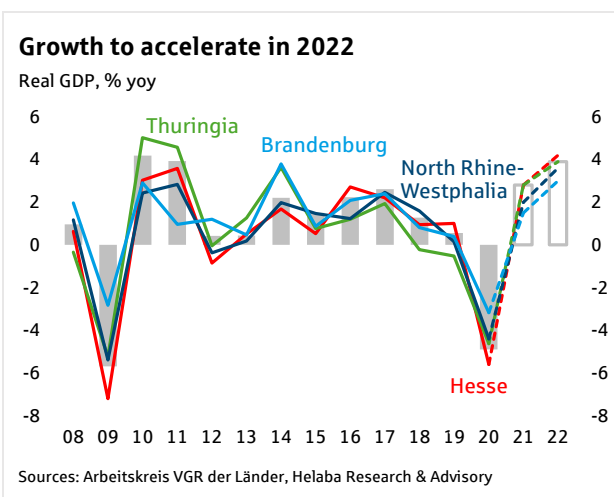
The trade fair and the aviation sector should recover as a result of the gradual lifting of travel restrictions. This will have a positive impact on Frankfurt Airport, where passenger volumes in October 2021 were still more than 40 % below the average for 2019. The situation should also improve for the Hessian hotel industry, which has been particularly badly hit by restrictions on travel, losing out on 85 % of international and 65 % of German guests in 2021 (compared to 2019).

In contrast, the industrial sector recorded a jump in new orders and sales of 19 % and 14 %, respectively, in the first eight months of the year, exceeding pre-pandemic levels. Unperturbed by the crisis, the construction industry continued along its path of expansion. Meanwhile, however, it has reached the limits of its capacity, leading to a slight decline in sales and working hours (-3.5 % and -1.2 %, respectively). The boom in construction is clearly reflected in new orders (+15.3 %). Overall, the positive development in various economic sectors has led to a significant fall in unemployment to 4.7 %.

Thuringia: Industrial sector compensates for weak services

Economic growth in Thuringia is likely to equal the German national average of 2.8 % in 2021 and this is borne out by the trend in the first eight months of the year. Industrial companies in Thuringia posted a 13 % increase in sales, also in line with the national German average, with all major industrial sectors registering gains. The diversified nature of Thuringia's industry will once again underpin average economic growth of 3.9 % in 2022, for it provides many opportunities for digitisation and sustainability that will be in demand over the next few years. With domestic and international orders rising by 25 % and 32 %, this also holds a lot of promise for next year.

Since domestic German guests make up the overwhelming bulk of the state's tourist receipts, Thuringia's tourist industry has recently managed to make up some ground, although overnight stays are still 55 % lower than in 2019. Service providers and the construction industry, whose business is more closely geared to the needs of the local population, are increasingly struggling due to demographic trends and only make a below-average contribution – if any at all – to economic growth. Even today, the labour market is feeling the effects of an ageing workforce. Thuringia has a below-average unemployment rate of 4.9 % (Germany in October 2021: 5.2 %) and the



number of employees subject to social security contributions rose by only 0.4 % in August compared to the previous year (Germany: 1.5 %).

North Rhine-Westphalia: Below-average growth

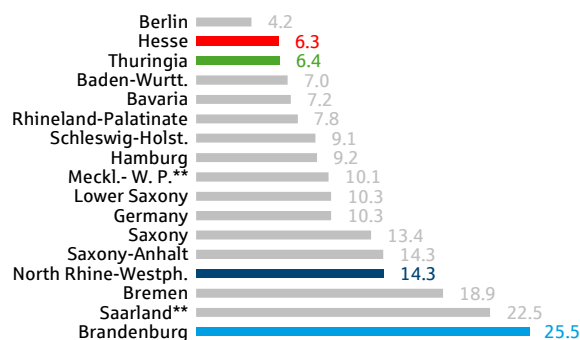
In North Rhine-Westphalia (NRW), the economy grew by 1.8 % in the first half of 2021 and therefore one percentage point less than the national German average. However, the -4.4 % contraction in 2020 was also smaller. The nationwide slowdown due to the limited supply of intermediate products will have an impact on North Rhine-Westphalia's GDP and the state should see growth of around 2 % in 2021 as a whole.

Just as after the 2008 financial crisis, the pace of recovery has been less dynamic in NRW; consequently, it is unlikely to achieve a growth rate in 2022 above 3.6 %. Indeed, only 17 % of economic output in the state comes from cyclical industries, while the service sector, including the state, accounts for 73 % of GDP. This composition of the economy, which is the result of many years of decline in the coal, iron and steel industries, will undergo further transformation as manufacturing processes are decarbonised and consumer behaviour changes. After all, among German federal states, NRW is the largest emitter of CO₂ equivalents (in metric tons) and one of the largest per capita sources of greenhouse gases.

Compensation payments that have been announced to cushion the impact of phasing out coal should not be strictly limited to the directly affected regions in NRW. Instead, it would be better to tackle problems together. Even now, there is a pressing need to encourage flexibility by embracing modern concepts of mobility and digital connectivity for workplaces. The average unemployment rate of 10 % in the 22 urban districts, in which just over 40 % of the state's population lives, is twice as high as in rural districts.

Coal mining regions face major challenges

CO₂ equivalents in metric tons* per capita of population, 2018



*excl. international air traffic **estimated based on previous years' figures

Sources: Umweltök. Gesamtrechnungen der Länder, Helaba Research & Advisory

Brandenburg: Downturn less severe – upturn less robust

At 1.5 %, Brandenburg's economy is expected to record one of the lowest rates of growth among German federal states in 2021. It is forecast to double in 2022 but will still fall well short of the average in Germany. The economic downturn due to Covid-19 was comparatively modest in 2020 at -3.2 %; hence why catch-up effects are correspondingly lower. A key factor in this is probably the state's proximity to the German capital, Berlin, which is less sensitive to economic cycles and has similar growth rates.

In the first eight months of 2021, Brandenburg's industrial sector registered below-average growth of 8 %, although new orders rose by just over 30 % and there are signs of a further recovery. The construction industry seems to be taking a breather in 2021 after revenues increased extremely sharply in previous years. Momentum in the retail sector is strong, with real growth of 4.6 % (Germany: 1.5 %). The number of overnight stays 51 % lower than in 2019, a far cry from pre-Covid levels. Berlin Brandenburg Airport still has a long way to go before it reaches its originally projected traffic levels. Compared to the passenger numbers of the two former Berlin airport, the new airport is 85 % below 2019 figures.

A key challenge for Brandenburg is tackling climate change. Due to its coal mining industry, the state is responsible for emitting 7.5 % of greenhouse gases in Germany and has the highest per-capita emissions among federal states. In view of the fact that Brandenburg has a jobless rate of only 5.3 %, funds to offset the impact of phasing out coal should be distributed in such a way that they reflect expected demographic trends.

Barbara Bahadori



France: The challenge after the crisis

France has weathered the pandemic well but at the cost of higher national debt. No structural reforms are to be expected before the next presidential elections.

France has beaten Germany in surpassing its pre-pandemic GDP level as early as 2021. However, it also suffered a sharper downturn. In 2022, with growth of 3.6 %, the pace of recovery will move closer towards normal levels.

In the autumn of 2021, the number of new Covid cases rose more slowly from a low level than in Germany, while pandemic-induced uncertainty has since declined. Growth in consumer spending of around 4 ½ % in 2021 has climbed significantly. In 2022, both wages and salaries are expected to increase by 2.2 %, which would mark another year of falling real incomes. On the bright side, however, employment will edge up slightly. Unemployment has come down to its pre-crisis level and the number of people in short-time work has decreased sharply. Given the high baseline at the beginning of the year and a lower savings rate, consumption should once again increase by 4 % in 2022.

		2020	2021e	2022f	2023f
GDP, real change	% yoy	-8.0	6.7	3.6	1.7
Inflation rate	% yoy	0.5	2.0	2.2	2.0
Unemployment rate	%	8.0	7.9	7.4	6.9
Budget balance	% GDP	-9.1	-8.5	-5.5	-4.0

Sources: Macrobond, Helaba Research & Advisory

So far, soaring energy costs have barely had any impact on consumer confidence, partly thanks to temporary caps on gas and electricity price hikes imposed by the government. Planned benefit payments of 100 euros for low-income households are more sensible from an economic perspective than this intervention in the price-setting mechanism. France's overall per capita emissions of greenhouse gases are significantly lower than Germany's. In this respect, the country's strong reliance on nuclear energy and the relatively low importance of primary industries plays a crucial role.

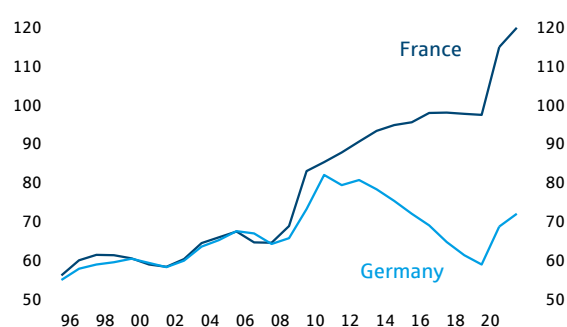
French equipment investment is likely to have surged by 9 % in 2021. Despite robust economic growth and attractive financing conditions, this figure is expected to be considerably lower in 2022. With an increase of 15 % in 2021, construction investments have even surpassed their pre-pandemic level. Meanwhile, a shortage of labour, a lack of land available for construction and high costs are acting as a brake. A recent fall in the growth of residential building permits indicates a modest increase in construction in 2022. In contrast, foreign trade is not expected to provide any boost to the economy in 2022, as imports are rising at a similarly strong rate as exports.

With a broad package of measures, the French government had cushioned the economic fallout from the pandemic. In the meantime, more positive economic and job figures have prompted them to scale back this financial assistance. In 2021, the government debt has ballooned to almost 120 % of gross domestic product. Unlike Germany, France did not manage to reduce the surge in government debt after the economic and financial crisis of 2008/2009.

Consolidating public finances and making structural reforms will not be on the agenda in the run-up to presidential elections in April 2022. However, these issues must be urgently addressed to prevent a jump in the national debt with every fresh crisis. This is even more imperative given the additional challenges the government will face in terms of mitigating climate change. Spending on research and development would have to rise in order to boost the country's growth potential. Transferring the results of research to the private sector could also be optimised. Finally, in order to reduce the deficit in the pension system, there is no alternative to reforming it. The only hope is that the government will implement the necessary reforms after the presidential elections.

Urgent action needed before the next crisis

National debt, in % of GDP



Sources: Macrobond, Helaba Research & Advisory



Italy: A sustainable economic boom?

Thanks to its expansionary fiscal policy, Italy surprises with strong growth. Without structural economic and environmental reforms, however, this success will remain a one-off effect.

The Italian economy has picked up steam. High vaccination rate is not the only reasons for optimism. The EU's "NextGenerationEU" recovery plan, from which Italy alone will receive transfer payments of 69 billion euro or almost 4 % of GDP, is also lifting morale in the country. Business and consumer confidence have reached record levels.

		2020	2021e	2022f	2023f
GDP, real change*	% yoy	-9.0	6.3	3.7	1.7
Inflation rate	% yoy	-0.1	1.8	1.9	1.7
Unemployment rate	%	9.3	9.6	8.5	7.9
Budget balance	% GDP	-9.6	-9.0	-6.0	-4.5

*calendar adjusted; Sources: Macrobond, Helaba Research & Advisory

In 2021, the country should see its economic output rise by more than 6 %. In 2022, growth will also remain strong at 3.7 %. A large part of this new-found success can be attributed to the government's current, highly expansionary fiscal policy.

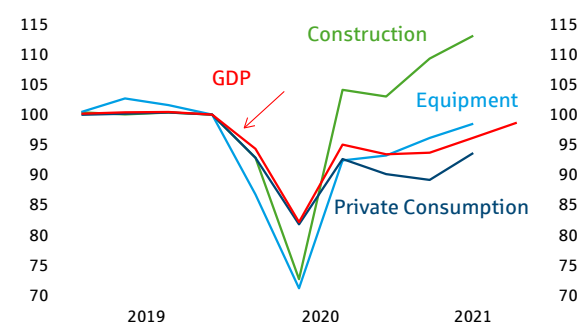
Yet, this does not mean that Italy is back on track. Structural deficits, which have brought about chronically sluggish growth and low productivity over the past decades, have not been eliminated. This comes on top of challenges posed by climate change, which the technocratic administration led by Mario Draghi has added to its list of priorities. Nevertheless, the government has got off to a flying start. In addition to a successful roll-out of the vaccination programme, it has come a long way in implementing judicial reforms intended to shorten lengthy court proceedings. However, the so-called "Competition Decree", which was only passed after some concessions were made, illustrates how much resistance there is to reform from certain interest groups. The aim of the law is to ensure greater competition in a variety of service sectors.

Italy also faces a further decline in its working-age population over the next few years. Despite a high unemployment rate of currently more than 9 %, there is already a shortage of skilled labour. The solution to this problem would be to raise the productivity of the remaining employees and to upskill jobseekers. The government now wants to provide better support to young people in vocational training in order to facilitate the transition from school to the job market. In addition, it aims to boost the traditionally low workforce participation rate, especially among women. That is why the recovery plan includes greater investment in childcare.

As private households will benefit from the recovery, it will be easier to implement reforms. In 2021, consumer spending is expected to have increased by 4.5 % and the job market is improving. However, higher inflation combined with only a slight increase in collectively agreed wages will have a dampening effect. Energy prices, which have risen sharply, are only likely to decline gradually. At 1.9 %, inflation in 2022 will probably be at a similar level to the previous year. That said, consumer spending will record above-average growth of 4.5 % in 2022, partly thanks to the decision to grant tax relief to private households.

Italy's construction boom

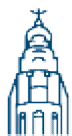
Index: Q4 2019 = 100, real



Sources: Macrobond, Helaba Research & Advisory

Italy has already begun to channel EU funds into construction projects and investments in the non-residential construction sector are significantly above pre-crisis levels. Housing construction is also recovering. In 2021, total construction investments are projected to have increased by at least one-fifth. Sentiment in this sector is considerably more optimistic than in other industries, which suggests that brisk construction activity will continue into 2022 and beyond. Foreign trade has had a mildly negative impact on growth in 2021 and is not expected to make a positive contribution in 2022, either. A high level of capital expenditure and catch-up effects in consumer spending will boost imports.

Dr. Stefan Mütze



Spain: Latecomer with catch-up potential

Tourism and construction spending, which remain weak, are still holding back Spanish growth. The recovery should continue into 2022, supported by the NextGenerationEU stimulus fund.

Spain is lagging behind in its recovery from the Covid-19 slump. Although gross domestic product is likely to have risen by more than 4 % in 2021, it will still be almost 6 % lower at the end of the year than at the end of 2019. Other European countries have made more headway in this respect. One reason for this is the fact that tourism, which accounts for a significant proportion of total economic output at around 14 %, is only gradually picking up again. For example, tourist spending in the summer of 2021 was still less than half of what it was in 2019; however, there are signs of further improvement. Yet, having rebounded rapidly, momentum in Spanish industry has meanwhile slowed down. As in other countries, companies are also struggling due to a shortage of available intermediate products while their order books remain healthy.

		2020	2021e	2022f	2023f
GDP, real change	% yoy	-10.8	4.3	4.6	2.2
Inflation rate	% yoy	-0.3	2.9	2.8	2.2
Unemployment rate	%	15.5	14.6	12.4	11.9
Budget balance	% GDP	-11.0	-9.0	-5.5	-4.0

Sources: Macrobond, Helaba Research & Advisory

Estimates indicate that consumer spending has increased by 5 ½ % in 2021, having previously plummeted by 12 %. 2022 should see a further return to normality with consumption growth of around 5 %. Collectively agreed wages have increased by just 1 ½ % in 2021 and only a modest improvement is expected here in 2022 as well.

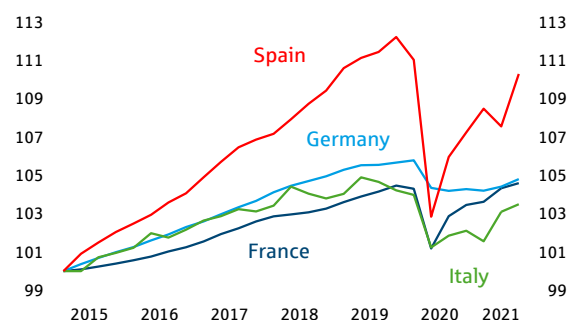
In contrast, corporate and investment income have gathered pace again. Consumption is being hampered by a high inflation rate of most recently 5.5 %. On average, prices are forecast to rise by just under 3 % in 2022. On the other hand, the labour market will have a positive impact. Employment numbers are soon likely to reach their pre-pandemic levels and unemployment is declining. In addition, the government has allocated funds in the new budget to younger people, in particular, such as for higher scholarships, vouchers for cultural activities and housing subsidies. In common with many other European countries, it is unlikely that public finances will be consolidated, despite the fact that the national debt currently stands at 120 % of GDP. We expect only a gradual decline in the public spending deficit.

Equipment investment in Spain has already compensated for the sharp contraction of 2020 with growth of around 14 % in 2021. However, the rate of increase has recently decelerated. With supply bottlenecks receding, conditions will improve in 2022 as industrial sectors should resume higher levels of investment. The NextGenerationEU recovery fund will also contribute to higher capital formation, with Spain alone receiving transfer payments equivalent to 5.8 % of its current economic output.

These funds have been primarily earmarked to support digitisation and measures to address climate change. Among other things, Spain is focusing its efforts here on electromobility concepts. In addition to new railway lines, housing and urban redevelopment should lead to more construction activity. This will partially compensate for the decline in residential construction investment in 2020 and 2021. The rent cap passed by the government, which applies to owners of more than ten properties in areas where affordable housing is scarce, will probably not be very conducive to investment. In addition, 30 % of new building projects must be allocated to social housing. In spite of these measures, investment in residential construction is likely to expand moderately in 2022. Foreign trade has been a drag on economic growth in 2021. Imports have risen sharply, while exports have been somewhat impeded by supply chain problems in Spain as well. In 2022, the net exports should remain stable.

Significant rise in Spanish employment numbers

Number of employees, index: Q1 2015 = 100



Sources: Macrobond, Helaba Research & Advisory

Dr. Stefan Mütze



Sweden: Government faces challenging election year

Parliamentary elections are not the only thing the government will be able to devote itself to in 2022. The squeezed housing market and the EU taxonomy will also tie up capacities.

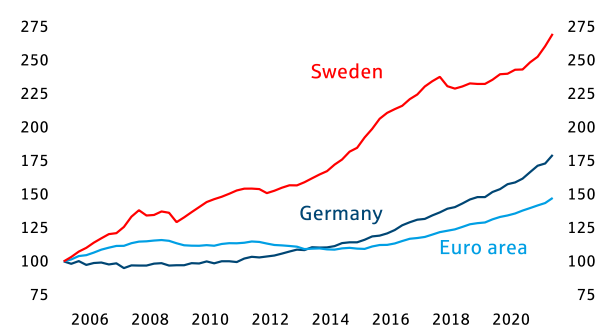
The Swedish economy left the crisis behind it in 2021 with GDP expected to grow by 4.3 %. High energy prices will slow down the expansion in 2022, although at 3.2 % growth will still be above its pre-crisis level. A healthy rise in industrial confidence, among other things, underscores this picture.

Consumer spending still forms the backbone of this recovery, albeit energy prices are taking their toll on purchasing power. During the pandemic, the savings rate of private households rose to just over 20 % and unemployment is expected to decline in 2022. About 70 % of the whole population have been fully vaccinated. From today's perspective, combatting the pandemic won't bring any further restrictions. The budget provides 74 billion krona (1.4 % of GDP) for investments and tax cuts, among other things.

High energy prices and supply bottlenecks e.g. for various materials, which are driving up manufacturing prices, remain a source of risk to economic growth. House prices have also reached a new all-time high and have contributed to pushing up the gross debt-to-income ratio of households to more than 170 % (euro area: 96 %). 2022 will see the average inflation rate climbing to around 2 %.

Sweden: Record highs on the housing market

Eurostat house price index, 01/2005 = 100



Sources: Macrobond, Helaba Research & Advisory

You must do the impossible. Because giving up can never ever be an option.

Greta Thunberg, addressing the US Congress in 2019

While this is rather high compared to the long-term average, it is low by international standards. The principal reason here is the fact that Sweden is less dependent especially on the gas price, which has risen dramatically, than many other countries. The bottom line is that inflation remains within

the central bank's target range of 2 % +/- 1 percentage point. In terms of monetary policy, the Riksbank is taking the first steps towards normalisation, with net bond purchases to be phased out by the end of 2021. In 2022, the key interest rate is likely to remain at its current level of 0 % to avoid jeopardising the recovery. So far, the central bank has regarded the current period of higher inflation as a transient development. The currency should appreciate in the course of 2022 and trade at a level more clearly below the 10 krona/euro mark.

Government faces challenges

Since the resignation of the prime minister, Stefan Löfven, in November 2021, preparations have been underway for the parliamentary election in September 2022. Until then, the minority administration of Social Democrats and Greens will have to manage the transition from dealing with the immediate Covid-19 crisis to pursuing long-term growth policies. In this respect, grants from the EU's Recovery and Resilience Facility amounting to around 1 % of GDP will play a smaller role than in some other countries thanks to Sweden's strong fiscal situation. On an international level, one of the challenges will be to agree on further EU taxonomy standards. One controversial issue here is the classification of nuclear energy, of which Sweden is also a supporter. Domestically, the question of how to integrate immigrants into the labour market, among other things, will feature prominently in the election campaign. Another major area of debate, though, is the acute housing shortage and the quest to find effective solutions. Greta Thunberg is not the only one calling for the pursuit of the impossible.

		2020	2021e	2022f	2023f
GDP, real change*	% yoy	-2.9	4.3	3.2	2.0
Inflation rate	% yoy	0.5	2.1	2.0	1.4
Unemployment rate	%	8.3	9.0	7.9	7.0
Budget balance	% GDP	-3.0	-1.5	0.0	0.5

*calendar adjusted; Sources: EU, EIU, Macrobond, Helaba Research & Advisory

Marion Dezenter



Poland, the Czech Republic, Hungary: Relations with EU as a factor for growth

Stable economic growth and high rates of inflation have set the stage for further interest rate hikes by central banks. However, conflicts with the EU threaten to act as a brake.

The recovery is underway but the momentum among the three Central European countries is uneven: The pace of growth in the Czech Republic is much slower. Here, the automotive industry is the main victim of supply shortages, particularly of semiconductors. Assuming these issues can be overcome over the course of 2022, the economy can be expected to benefit from pent-up demand.

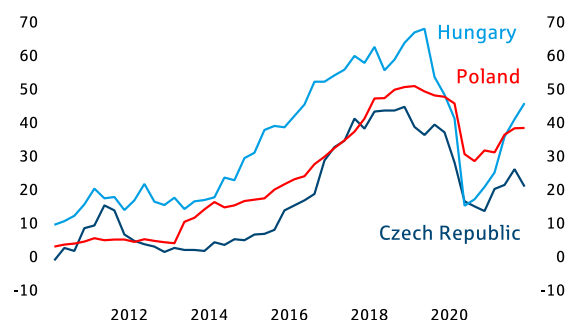
Tourism plays a greater role in the Czech Republic and Hungary (approx. 8 % of GDP) than in Poland (just over 4 %). The number of overnight stays does not yet reach pre-crisis levels, but they should bounce back in 2022. Poland benefits from having a more diversified economy, a larger domestic market and resilient consumer spending, which will be supported by fiscal policy from January 2022 with the "Polish Deal". Consequently, economic growth in 2022 is forecast to gain pace in the Czech Republic, while stabilising on a high level in Poland and Hungary.

Inflation still on the agenda

Supply chain disruptions and shortages of materials are fuelling producer prices, but unit labour costs are also increasingly acting as a drag on manufacturing industry again. As a result, companies will pass on higher costs to consumers wherever possible. The effects of sharply higher energy and food prices, which have fanned inflation in 2021, should diminish somewhat in the course of the year. However, as supply bottlenecks will remain an issue for at least the first couple of months and the shortage of skilled labour will persist for a while, inflation is initially set to stay elevated for some time and reach average levels over the year of between about 3 ½ % (Czech Republic) and 5 % (Poland).

Skilled worker shortage is back

Factors limiting production: Labour, %, seasonally adjusted



Sources: Macrobond, Helaba Research & Advisory

		Poland				Czech Republic				Hungary			
		2020	2021s	2022p	2023p	2020	2021s	2022p	2023p	2020	2021s	2022p	2023p
GDP, real change	% yoy	-2.5	5.0	5.3	4.3	-5.8	2.7	4.6	3.3	-4.8	6.9	4.6	3.5
Inflation rate	% yoy	3.4	5.0	4.7	3.0	3.2	3.9	3.4	2.2	3.3	5.0	4.5	3.0
Unemployment rate	%	5.9	6.1	5.7	5.5	2.8	3.6	3.8	3.3	4.0	4.2	3.9	3.6
Budget balance	% GDP	-7.0	-6.6	-3.9	-3.0	-6.1	-8.3	-5.7	-5.2	-8.1	-6.9	-4.3	-3.8

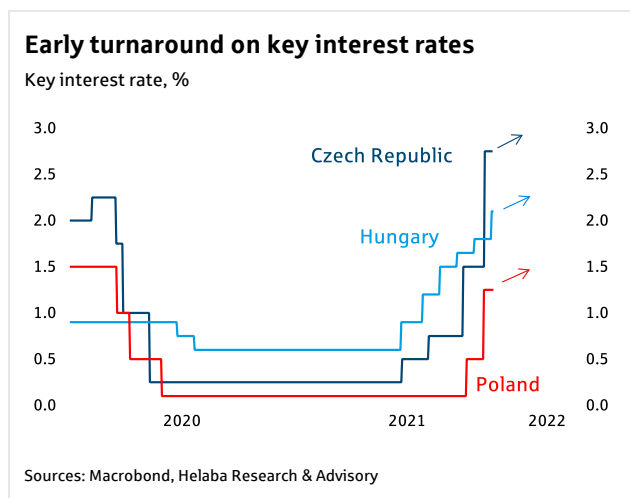
*calendar adjusted; Sources: EU, EIU, Macrobond, Helaba Research & Advisory

Central banks take early and decisive action

The pace at which central banks have responded to rising prices varies considerably from country to country: In the Czech Republic and Hungary, a process of normalisation has been underway since as early as June 2021. The Polish central bank started hiking rates in October, having previously stressed for a long time the temporary nature of high inflation. Meanwhile, key interest rates vary between 1.25 % in Poland and 2.75 % in the Czech Republic. Assuming governments are able to manage the overall Covid situation and that the economies continue to grow strongly, it is likely that additional interest rate hikes will follow. However, the pace of monetary policy tightening may be hampered by low vaccination rates coupled with the risk of economic setbacks.

The three currencies will benefit from the more attractive interest rates and will also receive a boost from the better growth prospects. However, the exchange rates of the koruna, forint and zloty to the euro have frequently indicated uncertainty on the part of investors, with Poland and Hungary's conflicts with the EU, in particular, putting pressure on their currencies. Although the koruna has been considerably more stable since the onset of the pandemic, the Czech Republic, which holds the Presidency of the Council of the European Union in the second half of

2022, cannot fully extricate itself from turbulence in the region. The exchange rates in 2022 will also reflect the way relations with the EU are managed. However, it is unlikely that there will be any rapid easing of tensions.



Nevertheless, the Polish Prime Minister, Mateusz Morawiecki, does not want the ruling by the Constitutional Court on the primacy of Polish law over EU law to be interpreted as the first step towards a "Polexit": "Poland is and will remain a member of the European Union". In any case, leaving the Union would be at odds with public opinion: according to a 2021 EU survey, 81 % of Poles feel they are EU citizens, more than the EU average (72 %). In contrast, 60 % of Poles said they did not trust their own national legal system (EU average: 43 %). Hungary, where parliamentary elections will take place in April 2022, considers itself "on Poland's side". Despite this, even here the vast majority (78 %) claim to identify as EU citizens. Just like in Poland, the people's attachment to the bloc is higher than the average among EU member states.

Good international relations the basis for long-term economic development

An EU regulation came into force at the start of 2021 that allows the EU to withhold funds if the rule of law in any member state is found to be under threat and, as a result, there is a risk of financial loss. It is currently subject to a review by the European Court of Justice (ECJ) following objections by Poland and Hungary. A landmark decision by the ECJ is expected to be handed down in the near future. In contrast to these two countries, whose recovery and resilience plans have not yet been approved, the EU disbursed almost one billion euros from its NGEU facility at the end of September 2021 to the Czech Republic in order to fund, for instance, improvements to the energy efficiency of buildings. EU Commission President, Ursula von der Leyen, announced that she would block Poland's funds as long as controversial judicial reforms were not reversed and the ECJ has imposed punitive fines. Poland has applied for about 24 billion euro in grants and 12 billion euro in loans from the NGEU programme. Hungary and the Czech Republic have each requested grants of about 7 billion euro. This comes up to between around 3 % (Czech Republic) and 7 % (Poland) of pre-crisis GDP.

But the prospect of stimulus funds is not the only thing that underlines the fact that political stability and membership of the EU are vital prerequisites for a sustainable economic model. The bond markets indicate just as

This Treaty marks a new stage in the process of creating an ever-closer union among the peoples of Europe (...)

Article 1, Treaty on European Union, 2009

much: with the yield on ten-year government bonds rising by around 100 to 200 basis points in 2021 and spreads to the German benchmark widening, borrowing has become more expensive. Apart from monetary policy, risk assessments are also likely to have played a role here. So far, the three countries still score well in terms of public finances: national debt is expected to reach between around 40 % of

GDP (Czech Republic) and 80 % (Hungary) in 2022, compared to an EU average of approximately 90 %. Only time will tell whether the governments' fiscal policies are sustainable in the medium term when the effect of an ageing, shrinking population on social security systems becomes gradually clearer.

Poland's and Hungary's relations with the EU, in particular, will be severely tested in the near future as the EU wants to expand its taxonomy regulation by adding social and governance aspects. Conflicts can be expected regarding the position of the right-wing populist governments on issues such as diversity and gender. If individual member states pursue blocking tactics, this may impede the EU's capacity to act and its progress on a number of fronts, e.g. climate policy. Therefore, it is in everyone's interest that conflicts are resolved through dialogue.

Marion Dezentner



United : Kingdom: Following its own, arduous path

The economic recovery is losing steam, despite continued above-average growth. Many negative aspects of Brexit are coming to the fore, while monetary policy is taking corrective action.

The turmoil in the United Kingdom just will not end. After years of bickering over Brexit and a pandemic that ravaged the country and resulted in a historic recession, new and serious problems are emerging: shortages of key workers and certain essential products, such as petrol and natural gas. Both Brexit and Covid-19 have a part to play in these difficulties, which will have an impact on growth and inflation as well as on monetary policy.

The British economy has rebounded strongly in 2021 and, with GDP growth of 7 %, is well ahead of its peers. Although the rapid pace of vaccinations has helped, this impressive performance does not owe much to Brexit. Instead, it is the result of catch-up effects after the previous deep recession. As one of the main drivers of economic growth to date, consumer spending looks set to stall somewhat in 2022. In addition to more cautious behaviour by consumers, a limited supply of goods and services in some areas will also have a negative impact. Due to a lack of foreign workers in the wake of the Brexit, some shortages may even persist for longer. However, rising incomes thanks to a buoyant labour market, together with high levels of savings, will support consumption. Fiscal policy will hold back growth since there is almost no room for further increases in public spending, which has skyrocketed since the pandemic. Thanks to higher tax receipts, partly due to a rise in national insurance taxes, the budget deficit will fall.

Growth in business investment is expected to remain firm, with a corporate tax hike not taking effect until 2023. Brexit has adversely affected trade, although EU exporters have – so far – been slightly harder hit than the British. It will probably make a negative contribution to growth. Additionally, Brexit harbours even more uncertainty, as the dispute over the Northern Ireland Protocol shows. Leaving the EU has not generated positive effects, as the British government is only now gradually seeking to exploit its scope for regulatory freedom. Overall, the British economy should expand by 4 % in 2022 – well above long-term trend growth. However, growth will slow down considerably over the course of the year.

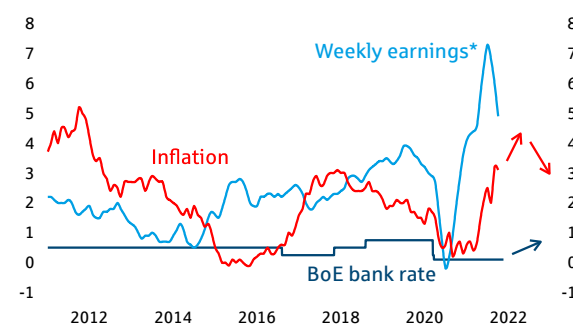
“When Kermit the Frog sang ‘It’s Not Easy Bein’ Green’ I want you to know he was wrong. It’s not only easy, it’s lucrative and it’s right to be green”.

Boris Johnson, UK Prime Minister

As a result of shortages and delayed price increases, inflation is set to rise sharply in 2022. At times, it will probably exceed a level of 4 %, but should ease back again in the second half of the year. Strong wage rises leading to possible second-round effects – over and above one-off effects due to the pandemic – are a cause for concern. Overall, inflation is likely to settle at around 3.6 %. That is making the Bank of England nervous and it has already laid the groundwork for an interest rate hike. We anticipate that it will raise its bank rate from a current level of 0.1 % to 0.75 % by the end of 2022.

Inflation fears haunt Bank of England

% or % yoy



*average, regular, 3-month average

Sources: Macrobond, Helaba Research & Advisory

The UK government is mainly trying to achieve its climate goal – net zero emissions by 2050 – by providing start-up finance for the private sector. In addition to subsidies for retrofitting buildings and electric cars, it also plans to invest in nuclear energy and carbon capture technology. Among G7 countries, the UK is leading the way in decarbonisation as the "Saudi Arabia of wind".

		2020	2021e	2022f	2023f
GDP, real change	% yoy	-9.7	6.9	4.0	1.8
Inflation rate	% yoy	0.9	2.4	3.6	2.7
Unemployment rate	%	4.5	4.8	4.6	4.4
Budget balance	% GDP	-12.9	-10.0	-5.0	-4.0

Sources: Macrobond, Helaba Research & Advisory

Christian Apelt



United States: Full steam ahead for investment – supply plays catch-up

Demand has outpaced supply in the US to an even greater extent than in many other countries. The upshot of this is a drag on growth and surging inflation. 2022 will still be a positive year for the economy, helped by investment that plays a crucial part in making it possible for supply to catch up with demand. Inflationary pressure will likely remain elevated, but should gradually ease.

There are two principal factors that will determine the fate of the US economy over the next few quarters. Firstly, how quickly the impact of the pandemic and the associated restrictions on people's lifestyles subside. This will influence demand for personal services, the propensity of consumers to spend part of the vast excess savings they accumulated in 2020/2021 and the readiness of people to take up new employment. By these measures, the country is still a long way from normality as 2021 draws to a close.

Secondly, with the help of ultra-expansionary fiscal and monetary policy over the last two years, the recovery has tested the flexibility of supply on a scale not seen for a long time. Shortages of raw materials and intermediate goods as well as logistic bottlenecks are acting as a drag on growth by directly capping the output of companies affected. The resulting price rises chip away at the real incomes of private households. The question of how quickly the supply side can close the gap to demand will be one of the key issues in 2022.

It is already noticeable that many companies are reacting with a significant increase in capital expenditure. We assume

that this expansion in capacity will continue over the next few quarters and that investment will act as a major factor in sustaining economic growth. At the same time, growth in consumer spending will slow considerably relative to 2021. However, in the absence of any comparable historical experience, it is extremely difficult to predict how quickly the bottlenecks can be eliminated. For 2022 as a whole, we forecast average GDP growth of 4 %. Although this is not quite as high as the 5.5 % recorded in 2021, it is still comfortably above US trend growth of less than 2 %.

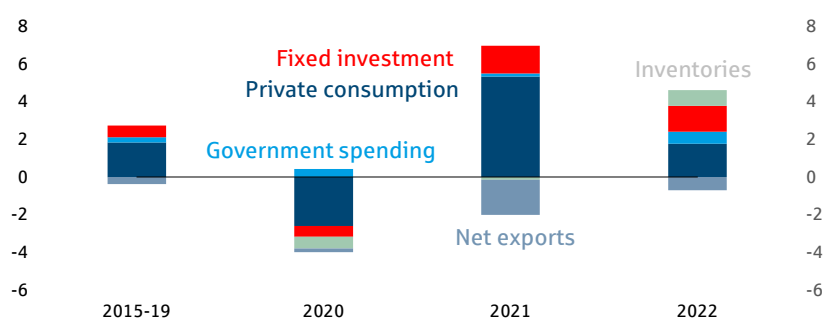
In the course of 2022, the jobless rate should already fall below the 4 % mark again, thereby satisfying the Fed's definition of full employment. However, given the upheaval that the pandemic has unleashed on the US labour market, we assume that, beyond the official jobless statistics, a pool of available workers outside the labour force will remain that will only gradually shrink over time. Many employers face severe difficulties in hiring and, although we look for these problems to ease, they will not vanish overnight.

Record stimulus: Only temporarily effective by nature

Fiscal policy, which has massively propped up growth during the pandemic, will hold it back in 2022. At the time of writing, the fate of one of the two major fiscal packages – the social spending bill – had not yet been decided. After months of wrangling, Congress finally passed the infrastructure bill. Our forecasts assume that both packages will eventually pass, with the social welfare part being trimmed considerably from its original volume of 3.5 trillion US dollar over ten years. Tax increases that were part of the original plans are also likely to be toned down during political horse-trading. However, even in this scenario, the extra spending that will take effect in 2022 is going to be much smaller than the enormous stimulus packages of prior years, with the result that fiscal policy will have a con-

Investment punching above its weight

Contributions to growth, percentage points of GDP*



*only approximation due to chain weighting. 2021 estimate, 2022 forecast
Sources: Macrobond, Helaba Research & Advisory

tractionary effect. Smaller deficits are urgently needed, since the US federal debt-to-GDP ratio has already returned to the previous record level following World War II. The increase in public debt in 2020/2021 even vastly eclipsed that which occurred during the 2008/2009 financial crisis.

Both major fiscal packages contain measures to reduce CO₂ emissions, after President Biden's predecessor had categorically rejected any steps in this direction and was even a firm believer in promoting fossil fuels. Yet, these new policies mainly consist of subsidies, tax credits and direct public investment. The plans contain neither a carbon price nor an increase in federal gasoline taxes, which have been nominally fixed in the US since 1993. In view of fundamental resistance from Republicans to such measures, Biden probably believes that any additional burdens like this would be unacceptable to the American people.

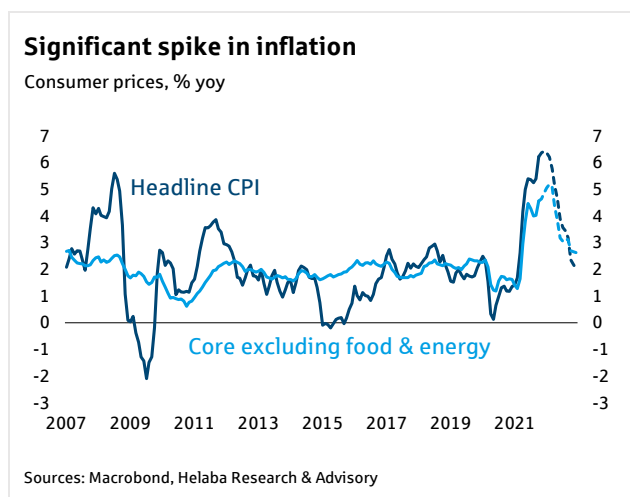
*100 % of our focus is on stopping
[President Biden's] administration.*

Mitch McConnell, US-Senate Minority Leader

The clock is ticking for Democrats to realise their entire policy agenda, not just on action to tackle climate change. It is looking increasingly likely that they will lose their majority in the Senate and perhaps even in the House of Representatives in the November 2022 congressional elections. The Republicans are unlikely to countenance any meaningful

steps towards decarbonising the economy. That is why the window of opportunity for implementing any measures on this front is likely to slam shut at the end of 2022.

Prospects for growth are not the only issue that depends on how quickly supply bottlenecks can be resolved; they will also, indeed especially, determine the path of inflation going forward. The spike in prices in the spring and



summer of 2021 largely reflected the fact that demand, fuelled in no small part by President Biden's stimulus package, quickly returned to normal in this period. This process has slowed down markedly and, as a result, the core index (excluding energy and food) has lost some momentum. The pressure on prices should gradually subside, even though it will probably take until well into 2022 before the severe bottlenecks have mostly dissipated. However, as expected, the central bank's forecasts have turned out to be overly optimistic. The imbalance between supply and demand will ensure that inflation remains high for months to come and thus above the Fed's 2 % target. Thus, although strictly speaking the jump in inflation is "temporary", it will be around for a while, particularly since the Fed is also fuelling rising prices by sup-

plying the economy with more than ample liquidity. Moreover, when it comes to trade policy, Joe Biden is following in the footsteps of the previous White House occupant. Consequently, there are no prospects for a removal of trade barriers that would help to reduce inflation.

On balance, these factors will likely ensure that inflation in 2022, at 4 %, will be lower than in 2021 (4.6 %), partly because we expect energy prices to move largely sideways. However, it will once again be well above the average of the last five years of 1.8 %. We forecast a core inflation rate of around 3½ % in 2022, about the same as in 2021. The last time the US recorded higher core inflation was when "November Rain" by Guns 'n' Roses was in the charts and "The Bodyguard" with Kevin Costner was showing in cinemas: in 1992.

		2020	2021e	2022f	2023f
GDP, real change	% yoy	-3.4	5.5	4.0	2.5
Inflation rate	% yoy	1.2	4.6	4.0	2.3
Unemployment rate	%	8.1	5.5	4.0	3.5
Budget balance	% GDP	-15.2	-12.0	-6.0	-5.5

*Federal incl. Social Security

Sources: Macrobond, Helaba Research & Advisory

Patrick Franke



Japan: Inflation creeping back

The process of making up lost ground in Covid vaccinations is kick-starting an economic recovery in Japan. Inflation is back in positive territory.

The rebound in Japan's economy seems to be gathering steam now that it has stepped up its vaccination drive and emerged from five Covid-19 waves that were accompanied by modest pandemic restrictions. The vaccination rate in the country is now over 70 % but infection numbers are rising again. Provided the pandemic can be contained and supported by new economic stimulus measures, sentiment should improve and catch-up effects should materialise.

In addition to higher consumer spending as a key component of GDP, increased capital expenditure in the corporate sector can also be expected in 2022, especially in green technologies. Japan's long-term goal of achieving carbon neutrality by 2050 as part of its green growth strategy, which defines precise, sector-specific plans, will require major investment in transforming its energy, manufacturing and transportation infrastructure. For instance, the sale of petrol-driven cars is due to be phased out in 15 years. Despite global production bottlenecks, exports are expected to contribute to the overall economic expansion in 2022. Altogether, this points to a real GDP increase of 2.8 % in 2022.

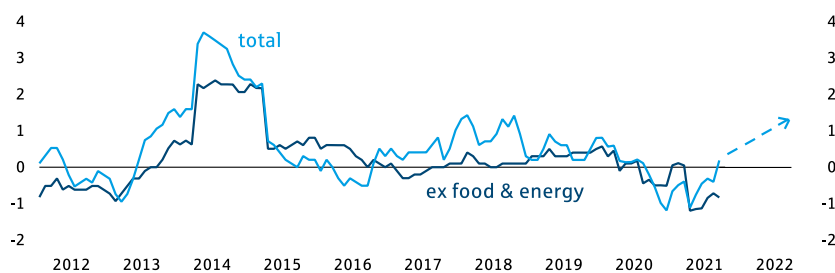
		2020	2021e	2022f	2023f
GDP, real change	% yoy	-4.7	2.0	2.8	1.5
Inflation rate	% yoy	0.0	0.0	1.5	1.0
Unemployment rate	%	2.8	2.9	2.7	2.5
Budget balance	% GDP	-10.1	-9.0	-8.0	-7.0

Sources: Macrobond, Helaba Research & Advisory

The Prime Minister, Fumio Kishida, who has been in office since October, is planning to stimulate additional growth via redistribution measures and higher wages. However, by OECD standards, Japan's population does not exhibit any particularly acute level of income inequality. In fact, Japan's growing problem lies in a shrinking and ageing population, which is having the effect of stifling economic growth in the world's third-largest economy. Domestically, there is only a limited pool of women and senior citizens who could be attracted to join the labour market. The Covid-19 crisis has thwarted previous efforts to open up the economy to migrant workers from abroad. Together with measures to de-bureaucratise and deregulate the country, it is vital that this issue is tackled in order to revive the productivity and dynamism of the Japanese economy. As such, the tax breaks for wage increases envisaged by Kishida are likely to result in an only temporary spike in consumption and growth in Japan.

Inflation back in the black

Consumer prices, % yoy



Sources: Macrobond, Helaba Research & Advisory

While other advanced economies are grappling with high rates of inflation, it is not yet an issue in Japan. Recently, the downward trend in consumer prices was halted and inflation edged up slightly into positive territory again amid higher energy prices. Months of falling prices in Japan were amplified by the statistical effect of an index adjustment.

As the economy continues to recover, the scope for companies to pass on higher prices to consumers is now rising so that the

upward trend in Japanese prices should progressively gather pace. Furthermore, a special, temporarily dampening effect in the mobile phone sector will disappear in the spring of 2022. As a result, we expect inflation to reach 1.5 % for 2022 as a whole.

Ulrike Bischoff



China: The new "indispensable" nation?

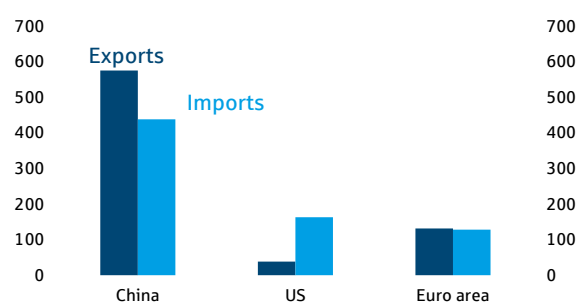
When future historians debate as to when exactly China replaced the US as the most important "player" in the global economy, they may well agree on the Covid-19 pandemic.

This statement may come as a surprise given the latest resurgence of concerns about bubbles bursting in China. But on a number of crucial issues – from the rules of international trade to the future of global supply chains and possibly even of how to deal with powerful tech companies – decisions made in Beijing are no less important than those made in Washington D.C. Ultimately, they are a more reliable indication of the country's influence on the global economy than any discussion of which economy is empirically "larger" (the US holds this distinction in nominal and China in purchasing power parity terms).

While "reshoring" may have become a popular buzzword, developments since the shock of the pandemic are a stark illustration of the pivotal role that China now plays in global supply chains. Chinese firms have decisive influence on global industry bottlenecks – for better or for worse. Establishing alternative production capacities on "greenfield" sites in industrialised countries can take years, not least due to protracted approval processes. For this reason, it is not a viable option for solving the immediate problems. Instead, it is worth paying close attention to the path of supply and demand in China, as reflected in exports and imports for example.

The "workbench of the world" in action

Exports and imports of goods, change 2019 to 2021*, USD bn



*For those months already available for 2021
Sources: Macrobond, Helaba Research & Advisory

After a disappointing performance in 2021 – the apparently spectacular average growth of around 8 % is primarily due to a huge statistical carry-over effect from 2020 – we expect to see healthy growth rates again in 2022. The full-year figure is projected to come in at a more "normal" 5.5 %. Estimates put China's current trend growth rate at around 5 %.

There's no getting around China

Nowhere is China more crucial than when it comes to climate policy. In 2018, the country's 24 % share of global GHG (greenhouse gas) emissions was higher than that of the United States, the EU and Japan combined. Hence, nothing will have a greater impact in determining whether emissions targets are met than what happens in China. So far, the leadership in Beijing appears to support international efforts to limit global warming with its own very ambitious targets. According to the Chinese government, the country is striving to stabilise its emissions, which have been rising sharply until recently, by 2030 and to achieve net zero carbon by 2060 – even harder to imagine. However, there are scant details on how these goals are to be achieved and it is unclear what priority they will ultimately have in the Chinese government's overall agenda. What will happen if political conflicts with industrialised countries escalate or if the latter impose sweeping "green" trade restrictions? If that were to happen, it would not be hard to see China portraying efforts to battle climate change as the West's newest tactic designed to prevent China's rise.

		2020	2021e	2022f	2023f
GDP, real change	% yoy	2.3	8.0	5.5	5.0
Inflation rate	% yoy	2.5	0.7	1.5	2.5
Unemployment rate	%	4.2	4.2	3.7	3.6
Budget balance	% GDP	-11.2	-7.5	-7.0	-6.0

Sources: Macrobond, Helaba Research & Advisory

Although China is a major factor in international shortages that drive up prices through global supply chains, this is not reflected in domestic consumer prices. They are rather dominated by the decline in prices for the meat staple pork. This is the cause of the unexpectedly weak price pressures: for 2022, we look for a rise in consumer prices of just 1.5 %.

Patrick Franke



Russia: Growth trending lower

With no election dates for two years, the government is able to shift its attention to consolidating public finances. Tight monetary policy will put a further damper on growth.

In 2021, the Russian economy is forecast to have grown by 3.7 %, with GDP already slightly above pre-crisis levels in the summer. That means the country has almost completely recovered from the effects of the pandemic. For 2022, we expect growth to ease off to 2.7 % as the boost provided by the high oil price gradually subsides. Added to that is the fact that the oil sector will not be able to reach its full potential, as OPEC's output restrictions will remain in force until at least April 2022 and Western

		2020	2021e	2022f	2023f
GDP, real change	% yoy	-3.1	3.7	2.7	2.0
Inflation rate	% yoy	3.4	7.0	5.8	4.2
Unemployment rate	%	5.8	5.0	4.5	4.3
Budget balance	% GDP	-3.8	-1.2	-0.2	-0.7

Sources: Macrobond, Helaba Research & Advisory

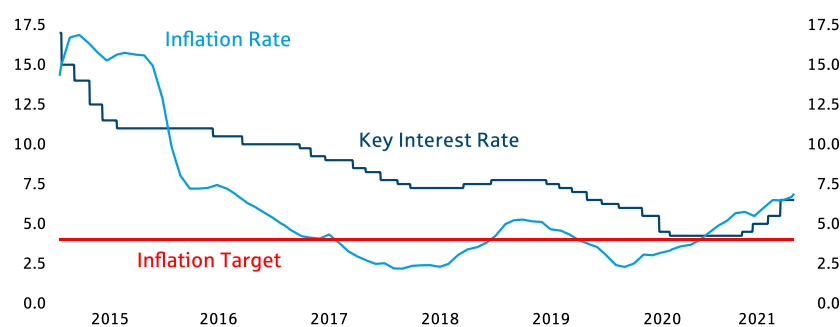
sanctions will be extended once again. As a result, no sizeable privatisations with significant interest from foreign investors are to be expected, which will impede the diversification of the economy away from oil and gas. On the other hand, Covid-19 no longer poses

any appreciable risk. Although the government has so far fallen well short of its goal of vaccinating at least 60 % of the population, in the first year of the pandemic the restrictions Russia imposed were relatively lax by international standards. In 2022, it will also refrain from taking any substantive action to contain the pandemic.

Inflation will decline to 5.8 % in 2022 as both growth in consumer spending and supply-side bottlenecks subside, but will yet again settle at a level above the central bank's target of 4 %. Faced with high inflation expectations, the Bank of Russia will maintain its tough monetary policy stance. Between January and October 2021, the key interest rate was lifted by 3.25 percentage points to 7.5 % and we expect a further rate hike in December 2021 or early 2022. As inflation pressures ease, monetary policy should become gradually more accommodative from the end of 2022 onwards.

For the first time since 2015 negative real interest rates

Inflation rate and key interest rate, %



Sources: Macrobond, Helaba Research & Advisory

Sustainability is not an issue of any great importance in Russia, except insofar as it concerns public finances. From the government's point of view, now is a good time for fiscal consolidation as the next presidential elections are not due until March 2024. In September's legislative elections, the ruling party "United Russia" only secured around 50 % of the vote, losing six percentage points. However, thanks to winning a large number of direct seats, it commands a substantial two-thirds majority in the Duma, enabling it to retain the power to amend the constitution.

So, in terms of fiscal policy, the government is set to embark on a path of consolidation from 2022 and, given the sanctions the country faces, one aim will be to accumulate reserves. The target of a budget surplus of 1 % of GDP should be close to being met. Public spending growth will be significantly curbed. President Putin's flagship development plan, the 13 "National Projects" with a volume of 360 billion US dollar, has been postponed until 2024. This delay will weigh more heavily on the private sector than on state-owned enterprises, which are already on a sound financial footing. Overall, these measures will limit the country's potential for growth.

Patrick Heinisch

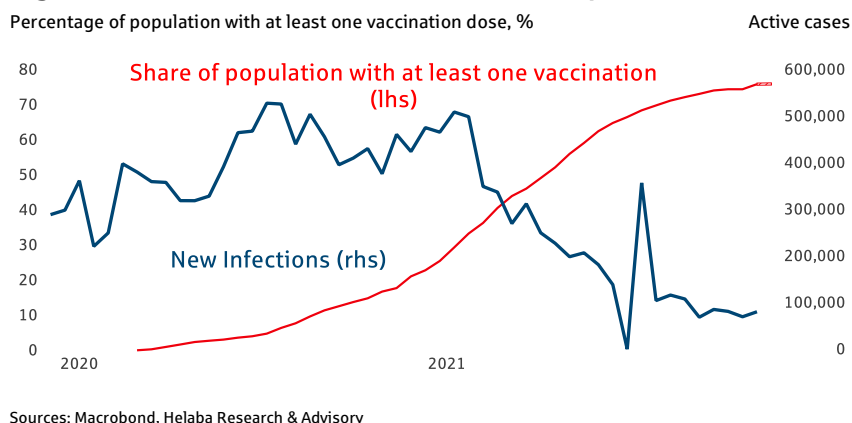


Brazil: Consolidation on hold due to elections

For the president, a sharp fall in growth in 2022 comes at an inopportune moment as the country heads to the polls. A social programme designed to turn the tide, adds to inflationary pressures.

Having bounced back strongly from the pandemic with growth of 5.3 %, 2022 will see a sharp slowdown to 2.2 %. As the vaccination campaign makes good progress, the service sector will be able to operate almost without restrictions again. By the end of October 2021, three quarters of Brazilians had already received at least one dose of a Covid-19 vaccine. However, that's where the good news end. The worst drought in 91 years, which struck in late summer, dealt a body blow to the otherwise thriving agricultural sector and it will not have fully recovered from this by the end of 2022. What is more, the electoral calendar will ensure the absence of structural reforms needed to stimulate growth. Although there has been some progress on privatisations in 2021 (e.g. the decision to partly privatise the state-owned electricity company Eletrobrás, the privatisation process of the postal service), trade liberalisation as well as public sector reforms are falling by the wayside.

High vaccination rate in Brazil enables control of pandemic



At 5.2 %, inflation will remain well above the central bank's target of 3.5 % in 2022. Previous interest rate hikes were only able to partially entrench inflation expectations. A further increase in the key SELIC interest rate is on the cards for the beginning of 2022. If there should be any turmoil on the financial markets in the run-up to presidential elections in October, the central bank will step up its restrictive monetary policy, even if this puts additional strain on an already flagging economy.

		2020	2021e	2022f	2023f
GDP, real change	% yoy	-4.1	5.3	2.2	2.4
Inflation rate	% yoy	3.2	7.0	5.2	3.8
Unemployment rate	%	15.7	12.0	9.7	9.2
Budget balance	% GDP	-15.8	-6.0	-5.4	-5.0

Sources: Macrobond, Helaba Research & Advisory

In order to mobilise his voters, President Bolsonaro recently launched a wide-ranging social welfare programme for poorer sections of the population to the tune of BRL 30 billion, which is designed to replace the existing "Bolsa Familia" scheme. It seems likely that the constitutional provision limiting spending increases to the inflation rate will once again be circumvented with the approval of Congress. As a result, much-needed budget consolidation in

light of high government debt and pressure from interest payments will not be on the agenda until 2023. Consequently, this expansionary fiscal policy is more likely to create inflationary pressure and greater market volatility than to provide any meaningful support to the economy.

"Bolsonaro is not a populist president, he is a popular president"

Paulo Guedes, Minister of the Economy, 2021

Thanks to the new social programme as well as rising vaccination coverage, Bolsonaro's popularity will probably improve in the months leading up to the election. He is also backed by the business community, which is wary of the stronger interventionist policies espoused by left-wing rival and former president Lula. Even if current opinion polling still points to a victory for Lula, the incumbent is by no means out of the race.

Patrick Heinisch



Negative scenario: Worst.Vacation.Ever. (10 %)

Our worst holiday memories tend to be not of journeys during which one single thing goes horribly wrong. It is usually a combination of multiple factors that make us wish we had never had this experience in the first place. The most negative phases of the economic cycle are similar: typically, external shocks, existing problems or imbalances as well as policy missteps combine to take the economy and financial markets along on the worst vacation ever.

Unfortunately, Covid-19 remains on the list of potential factors that could result in a significantly worse macroeconomic outcome in 2022 than what we forecast in our baseline scenario. The issue is far from being resolved, and not only in many developing countries with low vaccination rates. New, more aggressive virus variants could necessitate a fresh round of restrictions. Even if these are not as severe as previous lockdowns, the scope of the economic recovery being interrupted for a quarter or two should be obvious.

Potential damage from misguided climate policies

Although they represent a tremendous opportunity, the policies to deal with climate change also pose considerable risks. Discussions are underway about radically transforming almost all spheres of economic activity. It does not take much imagination to envisage policy missteps that, despite possibly achieving their primary goals, come at the cost of enormous and avoidable collateral damage. Regulatory uncertainty could prompt companies, and not just those in the fossil fuel industry, to go on an "investment strike". If households face excessive financial burdens, this would arguably undermine public support for the entire notion of reducing greenhouse gas emissions and

lead to growing conflicts over the distribution of these costs. In addition, global economic relations could rapidly deteriorate into a climate policy minefield, given that some countries are saddling their companies with substantial financial or regulatory costs – e.g. in the form of a "Carbon Border Adjustment Mechanism" (CBAM).

There are numerous areas of potential geopolitical conflict that could have a negative impact on sentiment and China plays a key role in many of them: tensions over Taiwan, Hong Kong or the South China Sea, for example.

The road to hell is paved with good intentions.

Proverb

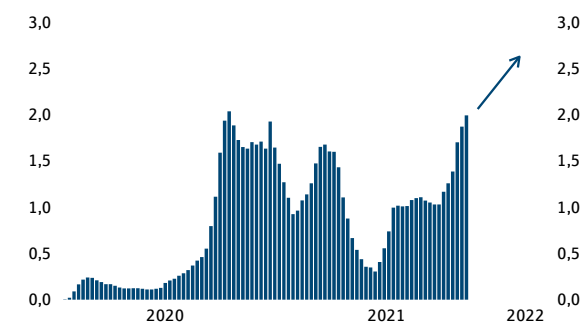
Meanwhile, there is an omnipresent risk that the realignment of industrialised countries' policies towards China, which is currently underway, could spiral into an escalating conflagration with serious consequences for international trade relations and global supply chains.

Political risks are not limited to distant countries and regions, either. With elections in France and Italy, events are looming that could act as a potential source of uncertainty here in Europe as well. The same applies to the debate surrounding the EU's relationship with Poland and the simmering Northern Ireland issue, which could yet provoke a wider trade dispute with the United Kingdom. Fresh clashes over the future direction of EU fiscal policy is also a very plausible scenario.

Furthermore, unexpected shocks could come from the financial markets, on many of which we are seeing very high, liquidity-driven valuations which make them vulnerable to a correction. Emerging markets are another reliable source of potential unpleasant surprises: the prospect of a crash on the Chinese real estate market – a perennial issue of concern among the possible sources of disruption for the global economy – has reared its ugly head yet again.

Risk factor: pandemic

Weekly new cases in Europe, millions



Sources: Macrobond, Helaba Research & Advisory

Overview of forecasts in the negative scenario

A hiatus in the ongoing economic recovery that is quickly followed by a rebound later in 2022 would probably not translate into a negative annual GDP growth rate in any of the major industrialised countries – the statistical carry-over due to strong **economic growth** in the second half of 2021 is simply too large. In Germany and the euro area, average annual economic activity is likely to be flat while the United States will only manage a modest expansion. However, unemployment would edge up again and, with oil prices significantly lower, **inflation** would subside markedly.

In a weaker macroeconomic setting with falling inflation, **central banks** put off interest rate hikes for the foreseeable future. Asset purchase programmes continue or are even expanded.

Bonds are a popular safe haven in challenging times, especially as the ECB lowers the deposit rate even further. By the end of 2022, the yield on Germany's 10-year Bund is well into negative territory at -0.7 %. The yield curve becomes very flat again.

Mounting uncertainty and weak earnings prospects for **corporates** lead to a temporary, sharp increase in risk premiums. Despite this, additional support from the ECB prevents an excessive widening of spreads. Corporate lending demand remains low for **banks** and insolvencies are higher than expected, resulting in deteriorating credit quality. The low interest rate environment becomes entrenched and weighs on banks' net interest income.

Covered bonds live up to their reputation as a crisis-resistant instrument and are highly sought after. However, rising fundamental risks prompt more differentiation in the low-risk segment and thus in spreads.

The nice part about being a pessimist is that you are constantly being either proven right or pleasantly surprised.

George F. Will, journalist and author

Negative factors for **equity markets**, such as the Covid-19 pandemic, supply chain disruption or problems on the Chinese property market, give rise to a marked increase in risk aversion and slow down the growth in corporate profits. The ensuing valuation adjustment pushes the DAX into a range around the 13,000-point mark.

The commercial **real estate** market experiences a price correction, with declining rents and property prices in the office and retail segments. The German housing market, on the other hand, once again proves itself to be relatively stable. However, given the lacklustre state of the economy, it is unlikely to see any further sharp price rises.

As a safe haven commodity, **gold** surges to new all-time highs. With monetary and fiscal policies venturing into ever more extreme territory, the precious metal sets its sights on the 3,000 US dollar per troy ounce mark.

The **US dollar** once again reaps the reward of being a safe haven for investors. Europe, which is more vulnerable to global economic shocks, is also subject to higher political risks that could call monetary union into question. The euro-dollar exchange rate falls to parity.

Patrick Franke



Positive scenario: Dream trip (15 %)

If great challenges are accompanied by equally large opportunities then it has been a long time since the global economy last enjoyed such a bright outlook as is the case following the shock of the pandemic. Setting out together towards a low-carbon transformation of the world economy holds out the prospect of lasting advantages for all. Investment, both public and private, seldom promised such a high "rate of return" as it does today, not only because it ultimately is the key to solving the bottleneck dilemma.

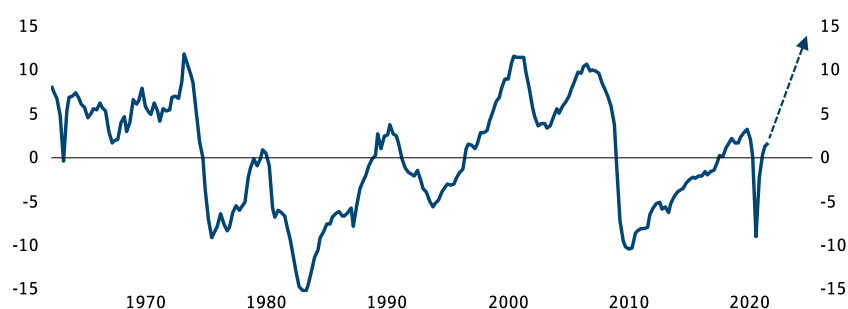
Sometimes, everything just falls into place: a favourable economic environment, positive "shocks" and prudent, forward-looking political decisions. In a setting like this, global and national collaboration is easier, (distribution) conflicts are defused and short-term self-interest can give way to shared medium-term goals.

Rapidly overcoming the effects of the pandemic should feature as one element of a scenario like this. Making swift progress in vaccinating the population could relegate Covid-19 to the status of just another virus with no noticeably greater economic impact than influenza. At the same time, lifting the remaining restrictions would provide a major boost for the recovery process, which is still incomplete, especially when it comes to services such as tourism. Consumers could quickly spend all of the excess savings they have accumulated during the pandemic. To make sure that this does not just drive up prices, though, a timely and lasting solution to the bottleneck issue would also be required.

Here, a number of possible approaches can be identified. To start with, instead of countries resorting to trade barriers and new regulations in an attempt to take production from each other ("Buy American!", "national champions", etc.), governments could work together in making global supply chains more resilient. In the short term, China could help by reducing the impact of measures that act as a hindrance to production and logistics processes, such as its draconian zero-Covid strategy. It is up to US President Joe Biden to draw a line under his predecessor's trade policy, even if it means confronting opposition from within his own party in Congress. Fundamentally, there is plenty of room for improvement in the relationship between "the West" and China.

Mood of optimism: No future without investment

G7 gross fixed capital formation*, deviation from long-term upward trend, %



*aggregated investment of G7 industrialised countries
Sources: Refinitiv, Helaba Research & Advisory

Potential for a wave of investment and innovation

There is currently no other issue where international collaboration, most of all with China, is as vital as climate policy. The closer countries work together, the faster progress can be made – even if it means individual nations

agreeing not to push ahead on their own or to compromise on the most extreme demands. In particular, involving emerging economies will be a key challenge. Intelligent fiscal and economic policies could deliver targeted impetus and encourage the private sector to work towards the common goal. In this regard, measures that harness market mechanisms, such as

"The best way to make your dreams come true is to wake up."

Paul Valéry

incentives for private households or better depreciation rules for companies, are more promising than prohibitions. Even the oft-maligned "NextGenerationEU" fiscal fund could play a positive role in this context if it goes beyond simply spending money from the public purse and acts as a catalyst for the private sector to invest and innovate more. Should governments be successful in sparking a general mood of optimism by investing in a green

transformation of the economy, the subsequent boom would not simply be a flash in the pan but would usher in a sustained period of high growth.

Overview of forecasts in the positive scenario

In our positive scenario, **growth rates** exceed those of our baseline scenario, which are already above average, by a significant margin. This fuels price rises and high **inflation** increasingly becomes an issue in wage negotiations. These second-round effects lead to even more pressure on prices. Both inflation and growth rates in the euro area and the United States average 5 % to 6 % in 2022.

Breakneck economic growth and (even) higher inflation well above the 2 % mark prompt **central banks** into taking early action. With strong demand for capital simultaneously in the private and public sectors, the era of low "neutral interest rates" draws to a close. Central banks terminate their asset purchase programmes. The Fed raises the key interest rate several times in 2022 and the ECB is also forced to hike rates.

Due to higher key interest rates and inflation expectations on both sides of the Atlantic, **bonds** come under enormous pressure. The yield on 10-year German Bunds climbs to around 1 % by the end of 2022. The yield curve becomes significantly steeper.

Strong operating earnings of **corporates** supports early tapering in the ECB's bond purchases. For this reason, risk premiums rise faster here than in our baseline scenario. Increasing interest rates boost the outlook for **banks'** earnings. However, the upward movement of interest rates is not overly abrupt and banks are able to manage it well. The cheap capital already raised through the ECB's programmes is largely held to maturity due to higher refinancing costs, which in turn reduces **covered bond** issuance. As central banks scale back their bond purchases, higher yields encourage investors who were previously put off to return to the market. Risk premiums of covered instruments remain well supported.

The German **equity market** gains an additional boost as factors that had been holding it back, such as supply chain disruption and the Covid-19 pandemic, dissipate more quickly. Companies experience even stronger growth and benefit even more from catch-up effects. Enormous surplus demand enables them to hike prices sharply, which leads to higher profit margins and net earnings. Investors' appetite for risk grows substantially, which helps the DAX set its sights on the 18,000-point mark.

Real estate is a beneficiary of the strong economy, although the relative attractiveness of this asset class declines slightly as interest rates rise. In view of less favourable financing conditions, prices on the German housing market are likely to see more modest increases.

Gold becomes less attractive in relation to equities and bonds. The precious metal is not needed as a safe haven currency, causing its price to dip below the 1,500 US dollar per troy ounce mark, despite high inflation and very high levels of sovereign debt.

The mood of optimism benefits the euro because Europe has more scope for surprisingly higher growth rates. Furthermore, as disparities among euro countries recede, so confidence in the single currency is strengthened. The **euro-dollar exchange rate** rises to 1.35.

Patrick Franke

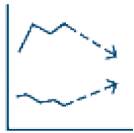


Gross domestic product and inflation

	Gross domestic product				Consumer prices			
		Real change, % yoy				Change, % yoy		
	2020	2021e	2022f	2023f	2020	2021e	2022f	2023f
Euro area	-6.5	5.1	3.9	1.9	0.3	2.5	2.4	2.2
Germany	-4.9	2.8	4.0	2.0	0.5	3.1	2.7	2.4
France	-8.0	6.7	3.6	1.7	0.5	2.0	2.2	2.0
Italy	-9.0	6.3	3.7	1.7	-0.1	1.8	1.9	1.7
Spain	-10.8	4.3	4.6	2.2	-0.3	2.9	2.8	2.2
Netherlands	-3.8	4.7	3.8	2.0	1.1	2.2	2.0	2.0
Austria	-6.8	4.2	4.3	2.2	1.4	2.6	2.5	2.2
Sweden	-2.9	4.3	3.2	2.0	0.5	2.1	2.0	1.4
Poland	-2.5	5.0	5.3	4.3	3.4	5.0	4.7	3.0
Czech Republic	-5.8	2.7	4.6	3.3	3.2	3.9	3.4	2.2
Hungary	-4.8	6.9	4.6	3.5	3.3	5.0	4.5	3.0
United Kingdom	-9.7	6.9	4.0	1.8	0.9	2.4	3.6	2.7
Switzerland	-2.4	3.0	2.8	2.0	-0.7	0.5	1.2	1.2
USA	-3.4	5.5	4.0	2.5	1.2	4.6	4.0	2.3
Japan	-4.7	2.0	2.8	1.5	0.0	0.0	1.5	1.0
Asia ex Japan	-0.6	6.7	5.1	4.8	2.6	1.7	2.1	2.6
China	2.3	8.0	5.5	5.0	2.5	0.7	1.5	2.5
India*	-7.3	7.5	6.5	5.1	6.6	5.3	4.6	4.2
Russia	-3.1	3.7	2.7	2.0	3.4	7.0	5.8	4.2
Turkey	1.8	7.0	3.7	3.4	12.3	16.5	12.8	11.5
Latin America**	-7.3	6.9	2.9	2.6	6.5	9.1	8.0	5.9
Brazil	-4.1	5.3	2.2	2.4	3.2	7.0	5.2	3.8
World	-3.1	5.9	4.3	3.5	2.2	3.4	3.3	2.8

*India: Financial Year; ** Latin America ex Venezuela due to hyperinflation; f=forecast, e=estimate; GDP growth working-day adjusted if available

Sources: EIU, Macrobond, Refinitiv, Helaba Research & Advisory



Financial markets forecasts

	Change from end of year	latest*	Forecast for end of period...			
	basis points	%	Q1/2022	Q2/2022	Q3/2022	Q4/2022
Interest rates						
ECB refinancing rate	0	0.00	0.00	0.00	0.00	0.00
ECB deposit rate	0	-0.50	-0.50	-0.50	-0.50	-0.50
Overnight rate €STR	1	-0.57	-0.55	-0.55	-0.55	-0.50
3M Euribor	-2	-0.56	-0.50	-0.50	-0.50	-0.50
6M Euribor	0	-0.53	-0.50	-0.50	-0.50	-0.45
2y Bunds	1	-0.69	-0.65	-0.65	-0.60	-0.55
5y Bunds	22	-0.52	-0.45	-0.35	-0.30	-0.25
10y Bunds	34	-0.23	0.00	0.10	0.15	0.20
2y swap rate	20	-0.32	-0.30	-0.30	-0.25	-0.20
5y swap rate	39	-0.07	0.00	0.05	0.10	0.15
10y swap rate	46	0.20	0.35	0.45	0.50	0.55
20y swap rate	40	0.40	0.60	0.70	0.85	0.95
30y swap rate	36	0.33	0.60	0.70	0.85	0.95
Fed funds target rate	0	0.13	0.13	0.13	0.13	0.38
10y Treasuries	70	1.61	1.70	1.80	1.90	2.00
Equities						
	in local currency, %	index				
DAX	17.7	16,149	15,000	16,500	16,200	16,000
Euro Stoxx 50	23.5	4,386	3,950	4,350	4,250	4,200
Dow Jones	17.9	36,087	32,000	36,000	35,000	34,500
S&P 500	24.7	4,683	4,200	4,600	4,500	4,400
Nikkei 225	8.5	29,777	26,500	31,000	29,500	29,000
Gold / crude oil						
	%					
Gold €/oz	5.4	1,639	1,667	1,565	1,565	1,500
Gold \$/oz	-1.9	1,863	2,000	1,800	1,800	1,800
Brent crude \$/barrel	58.4	82	85	83	81	78
Currencies						
	vs. euro, %	exchange rate				
US dollar	7.5	1.14	1.20	1.15	1.15	1.20
Japanese yen	-2.7	130	133	130	130	132
British pound	5.5	0.85	0.85	0.82	0.82	0.82
Swiss franc	2.8	1.05	1.08	1.10	1.08	1.10

*15/11/2021

Sources: Bloomberg, Helaba Research & Advisory



Selected sustainability indicators

	Share of global GHG emissions, % 2018	GHG emissions per capita, in metric tons of CO ₂ , 2018	Share of renewable energy, % of primary energy supply, 2019	Land and marine protected areas, % of total surface area, 2018	Corruption Perception Index 2020	Working age population (15- 64), share in %, 2020	National debt, % of GDP, 2020	Public spending on education, % of GDP, 2018
European Union*	6.8	7.5	14.2	23.1	-	64.1	90.1	-
Germany	1.6	9.4	14.6	38.8	80	64.4	69.1	3.7
France	0.7	5.4	10.7	33.2	69	61.6	115.1	4.5
Italy	0.8	6.4	18.2	13.4	53	63.7	155.8	3.5
Spain	0.6	6.7	14.7	15.0	62	65.6	119.9	3.4
Netherlands	0.4	10.5	7.2	21.2	82	64.3	52.5	4.2
Austria	0.1	7.7	30.2	28.4	76	66.4	83.2	4.4
Sweden	0.1	3.0	40.8	15.0	85	62.0	37.3	5.3
Poland	0.7	9.4	9.3	38.1	56	66.0	57.5	3.7
Czech Republic	0.2	11.0	10.7	22.2	54	64.1	37.8	3.6
Hungary	0.1	6.4	10.3	22.6	44	65.4	80.4	3.3
United Kingdom	0.9	6.6	12.5	28.8	77	63.7	104.5	3.9
Switzerland**	0.1	5.1	22.5	9.7	85	65.9	42.4	4.4
USA	11.8	17.7	7.9	26.3	67	65.0	133.9	4.1
Japan	2.4	9.1	6.2	10.0	74	59.2	254.1	2.8
China***	23.9	8.4	9.2	14.6	42	70.3	66.3	-
India***	6.8	2.5	22.6	3.5	40	67.3	89.6	-
Russia***	4.1	13.8	2.6	7.6	30	66.1	19.3	2.9
Turkey	1.0	5.8	15.9	0.2	40	67.1	39.8	3.7
Brasil	2.9	6.8	45.8	28.6	38	67.0	98.9	5.0
World***	100.0	6.5	13.5	14.3	-	65.2	-	-

*EU27, exception: protected areas (EU28); debt based on Eurostat figures, not IMF; renewable energy: as of 2018

spending on education: as of 2017 *renewable energy: as of 2018

Sources: Climate watch, OECD, World Bank, Transparency International, IWF, Eurostat, Helaba Research & Advisory

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