Bond Markets

A Research Publication by DZ BANK AG

Strategy

"Have you got the heating on yet?"

» We've recently been watching the outside thermometer more closely than Covid infection rates. These days, when people bump into each other the first question they ask is not, "Have you tested negative?" but "Have you put the heating on yet?". That said, a change in the issue of the moment does not mean other market-moving uncertainties have been put to bed. We live in times when it isn't always easy to tell when issues will stop being relevant.

» Inflation will remain a dominant theme, and it has now dawned on market participants that we will experience a painful recession in Europe in the final quarter of this year and first quarter of next. As expected, Covid infections are also on the rise, while the war in Ukraine is having less impact on the financial markets for the time being. It is now more a question of how countries and businesses are going to navigate the new status quo. The United Kingdom recently gave us an example of how this should, perhaps, not be done.

» Nevertheless, there are now signs that catastrophe has been priced in on the markets. If at some point a trend emerges where the actual data is better than the current poor expectations, this may mark a turning point. We are focusing on five overarching themes in this context: LNG supply chains up and running; a rapid fall in inflation; an effective Covid vaccine in China; de-escalation of the war in Ukraine; and a tipping point in Russia's political situation.

» As long as there is no change on any of these fronts, we will remain in a market environment that is having a systematic effect on spreads and eclipsing segment-specific themes. We are therefore sticking with our neutral allocation.

BONDS

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DZ BANK
Bank on Germany

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STRATEGY OVERVIEW

Segment	Strategy
Overall Market Strategy	Market participants firmly in risk averse mode at the moment A plethora of event risks is keeping volatility high on the bond market Weighting recommendations unchanged: neutral weight all segments versus the benchmark
Rate development and yield curve strategy	No sign of inflation falling back yet. The Fed and ECB will remain on their aggressive tightening path for now. We expect the bond markets to shift their focus to recession over the next three months. 10-year Bund and Treasury yields are expected to fall. Bund yields expected to rise at the short end; yield curve could partly invert We recommend a long duration position compared to the benchmark
Interest rate derivatives and structured products	Rise in long-dated swap rates halted for now, relative value strategies Implied interest rate vols set to fall, callables and Basis-Plus bonds
EMU Sovereigns	EMU sovereign bond market still deep in the red – the iBoxx € Sovereigns has lost 18% so far this year Fears of expansionary fiscal policy in the euro area one of the main spread drivers Strategic orientation unchanged: we recommend semi-core bonds on the money market
SSAs	Asset swap spread of the iBoxx € Agencies inches back up after hitting its all-time low of -24 bp, while the Bund spread climbs as high as 90 bp Historically high pick-ups offer opportunities – no sign of crisis sentiment in primary market demand
Covered bonds	Higher yields and Bund/swap spread supporting covered bond spread Country weighting remains unchanged; continue to overweight core Europe
Banks	Spreads set to remain volatile over the coming months We recommend sticking with a defensive positioning and continuing to favour bonds of diversified banks with high credit ratings
Corporates	As the reporting season kicks off, there are signs of growing margin pressure, but 2022 targets should be largely met Due to technical factors, the asset swap spread has widened much less dramatically than the spread against Bunds and CDS premia Our forecasts for the asset swap spread of the iBoxx € Non-Financials Senior Index are unchanged at 95, 90 and 80 bp in 3, 6 and 12 months
Asset Backed Securities	The primary ABS market picks up again in September, secondary markets dragged down by turmoil on the British gilt market. We favour consumer ABS from Italy and France due to the sizeable energy support packages in these countries.

Source: DZ BANK Research

ECONOMICS AND INFLATION

	2021	2022	2023
Gross Domestic Product (in % y/y)			
USA	5.9	1.5	-0.8
EMU	5.2	2.6	-1.0
Germany	2.6	1.1	-1.9
Consumer Prices (in % y/y)			
USA	4.7	8.7	5.8
EMU	2.6	8.2	6.1
Germany	3.2	8.2	6.4

Source: DZ BANK Research

RATES

	+3M	+6M	+12M
United States (in %)			
Fed Funds Rate (upper bound)	4.50	4.50	4.50
10y US-Treasury Yield	3.80	4.00	4.25
Eurozone (in %)			
ECB Deposit Rate	2.00	2.25	2.25
ECB Main Refinancing Rate	2.50	2.75	2.75
10y Bund Yield	1.90	2.10	2.30
10y Swap Rate	2.85	3.05	3.20
Bund-Swap-Spread 10y	95	95	90

Source: DZ BANK Research

BOND MARKET SPREADS

Asset Swap Spread (Bund-Spread) in basis points	+3M	+6M	+12M
EMU Government Bonds (iBoxx Eurozone 1-10)	-15 (71)	-10 (76)	0 (76)
Agencies (iBoxx Agencies)	-14 (68)	-8 (74)	-5 (67)
Covered Bonds (iBoxx Covered)	25 (111)	16 (102)	16 (92)
Bank Bonds (iBoxx Banks Senior)	130 (239)	110 (219)	85 (184)
Corporate Bonds (iBoxx Non-Financials Senior)	95 (192)	90 (187)	80 (167)

Source: DZ BANK Research

US DOLLAR

	+3M	+6M	+12M
Dollar / Euro	0.95	1.00	1.05

Source: DZ BANK Research

EQUITY MARKETS

Index Level	31/12/2022	30/6/2023
S&P 500	3,700	4,200
Euro Stoxx 50	3,400	3,800
DAX	12,800	14,000

Source: DZ BANK Research

EDITORIAL

"Have you got the heating on yet?"

Change of focus from "Tested negative?" to "Got the heating on yet?" does not mean other issues will not return

After writing last month about how the temperature will largely determine whether we avoid gas rationing in Germany this winter, I constantly catch myself looking at the outdoor thermometer instead of (as I used to do) the Covid infection rates. People I bump into on the street no longer ask, "Have you tested negative?" but: "Have you got the heating on yet?". But while the issue of the moment may have changed, this does not mean other potentially market-moving uncertainties have been put to bed. We live in times when it isn't always easy to tell when a topic will lose its relevance. We don't know yet when (and how) things will change.

Inflation, recession, Covid, Ukraine war remain key

One thing we can say for sure is that inflation will remain a dominant issue. The realisation has also now dawned on the market that a severe recession lies ahead in Europe over the winter months, driven by the demand side of the economy. Covid rates are also rising again as expected, with all the attendant effects: staff shortages, production cutbacks and distortions to supply chains. The upcoming Q3 results season will probably provide a first taster of the likely downward revisions to corporate earnings. In summary, a cocktail of uncertainties that will lead market participants to be very cautious or at least selective. On the other hand, gas prices have fallen sharply and the war in Ukraine has lost some of its immediacy for the financial markets. What matters now is how governments and businesses deal with the new status quo. An example of probably how not to do it was recently set by the United Kingdom. Hopefully other countries will take this experience to heart. Meanwhile, sustainability continues to play a growing role in funding activities, as Christian Lenk explains in our "Special Focus" this month.

The question is how people deal with the new situation – the UK has just given us a bad example

Market prepared for the worst and waiting for a positive surprise

There are nonetheless signs that catastrophe is now pretty much priced in on the markets. For example, the uptrend in Bund yields is flattening off and inflation expectations in the euro area have moved back closer to the 2% level. At the same time the busy CDS market suggests that after hedging their interest rate risks, market participants are now moving on to hedge their credit risks as well. If at some point we get to a situation where the realised data are better than the current low expectations, the turning point may be reached. But as mentioned at the outset, the signs of light are not yet visible on the horizon.

We are watching five issues which could trigger a possible turning point:

- LNG supply chains get up and running more quickly than hoped
- Inflation falls further and faster than expected due to easing energy costs
- China deploys an effective Covid vaccine
- The war in Ukraine de-escalates (fighting stops/slackens off, negotiations start)
- There is a tipping point in Russia's political situation

Neutral stance in a systematically-driven market

As long as none of the above occurs, we will remain in a market environment with a systematic effect on spreads that overwhelms any segment-specific considerations. As Günther Scheppler explains in "Overall market strategy", we are therefore maintaining our neutral allocation.

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SPECIAL FOCUS

OeBFA issues green T-bill for the first time on October 18 - a worldwide novelty

OeBFA: 20% of the annual green funding target of currently EUR 5 billion via money market

On October 18, the Austrian Federal Financing Agency (OeBFA), as the financing arm of the Republic of Austria, will, as usual, issued two T-Bills. However, one of them, RATB 0 02/23, was be the world's first green T-bill. The targeted volume of EUR 1 billion also corresponds to the target amount that OeBFA aims to raise in 2022 via green money market paper (in addition to Bills, green commercial paper issues are also possible). Another billion is then to be added at the short end in 2023. Maturities during the year will result in regular rolling of these positions: The initial maturity of four months, dictated by the maturity profile, will be standardized to three months from 2023. With a green funding target of EUR 5 billion (EUR 4 billion or 80% of which was already raised in May with the Republic's first green bond), which could be increased in the coming years, Austria will become one of the most active issuers in the sovereign green bond market in the EMU.

Stocktaking on the EMU Sovereign ESG Market

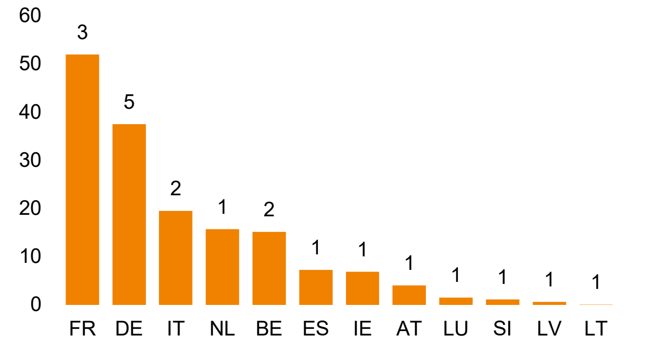
On this occasion, we take a look below at the state of ESG activity in the EMU sovereign market, which has gained considerable momentum over the past two years.

Sovereign ESG bonds in the EMU a (small) part of many funding portfolios

Green bonds clearly dominate

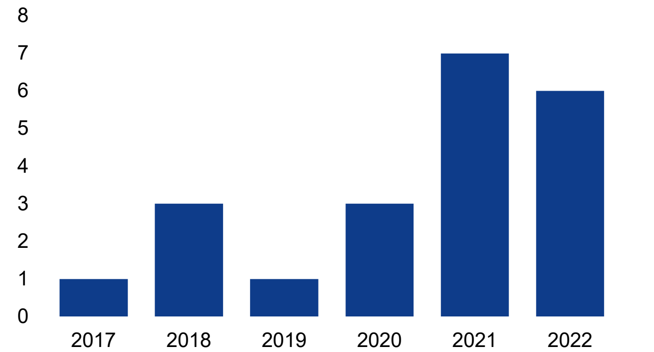
In 2017, the Republic of France issued the first Sovereign Green Bond. Since then, the majority of EMU countries have followed suit (twelve of the 19 countries have issued ESG bonds), especially since 2020/21, when the remaining EMU heavyweights - Germany, Spain and Italy - also entered the green ring. Green bonds dominate, with only Latvia, Luxembourg and Slovenia having issued sustainable bond formats. Looking at the outstanding volume, it is hardly surprising that France (52 billion euros), Germany (37.5 billion euros) and Italy (19.5 billion euros) alone account for a total of 109 billion euros (or two-thirds) of the current 161 billion euro sub-segment of the EMU government bond market. However, their share of the total volume of all outstanding EMU government bonds (maturity > one year: 8,652 billion euros) remains quite manageable at just under two percent.

FRANCE AND GERMANY LEAD THE WAY IN TERMS OF BOTH VOLUME AND NUMBER OF ESG BONDS OUTSTANDING
OUTSTANDING VOLUME OF ESG BONDS IN BILLIONS OF EUROS (COLUMN LABEL: NUMBER OF BONDS OUTSTANDING)



Source: DZ BANK Research, Bloomberg

SIGNIFICANT INCREASE IN ISSUANCE ACTIVITY FROM 2021
NEW ISSUES OF EMU-SOVEREIGN-ESG BONDS PER CALENDAR YEAR



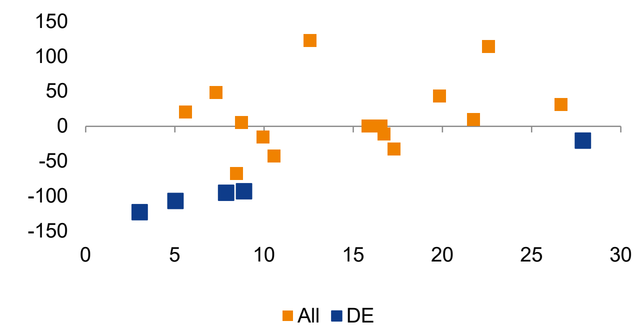
Source: DZ BANK Research, Bloomberg

Bunds with increasing benchmark function also for green bonds

As a rule, focus on a few securities with longer maturities

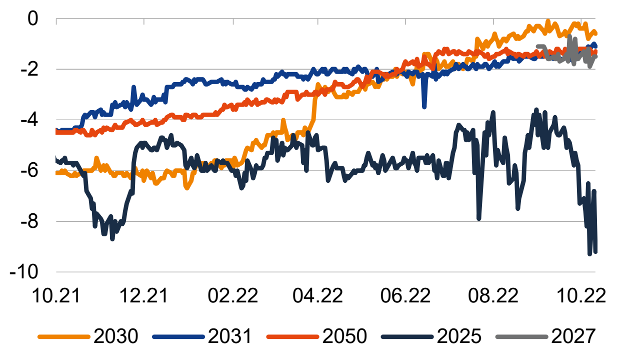
Sovereign ESG bonds also tend to focus on the longer end of the maturity spectrum. In addition, most issuers focus on one or at least a few green bonds. Given limited green or sustainable spending in the respective budgets, the potential funding volume through ESG securities is also limited. Therefore, in order to avoid major liquidity disadvantages due to a smaller outstanding volume compared to conventional bonds, issuance activity is usually concentrated on one (or a few) bonds.

WITH THE EXCEPTION OF BUNDS, FOCUS ON LONGER MATURITIES TO DATE
Y-AXIS: ASW SPREAD IN BASIS POINTS / X-AXIS: TIME TO MATURITY IN YEARS



Source: DZ BANK Research, Bloomberg

BUND GREENIUM GENERALLY DECLINING - SCARCITY OF INDIVIDUAL BONDS PROVIDES EXCEPTIONS
YIELD DISCOUNT (GREENIUM) OF GREEN BUNDS COMPARED WITH CONVENTIONAL TWINS IN BASIS POINTS



Source: DZ BANK Research, Bloomberg

Bunds: twin concept provides (relatively) objective measure of greenium

Also in view of this problem, the German Finance Agency (DFA) has chosen a relatively innovative path. For every green federal bond, there is a conventional twin that has the same features (but a different ISIN) except for the green component. In principle, DFA can also map its entire, classic maturity spectrum of two to 30 years with green bonds. Accordingly, there are relatively many green bonds with maturities of less than ten years. A particular advantage of this construct is that it makes the "greenium", i.e. the yield advantage of green bonds over conventional bonds, more objectively measurable. Over the past twelve months, there had been a downward trend in the greenium. However, especially at the current margin, the green OBL 0 10/25 stands out, which has richened massively compared to its twin. In our view, however, these are non-representative special situations on an individual bond basis (e.g. due to bottlenecks on the repo market).

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STRATEGY

Overall market strategy

- Market participants firmly in risk averse mode at the moment
- A plethora of event risks is keeping volatility high on the bond market
- Weighting recommendations unchanged: neutral weight all segments versus the benchmark

It depends on how you look at things

Asset swap and Bund spreads paint a different picture

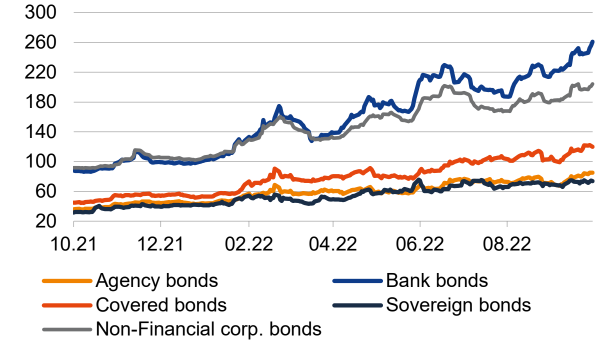
What is the mood on the market and how are market participants investing at the moment? The answers to these questions can be very different depending on which risk premiums you look at. For example, based on the asset swap spread, bank bond spreads have continued to rise in recent weeks, while spreads in the government bond sector have tightened. This suggests that investors are currently fleeing to safe havens and selling bonds from the credit sector in favour of the rates sector. Meanwhile, the picture painted by Bund spreads is a little different. Here spreads have widened across all bond classes. While spreads have risen particularly sharply in the credit sector, they have also widened in sovereign bonds, although by less. The reason for the difference between the two spread measures is the rising Bund-swap spread, which has now reached a level of 97 basis points in the 5-year maturity. This compares with an average of 43 basis points for the Bund-swap spread over the past 10 years. An analysis we recently carried out shows asset swap spreads usually increase in the credit segments when the Bund-swap spread rises, while asset swap spreads in the rates segment fall. Having said this, both approaches ultimately come to the same conclusion, which is that risk aversion has continued to increase among market participants.

Market torn between the conflicting pressures of inflation and recession

ECB quantitative tightening could be a problem for the covered bond segment in the short term

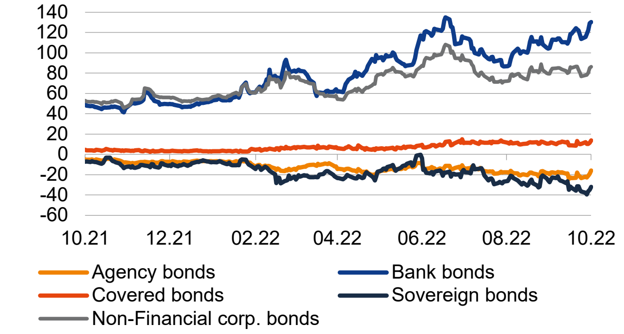
The upsurge in risk aversion is not surprising. The ongoing war in Ukraine is keeping energy prices at extraordinary levels. The European Central Bank will maintain its current monetary policy stance and continue to hike rates for the time being. It is also possible the central bank could initiate quantitative tightening (QT), perhaps at its December meeting, by announcing a gradual reduction in reinvestments in the APP programme next year. This may well have an impact on covered bonds, since an average of around EUR 3.1 billion per month of covered bonds are set to mature within the CBPP3, which forms part of the APP, over the coming twelve months. An announcement to this effect could therefore prompt spread widening in the covered

BASED ON BUND SPREADS, SPREADS HAVE RISEN IN ALL BOND SEGMENTS
BUND SPREAD OF IBOXX INDICES IN BASIS POINTS



Source: Markit, DZ BANK Research presentation; data as at 4:25 pm on 17 October 2022; the segments are represented by the asset swap spread of the iBoxx € Eurozone 1-10, iBoxx € Agencies, iBoxx € Covered, iBoxx € Banks Senior and the iBoxx € Non-Financials Senior

ASSET SWAP SPREAD ANALYSIS POINTS TO FLIGHT TO SAFE HAVENS
ASSET SWAP SPREAD OF IBOXX INDICES IN BASIS POINTS



Source: Markit, DZ BANK Research presentation; data as at 4:25 pm on 17 October 2022; the segments are represented by the asset swap spread of the iBoxx € Eurozone 1-10, iBoxx € Agencies, iBoxx € Covered, iBoxx € Banks Senior and the iBoxx € Non-Financials Senior bond sector, which could be given a further push by strong issuance activity at the beginning of next year. We have therefore raised our spread forecast for covered bonds from 12 to 25 basis points on a three-month view.

Banks remain under pressure

The threat of recession continues to hang over the banking sector like a sword of Damocles. Expectations of rising loan losses have prompted further spread widening in the segment in recent weeks. In response to this move, we have adjusted our spread forecasts upwards across all forecast horizons. The majority of negative event risks should be priced in at current spread levels, however. Spreads are therefore expected to decline in the coming quarters, assuming the economic outlook improves over this period.

Worst should be over in the rates segment

We are retaining our neutral weighting strategy

The gloomy news and forecasts should also be largely priced in at current rate levels. We are now only projecting a further rise of around 20 basis points in the 5-year EUR swap rate on a 6- and 12-month horizon. The pressure on total return from rising rates is therefore fading. The spread narrowing we are forecasting in the credit segment combined with the current high carry means projected returns in the bank and non-financial corporate bond sectors are reasonably high. We are also forecasting positive returns in all rates and quasi-rates segments on a 12-month view, although less than in the credit segments, as the carry is lower and we are expecting a rise in spreads. As the markets are likely to remain highly volatile overall due to high event risks and unpredictable one-off effects, we are maintaining our current neutral weighting strategy for now.

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CURRENT WEIGHTING RECOMMENDATIONS

Bond segment	Current (previous) recommendation	Date of recommendation	Index TR since recommendation	Index TR since start of year	Current spread	Change in spread since start of year	Spread forecast +3M	Spread forecast +6M	Spread forecast +12M	TR forecast (swap/credit) +3M	TR forecast (swap/credit) +6M	TR forecast (swap/credit) +12M
Sovereign bonds	➔ (➔)	18.08.2022	-5.27%	-11.10%	-32	-24	-15	-10	0	**-0.04%** (0.74%/-0.78%)	**-0.19%** (0.76%/-0.95%)	**1.28%** (2.49%/-1.21%)
Agency bonds	➔ (➔)	18.08.2022	-6.60%	-13.21%	-16	-9	-14	-8	-5	**0.97%** (1.05%/-0.08%)	**0.50%** (0.87%/-0.37%)	**2.12%** (2.56%/-0.43%)
Covered bonds	➔ (➔)	18.08.2022	-6.23%	-13.48%	14	10	25	16	16	**0.44%** (0.94%/-0.51%)	**0.86%** (0.85%/0.01%)	**2.69%** (2.54%/0.15%)
Bank bonds	➔ (➔)	18.08.2022	-6.14%	-13.21%	130	82	130	110	85	**0.85%** (0.41%/0.45%)	**2.14%** (0.53%/1.61%)	**5.48%** (2.31%/3.18%)
Corporate bonds	➔ (➔)	18.08.2022	-7.12%	-16.32%	86	34	95	90	80	**1.00%** (1.20%/-0.20%)	**1.30%** (0.92%/0.38%)	**4.07%** (2.59%/1.48%)

Source: DZ BANK; data as at 17 October 2022, 4:20 pm; 🡑 = overweight; ➔ = neutral weight; 🡓 = underweight; TR = Total Return; the bond segments are represented by the following iBoxx indices: iBoxx € Eurozone 1-10 (sovereign bonds); iBoxx € Agencies (agency bonds); iBoxx € Covered (covered bonds); iBoxx € Banks Senior (bank bonds); iBoxx € Non-Financials Senior (corporate bonds); all spread data in basis points; the TR forecast consists of two components: 1.) the impact of movements in interest rates on the iBoxx performance (swap) and 2.) the impact of movements in spreads on the iBoxx total return (credit); differences between the sum of the swap and credit components and the TR forecast are due to rounding

Interest rates

- No sign of inflation falling back yet. The Fed and ECB will remain on their aggressive tightening path for now.
- We expect the bond markets to shift their focus to recession over the next three months. 10-year Bund and Treasury yields are expected to fall.

Eurozone: ECB will continue to tighten aggressively

Monetary guardians worried about their monetary reputation

There are no signs as yet of inflation topping out in Europe. On the contrary, price increases have recently accelerated further and pushed eurozone inflation into double digits (10% year-on-year) in September. Against this backdrop ECB officials have stressed repeatedly that they will continue to tighten monetary policy. They want to prevent a prolonged overshoot of their inflation target and are keen to avoid damaging the credibility of their monetary policy. In this context the central bank is likely to be concerned that consumers in the euro area do not believe current monetary policies will bring inflation back down to the 2% target in the medium term. The median respondent in the Consumer Expectations Survey currently expects inflation of 3% over the next three years. If inflation expectations become entrenched, there is a risk of a sustained rise in wage demands that could in theory set off a wage-price spiral. Further sizeable rate increases are therefore needed to keep inflation expectations in check.

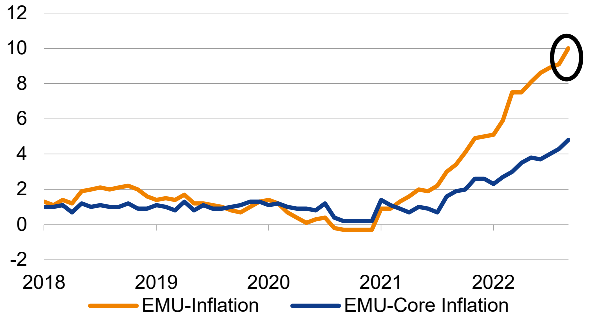
A few doves on the ECB Council have warned of overaggressive monetary policy

At the same time there are some voices within the central bank warning of an over-aggressive monetary policy. The governor of the Bank of Portugal Centeno recently said that while a normalisation of monetary policy is absolutely necessary, monetary policy decisions need to be guided by flexibility and proportionality. In his view the costs of aggressive monetary policy could outweigh the benefits. He also noted that monetary policy can in any case only have a limited impact on a rise in inflation triggered by a supply shock on the energy market. His Italian counterpart Visco has also warned that excessively large and rapid rate hikes increase the risk of a recession in the euro area.

Hawks continue to set the tone – but pace of rate hikes likely to slow at end of year

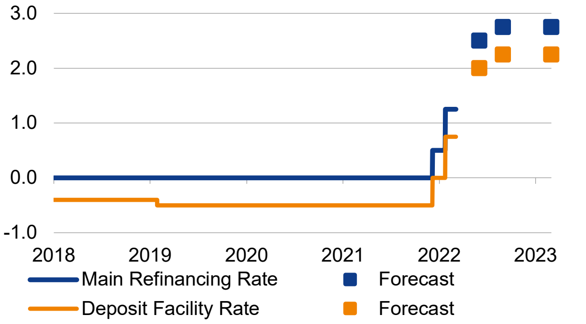
At the end of the day, however, we believe the interest rate hawks on the Governing Council will continue to set the tone. Looking ahead to the council meeting on 27 October, a further hike by 75 basis points is probably a done deal. This would take the main refinancing rate to 2%. We expect the central bank to tighten the monetary reins again at the last meeting of the year, but believe they will dial down the pace and raise rates by "only" 50 basis points. By then the hard economic data will

INFLATION REACHES DOUBLE DIGITS
IN PERCENT (Y/Y)



Source: Bloomberg, DZ BANK Research; data as at 19 October 2022, 5 pm

ECB TO CONTINUE HIKING RATES
IN PERCENT



Source: Bloomberg, DZ BANK Research; data as at 19 October 2022, 5 pm probably be reflecting what is already visible in the sentiment indicators. In light of the energy crisis the European economy will be unable to avoid recession. We expect the recession to deepen over the coming quarters and for the downturn to continue at least through the first quarter of 2023.

Policy rate set to reach a moderately restrictive level of 2.75% by February

We also believe that the surge in inflation is likely to ease in the medium term. One encouraging sign in this context is that the gas price has already fallen sharply in recent weeks. Even if inflation is likely to remain at elevated levels in a long-term comparison, base effects mean that inflation will gradually fall in 2023. Hence we expect the rate hike cycle to reach its peak in February with a final 25 basis point increase. At 2.75%, the main refinancing rate would then be at a moderately restrictive level. The monetary guardians have estimated that neutral policy rate is in the region 1.50% to 2.0%.

ECB will gradually roll back its APP reinvestments

A further argument against an extended period of rate hikes in our view is that ECB President Lagarde has indicated the issue of quantitative tightening is on the table as a means of reducing the monetary policy stimulus. The monetary guardians are keen to shrink the bloated central bank balance sheet. At present the liquidity from maturing securities in the two asset purchase programmes (APP/PEPP) is continually reinvested in the bond portfolios. In our view the monetary guardians could potentially announce a gradual reduction in APP reinvestments at the December council meeting. Reinvestments will amount to an average of around EUR 28 billion per month over the next 12 months. A gradual reduction in the reinvestments by EUR 10 billion every two months, for example, would end these reinvestments in the first half of 2023. However, the ECB will not actively sell any securities from its bond portfolios. The fact that the central bank balance sheet will in any case shrink significantly next year due to maturing TLTRO III loans will no doubt be an important consideration for the central bank.

Bund yields to remain volatile

Eurozone recession not currently reflected at the long end

The 10-year Bund yield has been extremely volatile over the past month, ranging between a low of 1.77% and a high of 2.42%. Inflation fears have dominated the bond market in the last few weeks. The market turmoil in the UK probably also contributed to the latest sell-off in Bunds, after the UK government prompted anxiety among gilt investors with its plans for debt-funded tax cuts. Even if a further rise in the 10-year Bund yield cannot be ruled out in the short term, however, we do not expect it to remain at current elevated levels on a three-month view. Bond market participants will not be able to ignore the fact that the European economy is sliding into a severe recession for ever. The prospect of falling inflation in the medium term also points to a lower 10-year Bund yield in our view. Our target is the 1.90% level. If our expectations are proved right, the Bund curve will invert markedly between 2 and 10 years and will remain inverted for the rest of our 12-month forecast horizon. Although inflation will fall in 2023 it will remain above the ECB’s target and we therefore do not expect the central bank to cut rates quickly. On a one-year horizon we expect the curve to disinvert again slightly, as we are forecasting the 10-year Bund yield moving moderately higher at the end of our forecast horizon (+12m: 2.30%). This will be driven by the economic recovery in the euro area, which we expect to make itself felt in the second half of 2023.

Swap spreads set to remain high for foreseeable future

The elevated uncertainty on the market at present is also reflected in the record 10-year swap spread. Given the bleak economic outlook and resultant probable increase in credit defaults, this situation is unlikely to ease in the short term. The inverting yield curve is a further challenge for the banking sector. We only see the Bund-swap spread narrowing again slightly when the European economy recovers.

United States: Fed policymakers take the fight to high inflation

Market players attempting to figure out where the Fed rate cycle will peak

The US monetary guardians have already raised interest rates by 300 basis points since the beginning of the year. In recent weeks financial market participants have been increasingly debating what the terminal rate of this rate cycle will be. The turmoil on the financial markets temporarily prompted speculation that rates could peak soon. But the September non-farm payrolls report rekindled expectations that rates will rise much further. Although the first signs of a slowdown on the labour market are beginning to appear, it remains robust overall. Together with strong wage growth, this points to the Fed sticking to the hiking path for now.

FOMC meeting in November: another jumbo hike

Nor have public comments by Fed governors given any indication that the Fed will abandon its aggressive tightening path soon. Rather the governors have continued to stress their concerns about persistently high inflation. Against this backdrop we expect the Fed to tighten the monetary reins by a further 75 basis points at the November FOMC meeting. This would take the upper federal funds rate to 4%.

Decline in sentiment indicators foreshadows a slowing economy

Even if the US labour market remains robust so far, the leading sentiment indicators suggest the economy will slow markedly in the coming months. Consumer spending is the most important pillar of the US economy and consumer confidence has fallen sharply over the last few months, as high inflation saps consumers' propensity to spend. Moreover, higher interest rates are leading to the first signs of a slowdown in the housing market, which is also dragging down consumer sentiment. We expect the US economy to fall into recession in the final quarter of this year and remain in recession until the end of the first quarter of 2023.

Overshooting of rate hikes cannot be ruled out

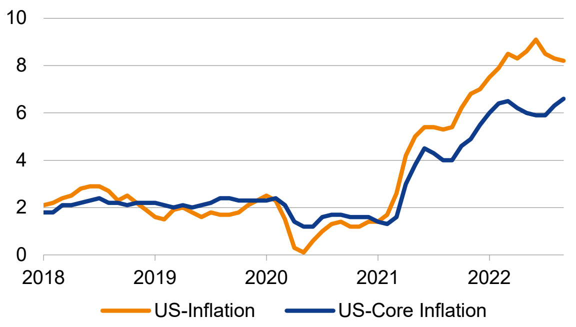
In response to this slowdown we expect the US monetary guardians to slow the pace of rate hikes at their final meeting this year on 14 December and raise the policy rate by 50 basis points to 4.50%. While it is certainly conceivable that the Fed's rate hikes will overshoot, the monetary guardians must be aware that the rate hikes they have already carried out will only impact on the real economy with a considerable lag. Against this backdrop we expect the monetary guardians to adopt a wait and see approach and keep rates unchanged at this level next year.

Treasury yields: strong upward pressure

10-year Treasury yield fluctuating around key 4% level

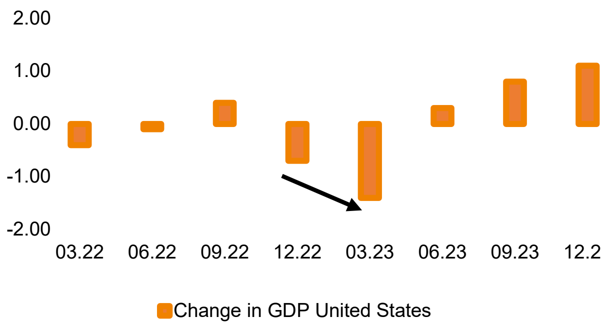
10-year US Treasury yields have also been on a rollercoaster ride in recent weeks. When market speculation that the Fed could start to tone down its aggressive hikes faded, the 10-year yield rebounded from its short-term low of 3.55% and broke through the 4% level at the peak. Given the extremely uncertain market environment,

US INFLATION STILL AT AN UNCOMFORTABLY HIGH LEVEL
IN PERCENT (Y/Y)



Source: Bloomberg, DZ BANK Research; data as at 19 October 2022, 5 pm

US ECONOMY EXPECTED TO SLIP INTO RECESSION
IN PERCENT (Q/Q)



Source: Bloomberg, DZ BANK Research; data as at 19 October 2022, 5 pm a further rise from these levels cannot be ruled out.

Potential for correction in 10-year Treasury yield on a three-month view

At the latest on a three-month view, however, bond market participants should begin to focus on the fact that the US economy will be unable to avoid a recession. There should also be signs by then that we are past the worst on inflation. We are projecting a gradual fall in inflation next year. We are therefore forecasting the 10-year Treasury yield falling to around 3.80% on a three-month view. Looking ahead a year, we expect the US economy to begin growing again, which should be reflected in moderately rising yields at the long end. Our 10-year Treasury yield forecast on a 12-month horizon is 4.25%.

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Yield curve strategy

- Bund yields expected to rise at the short end; yield curve could partly invert
- We recommend a long duration position compared to the benchmark

Bund curve has steepened in recent weeks on fiscal concerns

The debate about possible large fiscal packages and resultant concerns about long-term debt sustainability have led to a further rise in yields since the beginning of the month. As longer maturities were hardest hit this time, the Bund yield curve steepened significantly and the 2/10 spread temporarily quoted at over 40 basis points, up from a low of 10 basis points last month.

Curve expected to flatten as yields rise in shorter maturities

Curve expected to flatten considerably or even invert over the next three months

Over the next three months the ECB is expected to continue raising interest rates rapidly to fight inflation, which will push up yields further at the short end. At the same time, we see growing recession risks putting downward pressure on yields at the long end, so that overall we expect the yield curve to twist around the medium maturities, i.e. the 5- to 7-year region. This will flatten the curve considerably, possibly leading to an inversion between 2 and 10 years. Thus, the positive rolldown returns that have been available in some maturities in October would finally become a thing of the past or even switch into losses. As far as carry is concerned, however, the current pattern of “the shorter the maturity, the higher the carry” is likely to persist and could even become more pronounced (see left-hand chart below).

We recommend a long duration position

We recommend a long duration position relative to our benchmark, the iBoxx Germany Sovereign Index, which currently has a duration of 7.35 years. Although the carry and rolldown returns in longer maturities are likely to approach zero, this is far outweighed by potential price gains due to the expected fall in yields in this curve segment. Nonetheless, investors should remain cautious when setting up new positions. Yields remain extremely volatile as the market tries to navigate the conflicting forces of recession and inflation. News of large fiscal programmes could also lead to a temporary increase in long-dated yields, but we only expect this to impact on the overarching trend of curve flattening in the short term at most.

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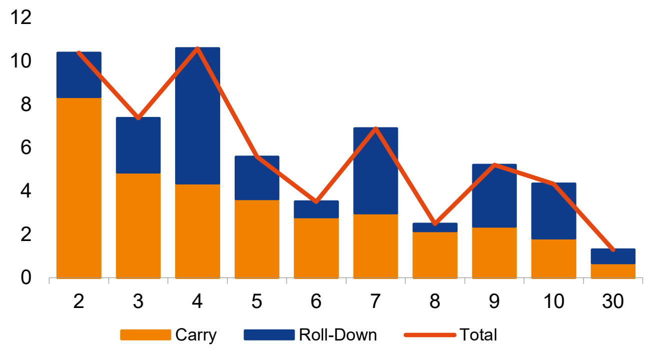
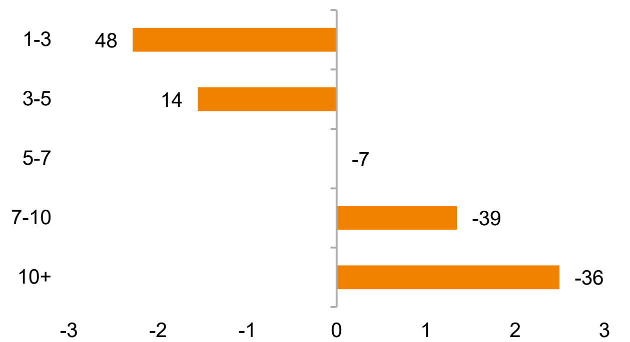
THE SHORTER THE MATURITY, THE HIGHER THE CARRY
IN BASIS POINTS



Source: DZ BANK Research, Bloomberg; data as at 08:30 am on 20 October 2022

WE RECOMMEND A LONG DURATION POSITION
X AXIS: IN PERCENTAGE POINTS; Y AXIS: IN YEARS; FIGURES ALONGSIDE BARS: IN BASIS POINTS*



Source: DZ BANK Research, Bloomberg; *forecast horizon: 3 months; X axis: positioning relative to benchmark; Y axis: maturity category; figures alongside bars show expected change in yield; data as at 08:30 am on 20 October 2022

Swap spreads

- Swap spreads continue to be driven up by a shortage of high-quality assets, which we expect to persist
- Higher issuance could lead swap spreads to fall back in the medium term

Scarcity of short-dated securities driving up the 2-year Bund/swap spread

We do not expect Bund/swap spreads to fall over the next three months. The short end of the yield curve and the scarcity of high-quality short maturity bonds remains the key problem. The premium on the 2-year swap currently stands at around 100 basis points. This unusually high spread is more the result of low Bund yields than of high swap rates, however. Normally we would expect the short end of the Bund curve to reflect the ECB's upcoming rate hikes. But while money market futures are pricing in a rise in the deposit rate to 3% by the middle of next year, 2-year Bunds are "only" yielding 1.99%. In other words the tighter ECB monetary policy being anticipated on the money market is not fully reflected in government bonds. The reason is the scarcity of short-dated securities, which is tending to push down yield levels. 2-year OIS (overnight index swaps) paint an entirely different picture. They currently stand at around 2.72% and are thus pricing in the upcoming rate hikes to a much greater extent. The spread between 2-year Bunds and OIS in the same maturity stands at around 80 basis points (see right-hand chart below). This distortion also carries over to the 2-year Bund/swap spread.

DZ BANK SWAPSPREADS: FORECASTS

	current	+ 3 months	+ 12 months
2yr USA	37	20	10
10yr USA	0	3	8
2yr Euro area	94	80	75
3yr Euro area	103	87	81
5yr Euro area	91	85	75
7yr Euro area	86	94	82
10yr Euro area	83	95	90
30yr Euro area	21	35	30
slope 2/10	-11	15	15
curvature 2/5/10	5	-5	-15

Source: DZ BANK Research, Bloomberg; as at: 19.10.22; 17:00

Higher issuance could lower spreads in the medium term

Higher issuance of Bunds could ultimately lead to lower Bund/swap spreads. We expect Bund issuance to increase as a result of the numerous financial support packages for consumers and businesses announced by the German government. But this process will stretch over several years and will therefore be very gradual. Demand at the short end of the curve is likely to remain high and thus keep 2-year Bund yields low. The situation at the short end of the curve also has an impact on medium and long-term Bund/swap spreads, even if the distortion is not as severe here. We are forecasting 5- and 10-year spreads at 95 basis points over the next three months.

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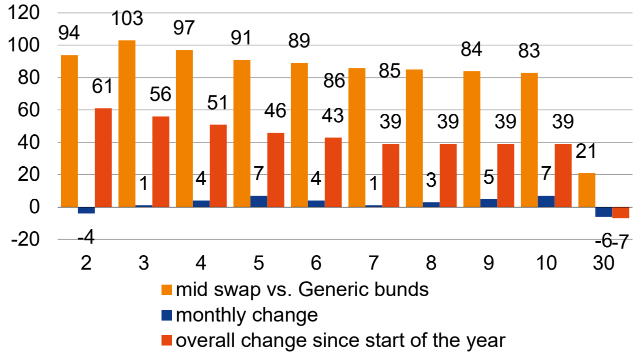
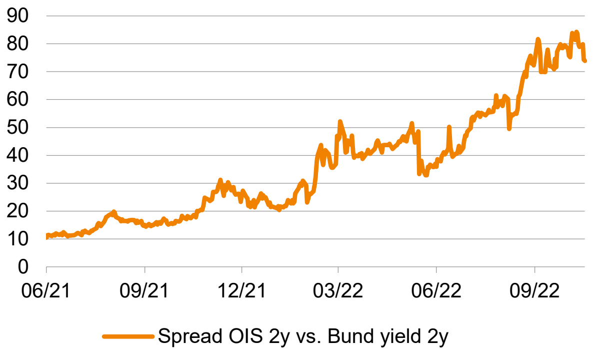
BUND/SWAP SPREAD: DISTORTIONS IN SHORT MATURITIES
Y AXIS: IN BASIS POINTS; X AXIS: MATURITY IN YEARS



Source: Bloomberg, DZ BANK Research; as at: 19.10.2022, 09:32

LOW BUND YIELDS DRIVING BUND/SWAP SPREAD
IN BASIS POINTS



Source: Bloomberg, DZ BANK Research; as at: 19.10.2022, 09:32

Interest rate derivatives and structured products

- Rise in long-dated swap rates halted for now, relative value strategies
- Implied interest rate vols set to fall, callables and Basis-Plus bonds

Rise in rates hits resistance

The panic about the British tax plans spread to the euro area in a weakened form, since countries on this side of the Channel are also trying to bolster consumers' purchasing power with large spending packages. Investors have taken fright at the planned amounts and are expecting higher borrowing costs on the eurozone money market in the medium term (see left-hand chart below). The futures-implied 3M Euribor curve steepened bearishly and EUR swap rates above the 5-year maturity reached new cyclical highs. Even after the consolidation of the recent increase in rates, many ATM strikes on the EUR forward matrix are still above 3% (see right-hand table below). At these levels the short-term risk of rising long-dated EUR swap rates is reduced and rolldown & carry strategies become more attractive. Since realised vol is still high, we recommend relative value positions, e.g. via conditional 3m10y payer swaption spreads, which involves selling ATM payer swaptions and buying OTM payer swaptions.

High interest rate vol argues for cautious positioning via relative value strategies

All the peaks in the volatility range have been climbed

Implied interest rate vols falter at very high levels, decline in longer maturities now reaching the short end too

Implied EUR interest rate vols have had such a long and drawn-out rise to the highest peaks for many years that signs of exhaustion are beginning to appear. The policy rate-sensitive maturity combinations up to 5y5y in particular fell on the belief that the ECB could take its foot off the rate hike pedal once interest rates reach a neutral level. This slightly punctured the surface tension across the entire volatility matrix and gamma maturities such as 3m10y and 1m30y also pulled back from their recent cyclical highs. In the absence of fresh impetus that goes beyond the latest rise in realised interest rate vol, current levels are unlikely to be sustained, which suggests selling volatility in all possible forms. These include callable structures along the steep section of the curve up to 12 years as well as callable "Basis-Plus" bonds. The latter pay a bonus coupon as long as a money market rate does not exceed a particular pre-determined threshold.

Sell vol via callable rate structures, either single callables or callable Basis-Plus bonds

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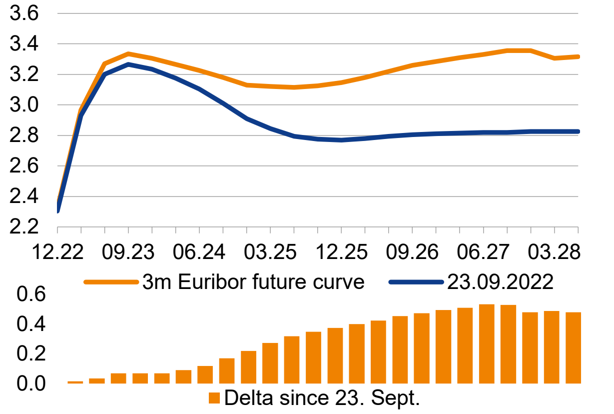
MUCH HIGHER POLICY RATES AND THEREFORE MONEY MARKET RATES EXPECTED IN MEDIUM TERM
IN PERCENT



Source: DZ BANK Research, Bloomberg, data as at 5 pm on prior day

RELATIVELY STEEP EUR SWAP CURVE UP TO THE 12-YEAR MATURITY ALLOWS HIGH STRIKES FOR SHORTER FORWARDS
EUR FORWARD SWAP MATRIX, ATM STRIKES IN PERCENT

Expiry \ Tenors	2y	5y	7y	10y	15y	20y	25y	30y
spot	3.07	3.20	3.22	3.28	3.28	3.06	2.81	2.60
1y	3.33	3.32	3.32	3.36	3.29	3.03	2.77	2.56
2y	3.26	3.29	3.32	3.36	3.23	2.95	2.69	2.49
3y	3.30	3.31	3.35	3.37	3.18	2.87	2.61	2.41
4y	3.33	3.35	3.38	3.37	3.10	2.78	2.52	2.34
5y	3.30	3.37	3.40	3.33	3.01	2.68	2.43	2.26
7y	3.40	3.44	3.39	3.20	2.79	2.48	2.25	2.09
10y	3.47	3.28	3.09	2.78	2.38	2.11	1.94	1.81
12y	3.25	2.91	2.68	2.39	2.06	1.85	1.71	1.60
20y	1.58	1.44	1.37	1.30	1.23	1.18	1.12	1.09
30y	1.10	1.09	1.08	1.04	0.98	0.96	0.87	0.98

Source: DZ BANK Research, Bloomberg, data as at 5 pm on prior day

EMU sovereigns

- EMU sovereign bond market still deep in the red – the iBoxx € Sovereigns has lost 18% so far this year
- Fears of expansionary fiscal policy in the euro area one of the main spread drivers
- Strategic orientation unchanged: we recommend semi-core bonds on the money market

iBoxx € Sovereigns down by an astonishing 18% so far this year

When it comes to total return, there is still not much positive news to report. The overarching trend of rising yields is still intact on the markets. Due to the rapid rise in yields, the EMU sovereign bond segment is drowning in red ink. At the level of the market as a whole the losses remain unprecedented. So far this year the iBoxx € Sovereigns is down by a remarkable 18%, making 2022 the worst year ever since the launch of the euro.

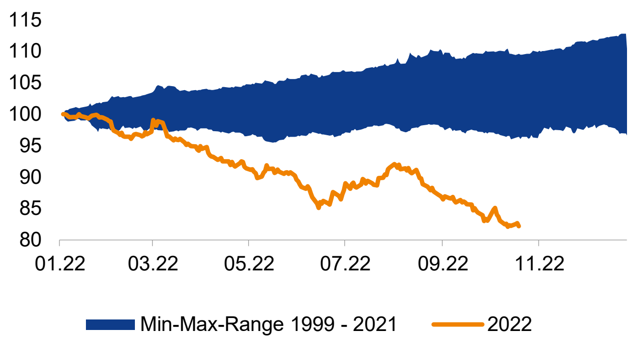
Expansionary fiscal policy meets restrictive monetary policy, costing EMU treasuries dear

Turning to sovereign spreads in the euro area, fears about expansionary fiscal policy are still the most important driver. Politicians in the euro area are calling on governments to loosen their purse strings to cushion the impact of the economic downturn and the energy crisis. Demands for looser fiscal policy are nothing new in southern Europe. But even members of Europe's frugal camp such as the Netherlands are advocating a shift in fiscal policy. However, fiscal expansion in the euro area is now an expensive affair even in northern Europe, let alone southern Europe. As a result of the ECB's monetary tightening, refinancing rates have risen drastically. National treasuries would therefore need to place much more fresh government debt on the market and pay much higher interest service costs.

The semi-core segment has also been hit by spread widening recently alongside the periphery

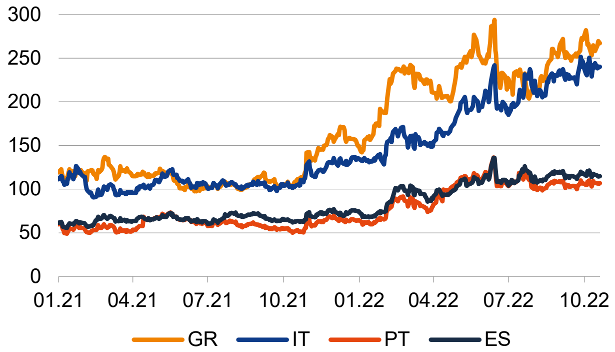
Investors are therefore deeply concerned that the long-term prospects for debt sustainability in the eurozone countries could deteriorate. In recent weeks Bund spreads have not just risen in the periphery, but also in the semi-core segment. The ECB is not attempting to stop this steady upward march in sovereign bond yields by deploying the TPI. This instrument is more likely to be activated in the event of severe turmoil and is not designed to prevent a gradual upward trend in spreads. On top of this, spreads are also under pressure from talk of quantitative tightening. Reinvestments in the APP and PEPP portfolio have helped to keep spreads down, particularly at the long end of the curves.

UNPRECEDENTED LOSSES IN EMU SOVEREIGN BONDS
IBOXX € SOVEREIGNS INDEX (1 JANUARY 2022 = 100)



Source: DZ BANK Research, Bloomberg; data as at 5 pm on prior day

BUND SPREADS RISING STEADILY, ALMOST IN A STRAIGHT LINE
10-YEAR BUND SPREADS IN BASIS POINTS



Source: DZ BANK Research, Bloomberg; data as at 5 pm on prior day

After the Italian election – worries and risks remain high

Italian risk still a serious concern

Alongside ECB policy and the fears about fiscal policy interventions by euro area member states, Italian risk also remains high on the agenda. As in 2018, there is a threat of another row with Brussels following the election victory of Giorgia Meloni and her Brothers of Italy party, in spite of conciliatory statements by the prime minister designate. In addition to the potential for a quarrel with Brussels, Italy's credit rating assessments by the three main rating agencies also pose a considerable risk. Moody's has slapped a negative outlook on the Italian Republic's Baa3 sovereign rating and has become much more critical of the country's prospects.

Strategic orientation unchanged – biggest risks in eurozone periphery

Monetary policy pivot and a recession in Europe the main considerations for our strategy

We are sticking to our strategic positioning in the current market environment and recommend favouring bonds in the core and semi-core segments. Against the backdrop of a recession in Europe and the ECB's pivot towards monetary tightening, peripheral bonds in the euro area are suffering steady spread widening. Although there is also a risk of total return losses in both the core and semi-core segments from a further rise in yields, these should be lower than in the peripheral segment.

Hunker down with short maturities

Ultra-short maturities on the money market the safest place to be at present

In our view, ultra-short maturities (i.e. the money market) are currently the place to go to shelter from falling bond prices. Investors can park their funds here to avoid the risks of rising yields and spreads at the long end. By doing so investors also minimise volatility. Admittedly they give up any potential price gains due to falling yields, if a recession led to safe haven flows. However, as recent months have shown painfully, losses are currently the order of the day on the sovereign bond markets. Investments on the money market are therefore designed to minimise further potential losses. Investors also benefit from the following relationship at the moment: the shorter the maturity, the higher the carry (see right-hand chart below).

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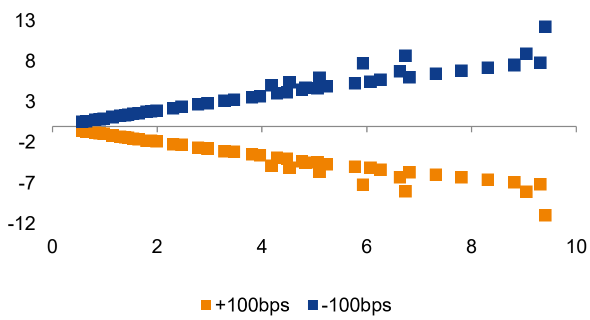
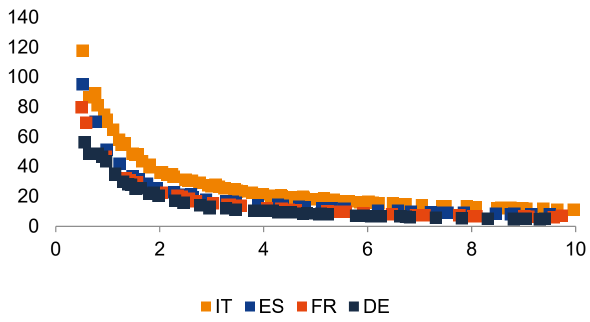
INVESTMENTS AT THE LONG END RISKY – MONEY MARKET A PLACE TO HIDE
Y AXIS: PRICE CHANGES ON THE BUND CURVE IN PERCENTAGE POINTS FOR A GIVEN CHANGE IN YIELD, X AXIS: DURATION IN YEARS



Source: DZ BANK Research, Bloomberg; data as at 5 pm on prior day

THE SHORTER THE DURATION, THE HIGHER THE CARRY AT PRESENT
Y AXIS: CARRY RETURNS OVER THREE MONTHS IN BASIS POINTS, X AXIS: DURATION IN YEARS



Source: DZ BANK Research, Bloomberg; data as at 5 pm on prior day

SSAs

» Asset swap spread of the iBoxx € Agencies inches back up after hitting its all-time low of -24 bp, while the Bund spread climbs as high as 90 bp

» Historically high pick-ups offer opportunities – no sign of crisis sentiment in primary market demand

External influences dominate: London, then Frankfurt

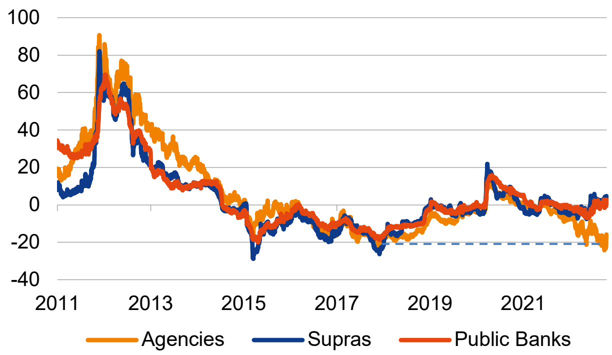
Volatile days on the SSA market

The asset swap spread of the iBoxx € Agencies has risen to -13 basis points (bp) since this publication was last published. Initially, the swap spread was very volatile at the turn of the month. Once again, this was driven by overarching factors that were completely unrelated to fundamental developments in the SSA segment. This time, the culprit was the turmoil in the UK that was sparked by the new government's unorthodox plans to cut taxes. These events triggered a pronounced shift to risk-off mode on the bond market, which was especially beneficial for agencies in the SSA segment. At -24 bp, the asset swap spread of the agencies sector revisited its all-time low of 2017 on 28 September (see left-hand chart below). The spread then began to normalise in the middle of October and more or less returned to where it left off a month earlier. The announcement by the German Finance Agency (DFA) in Frankfurt on October 19 then caused a significant increase in the Bund-ASW spread: The addition of 54 billion euros of German government bonds to the agency's own portfolio also addressed scarcity issues. This was also reflected in the agencies' ASW spread, which at -13 bp most recently rose to its highest level since the end of July.

Agencies-Bund spread hurtling towards its peak of the decade

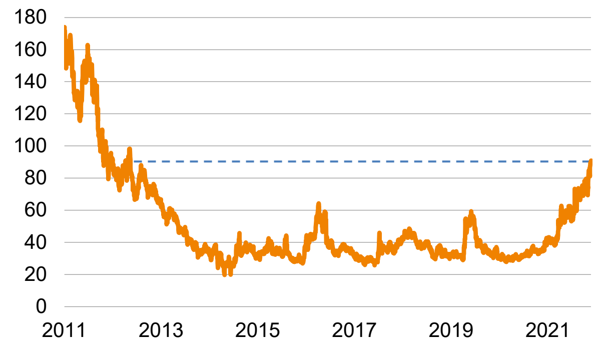
Despite this countermovement, valuation differentials between agencies (or the SSA segment in general) and bunds remain at historically high levels. At its peak, the pick-up rose to 91 bp on October 17, the highest level in almost ten years (currently: 84 bp). Overarching movements in the Bund-ASW spread thus remain of outstanding importance for spread developments on the SSA market.

SWAP SPREAD OF AGENCIES NUDGES ALL-TIME LOW OF -24 BP
ASW SPREADS OF IBOXX € INDICES IN BASIS POINTS



Source: DZ BANK Research, Refinitiv; data as at prior day, 5 pm

BUND SPREAD APPROACHING 10-YEAR HIGH
BUND SPREAD OF IBOXX € AGENCIES IN BASIS POINTS



Source: DZ BANK Research, Bloomberg; data as at prior day, 5 pm

Agencies-Bund spread not expected to normalise for the foreseeable future

Our ASW spread forecast for the iBoxx € Agencies is unchanged (+3/6/12 months: -14/-8/-5 bp). In our Bund-swap spread forecasts too (+3/6/12 months: -85/-85/-75 bp), we are still assuming that Bunds will not become significantly cheaper relative to swaps for the foreseeable future. Hence there is little prospect of the Bund-agencies spread returning to its historic average of around 35 bp any time soon. Instead, we expect the pick-up to remain at a relatively high level of around 70 bp.

Pick-ups versus government bonds at historically attractive levels

Given the complex cocktail of monetary policy tightening, historically high inflation rates and geopolitical uncertainty, demand for especially safe havens such as Bunds is set to remain high. In this context, SSAs are still an attractive alternative to government bonds, particularly for buy-and-hold investors who are comparatively relaxed about intermittent volatility. To take one example, even KfW bonds, which are often viewed as a proxy for Bunds, offer a pick-up of almost 70 basis points in the five-year maturity segment. The historical high of around 100 bp was recorded at the peak of the European sovereign debt crisis around the turn of the year from 2011 to 2012. Back then, the mood of crisis was also reflected on the primary market. However, there can be no talk of a buyer strike on the SSA primary market at present, even though some transactions have only been modestly oversubscribed of late. This has been true of longer maturities in particular, including a new 30-year Bund, as there is not much demand for duration risks in the current environment.

Rating changes last month

Fitch lowers outlook for IFFIm from stable to negative

On 12 October, Fitch downgraded its outlook for the multilateral development institution IFFIm (International Finance Facility for Immunisation) from stable to negative. Its AA- rating was confirmed in this context. The healthcare and vaccination campaigns conducted by IFFIm in numerous developing countries are funded by various sovereign sponsors. The three largest donors are the United Kingdom (46%), Norway (18%) and France (13%). This move by Fitch came against the backdrop of the agency’s downgrade to its outlook for the UK in the prior week.

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Covered bonds

- Higher yields and Bund/swap spread supporting covered bond spread
- Country weighting remains unchanged; continue to overweight core Europe

Short-dated bonds currently in high demand on the primary market

In the first half of this month up to and including 14 October, a total of 13 new covered bond issues in euro benchmark format were brought to market, running to an overall volume of EUR 10.9 billion. This meant that the long-term average for October since 2002, at EUR 10.7 billion, had already been exceeded by mid-month. Primary market activity continued as the second half of the month got under way, even though the nascent reporting season for the banks' Q3 numbers is likely to subdue issuance somewhat over the coming weeks. At present investors have a clear preference for bonds with short maturities. While new issues with medium maturities are also finding sufficient buyers, their order books – as measured by the bid/cover ratio or the difference between the initial spread indication and the reoffer swap spread at the time of pricing – generally look weaker. In addition, although the spread trend of the new covered bonds with medium maturities is broadly stable, their spreads are not narrowing to the same extent as those of short-dated new issues. Where a covered bond features the "green" label, this helps to attract investors for the new paper. Even in the case of ESG covered bonds, however, in our view investors would probably be less forthcoming if the new issues had long maturities. Otherwise, the primary market in high-volume euro covered bonds remains on course for an issuance record. Up to and including the 19th of October, euro benchmark covered bonds worth a total volume of nearly EUR 176 billion had been issued this year. The current record issuance for a full year of EUR 181 billion was set in 2011. We believe this figure will be comfortably surpassed in 2022.

Covered bond yields back at their highest level since March 2012

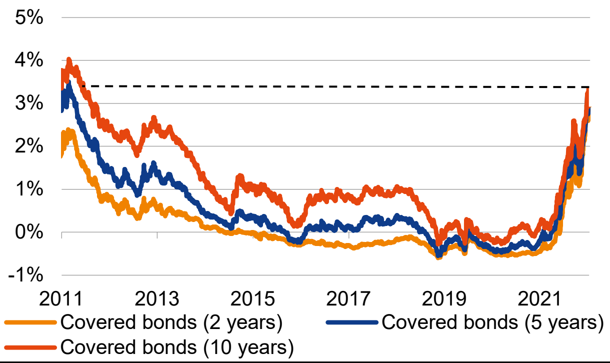
Yield curve flattening, covered bond credit curve steepening

As the left-hand chart on the next page shows, covered bond yields are now higher than at any time since March 2012. Despite some intermittent consolidation, the rapid increase in yields since January has continued over the past four weeks. That said, the 2/10 spread of the covered bond curve stood at a hefty 170 basis points back in 2012, while in mid-October this year it came in at around 40 basis points. The slope of the covered bond yield curve comprises two components: firstly, the ever flatter 2/10 spread of the swap curve, currently at around 30 basis points (source: Bloomberg, as at 17 October 2022). Secondly, we have the premium on covered bonds versus the swap curve (credit curve), which has climbed by a few basis points in recent months. This is because the spreads of covered bonds with longer maturities have come under greater pressure than those of their short-dated counterparts amidst the prevailing environment of rising yields overall. As far as the market as a whole is concerned, the swap spread of the iBoxx € Covered Index has generally moved within a range of between 9 and 13 basis points in September and up to and including 19 October, with occasional overshoots to both the downside and upside.

Key supports for the covered bond spread: higher yield levels and ...

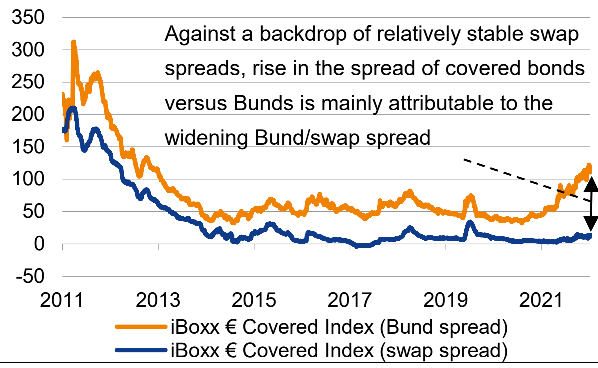
In mid-October the swap spread of the iBoxx € Covered Index intermittently softened somewhat, widening to 13.8 basis points at its peak. As a result, covered bonds were unable to decouple from the trend in other credit markets, even though there are several key supports for the covered bond spread. The rise in yield levels is likely to have lured some investors back to the market who had been driven away by ECB monetary policy over the past few years. Furthermore, covered bonds currently offer a healthy premium of around 100 basis points compared to Bunds (see right-hand chart below).

COVERED BOND YIELDS HIGHER THAN AT ANY TIME SINCE EARLY 2012, BUT THE YIELD CURVE IS CONSIDERABLY FLATTER THAN IT WAS THEN
GENERIC YIELDS OF EURO BENCHMARK COVERED BONDS



Source: Bloomberg, DZ BANK Research; as at: previous day, 17:00h

BUND SPREAD HAS CLIMBED SIGNIFICANTLY, SUPPORTING COVERED BOND SPREADS
IN BASIS POINTS



Source: Bloomberg, Markit, presentation DZ BANK Research; as at: previous day, 17:00h

... Bund spread have heightened appeal of covered bonds

The spread of covered bonds versus Bunds was considerably higher back in 2011 (see right-hand chart above), which was predominantly a result of what for covered bonds were exceptionally high swap spreads during the financial and sovereign debt crisis. Around 2012, the gap between the Bund spread and the swap spread of the iBoxx € Covered Index was lower than it is today. At a level of around 100 basis points, the current gap between these spreads is at a historically high level for the index. Owing to the rise in yields and the high Bund/swap spread, covered bonds have become more attractive to investors seeking bonds with high credit ratings. This is likely to have bolstered the demand for covered bonds.

Negative impact of possible announcement on end of APP reinvestments would put pressure on covered bond spreads in January

The ECB's asset purchases have been another key source of support for covered bond spreads. The fourth quarter of 2022 will see scheduled reinvestments under the third covered bond purchase programme (CBPP3) totalling EUR 5.3 billion, with reinvestments set to rise to a bumper EUR 16.4 billion in the first quarter next year. However, there is a question mark over whether these sums will be fully translated into ECB asset purchases. In the view of our interest rate analysts, it is conceivable that December will see the ECB decide to gradually dial down its monthly reinvestments under the asset purchase programme (APP) to zero by the end of the first half of next year. If this plan is announced in December, we believe it could unnerve investors on the covered bond market. Experience suggests that the relevant announcement has a bigger impact on spreads than the actual reduction of asset purchases. We therefore expect covered bond spreads to come under pressure towards the end of the year and/or in early 2023, when primary market activity is likely to be brisk, and to move out to around 25 basis points. Once the first batch of new issues in 2023 has been placed, we expect spreads to settle down. As a result, the swap spread of the iBoxx € Covered Index should fall back to around 16 basis points, where it will likely remain stuck until early autumn.

Country weightings: as we were

Country weighting remains unchanged

We are not making any change to our country weighting recommendations. We favour bonds from the eurozone, with the exception of Ireland, Italy, Portugal and Spain, which we are underweighting. We recommend continuing to neutral weight all other countries, including Canada.

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Banks

- Spreads set to remain volatile over the coming months
- We recommend sticking with a defensive positioning and continuing to favour bonds of diversified banks with high credit ratings

Credit Suisse and primary market activity exacerbating spread volatility

Bank spreads have continued to rise

Familiar global themes have continued to dominate the capital markets in the last few weeks. Newsflow surrounding the energy crisis, the inflation trend and statements by central bankers on the next steps in combating inflation set the tone, as did the repeated flare-ups in recessionary worries against this backdrop. Aside from some intermittent, short-lived retracements, bank spreads have steadfastly maintained their upward trend since mid-August. Alongside the overarching issues that are putting sentiment among market participants to the test on a daily basis, early October saw mounting speculation about the health and future of Credit Suisse (CS). Statements by CEO Ulrich Körner, who was actually hoping to help calm the situation by referencing the bank's strong liquidity and capital position, were either misinterpreted or too much was read into them. This sparked a collapse in the Swiss lender's share price and a huge jump in its CDS premiums and bond spreads. In the wake of big losses last year and this, CS faces large-scale restructuring, which will probably entail deep cuts, especially in its investment banking arm. The bank intends to publish details of its new strategy together with its third-quarter figures on 27 October. Primary market activity was another factor that weighed on the segment, putting pressure on secondary market spreads. Relatively few bonds have been issued in the past few weeks due to the elevated levels of risk aversion among investors. Issuers have had to pay hefty new issue premiums in some cases to enable these bonds to be placed successfully. These pick-ups have come in at up to 30 basis points (bps) even for large, prestigious lenders, with second-tier banks having to pay as much as twice this level. All in all, the asset swap spread of the iBoxx € Banks Senior has risen by 23 bps since the last issue of this publication on 22 September, while that of the iBoxx € Banks Subordinated has jumped by 31 bps over the same period. The corresponding Bund spreads have widened even more, by +36 and +46 basis points respectively.

No surprises in quarterly results from bulge bracket US banks

US banks reporting lower third-quarter earnings

The major US banks kicked off the reporting season at the end of last week. While these lenders' earnings were down versus the corresponding period last year, most succeeded in beating analysts' expectations. But on closer inspection, the numbers published failed to deliver any real surprises. Essentially, there were two main factors that weighed on big US banks' results. While last year they were able to reverse provisions made due to the Covid-19 pandemic, during the past quarter the banks boosted their loan loss provisions to take account of the expected deterioration in overall economic conditions over the coming year. Following record earnings in investment banking last year, the market in mergers and acquisitions and initial public offerings has now ground to a halt. As a result, banks have seen earnings plummet in this segment. Conversely, net interest income and the capital markets business were among the bright spots. As the Fed initiated its rate hike cycle back in March, the rise in interest rates is already bolstering net interest income for universal banks. Meanwhile on the capital market front, heightened volatility has spurred a surge in client activity in the fixed income business, generating higher revenues for the banks.

What can we expect from the quarterly results of European banks?

Focus on asset quality at European banks

Not all of the trends seen at US banks can be replicated by their European counterparts at this point in time. As the ECB only began to raise interest rates in July, the impact of the rate reversal on the net interest income of eurozone banks is likely to be more limited. Many institutions should benefit from higher TLTRO earnings. However, this will not continue indefinitely as a large portion of TLTRO funds are due to be repaid in June 2023, while the ECB is already exploring ways to cap these “windfall gains” via reverse tiering or other measures. It also remains to be seen whether the European banks will follow in the footsteps of their US counterparts and ramp up their loan loss provisions. Some lenders in Europe have not fully reversed their Covid-related provisions and are likely to keep them in place to cover the expected loan losses next year. Nonetheless, the supervisory authorities are calling on the banks to substantially scale up their loan loss provisions. Andrea Enria, chair of the ECB’s supervisory board, recently warned that banks appear increasingly optimistic with regard to their performance going forward. He also pointed out that the share of all stage 2 loans continued to climb in the second quarter of 2022 to reach a level of some 10%, which could be a sign of heightened credit risk. The supervisory authorities are paying particularly close attention to banks’ exposure to energy-intensive industries. As reported in September, the ECB has requested that euro area banks review their capital projections for this type of exposure under “severe, adverse scenarios”. Steven Maijoor, a member of the ECB’s Governing Council, has asked banks to exercise restraint and prudence, especially in issuing dividends, and indicated that the banks’ payout plans will be assessed by the regulators on a “case-by-case” basis.

Short duration and robust credit quality are the name of the game

A defensive approach is still advised

Spreads are set to remain highly volatile in the weeks and months to come. However, macroeconomic conditions should improve again on a 12-month view according to our forecast, with the spreads of bank bonds as measured by the swap spread of the iBoxx Banks Senior Index likely to fall to 85 basis points. But given the challenging market backdrop, we advise investors to stick with a defensive approach for the time being. We favour bonds with a short duration from banks that have better credit ratings and a diversified business model.

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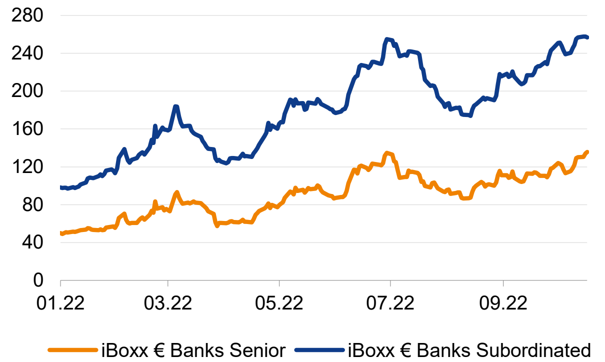
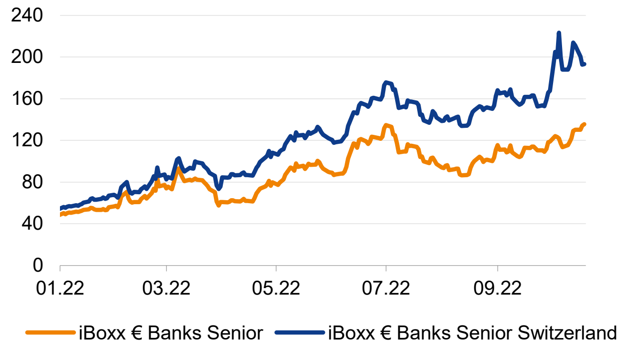
SPREADS STILL HEADING UPWARDS IN OCTOBER
ASW IN BASIS POINTS



Source: Markit, DZ BANK Research; data as at 19 October 2022, 5 pm

TURBULENT MOVEMENTS IN THE SWITZERLAND SUB-INDEX
ASW IN BASIS POINTS



Source: Markit, DZ BANK Research; data as at 19 October 2022, 5 pm

Corporates

- As the reporting season kicks off, there are signs of growing margin pressure, but 2022 targets should be largely met
- Due to technical factors, the asset swap spread has widened much less dramatically than the spread against Bunds and CDS premia
- Our forecasts for the asset swap spread of the iBoxx € Non-Financials Senior Index are unchanged at 95, 90 and 80 bp in 3, 6 and 12 months

Reporting season underway: sales are up, margins are down

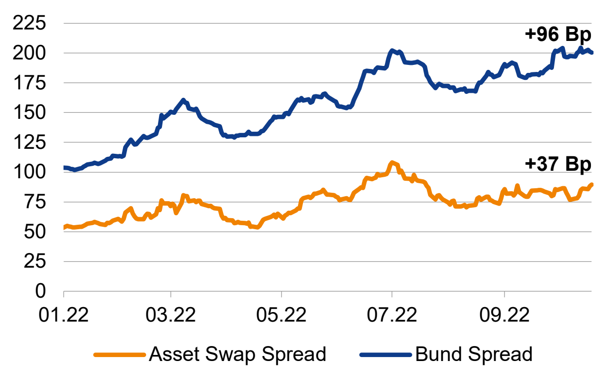
Corporate results for the third quarter of 2022 are beginning to trickle in. What is noticeable so far is that rising prices and continued solid demand have generally boosted growth in sales. Earnings and margins have been squeezed due to the disproportionately high increase in input costs, especially for energy, as well as wages to a growing extent. Food retailer Tesco, for example, reported like-for-like sales growth of 3.2% for the first half of 2022 (spanning March to August). However, the fall in operating profit by almost 10% was not solely due to normalising consumer spending after the removal of most Covid restrictions, but also a growing tendency amongst customers to opt for cheaper products in individual categories. Moreover, in a bid to prevent its customers from migrating to the discounters, Tesco is not passing on cost increases immediately or in full. The drop in earnings would have been even sharper were it not for the company's internal cost-cutting programme.

Consumers cutting back on food spending

BASF gives a taste of difficult quarters ahead amidst energy crisis

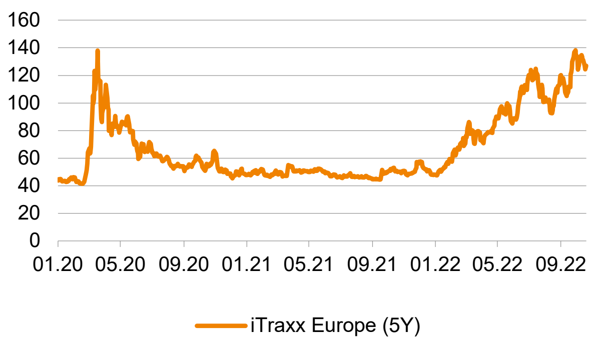
The current backdrop is affecting the energy-intensive chemicals industry even more acutely. Moody's has already warned of growing pressures stemming from higher energy and production costs, combined with flagging demand from end markets. While many companies have attempted to substitute gas with other fuels wherever possible in their manufacturing processes, the options are limited in areas where gas is used as a raw material. The preliminary third-quarter figures from BASF provide a taster of what lies ahead. Despite sales rising by 12%, adjusted EBIT was down 27.7% due the surge in energy and raw material prices. The group even reported a quarterly loss for its German business. Although the downturn is expected to persist in the fourth quarter, BASF has confirmed its guidance for 2022. But it is primarily thanks to a strong performance in the first half of the year that the company is able to meet this year's targets.

BUND SPREADS HAVE WIDENED MORE THAN ASW SPREADS
SPREADS OF IBOXX € NON-FINANCIALS SENIOR INDEX (IN BASIS POINTS)



Source: IHS Markit, Bloomberg, DZ BANK Research; as at: previous day, 17:00

CDS PREMIA BRIEFLY SURPASS COVID CRISIS LEVELS
CDS SPREAD OF ITRAXX EUROPE (5 YEARS, IN BASIS POINTS)



Source: IHS Markit, Bloomberg, DZ BANK Research; as at: previous day, 17:00

Much is already priced in; 2023 guidance most prone to negative surprises

Given the crisis mood that has prevailed in recent months, it is hardly surprising that corporate fundamentals are starting to suffer. A series of softer quarters is also now largely priced in and the only possible trigger for adverse market reactions is if the guidance for 2023 and beyond becomes noticeably weaker than is currently assumed.

CDS spreads above Covid crisis level; Bund spreads at an annual high

The example of CDS spreads shows just how subdued sentiment is on the markets at present. At the end of September, the iTraxx Europe, which consists of liquid credit default swap contracts for 125 investment grade corporates, exceeded the high it reached in late March 2020 at the start of the Covid pandemic (142 bp), coming in at 144 basis points on an intraday basis. On the spot market, the spread of the iBoxx € Non-Financials Senior Index versus Bunds also briefly touched a new high for the year at 204 basis points (see charts above). Thus, spreads against Bunds have widened by almost 100 bp overall since the beginning of the year.

Asset swap spread widening is significantly lower due to technical factors

Conversely, the movements in the asset swap spread for the same corporate bond index paint a different picture. In this case, spreads have widened by only 37 bp in the year to date and are well below the annual high reached in late June. This discrepancy stems from the fact that swap rates have climbed much more sharply than Bund yields, which we mainly attribute to the ongoing shortage of Bunds and brisk demand for payer swaps. At the same time, the asset swap spread's structure as a par/par swap also affects the spread level. Due to the losses in bond prices caused by surging yields, the z spread is currently some 15 basis points higher than the asset swap spread at 105 bp, even though both are referenced against the swap curve.

No change to our spread forecast: 95 bp in 3M, 90 bp in 6M, 80 bp in 12M

As we see no material change in the general backdrop for corporates over the last few weeks and spreads on an asset swap basis have barely climbed since the last strategy publication, we are not making any adjustments to our spread forecasts for the iBoxx € Non-Financials Senior Index (95/90/80 bp in 3/6/12 months) or our sector recommendations.

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SECTOR RECOMMENDATIONS SUMMARY

Sector	Recommendation (current)	Recommendation (last month)	Sector	Recommendation (current)	Recommendation (last month)
Automotive	Negative ↓	Negative ↓	**Consumer goods**	Neutral →	Neutral →
Construction	Negative ↓	Negative ↓	**Food & beverages**	Positive ↑	Positive ↑
Chemicals & agrochemicals	Neutral →	Neutral →	**Oil & gas**	Neutral →	Neutral →
Basic materials	Negative ↓	Negative ↓	**Pharma & healthcare**	Positive ↑	Positive ↑
Retail	Neutral →	Neutral →	**Technology & software**	Neutral →	Neutral →
Real estate	Negative ↓	Negative ↓	**Telecoms**	Positive ↑	Positive ↑
Industrial goods & services	Negative ↓	Negative ↓	**Utilities**	Neutral →	Neutral →

Source: DZ BANK Research; note: the **sector recommendation** indicates whether a sector is seen as outperforming, underperforming or performing in line with the other sectors over the next three months. Our recommendation is "Positive (↑)" if we expect a sector to outperform and "Negative (↓)" if we expect it to underperform. If we do not foresee performance differing significantly from the other sectors, we put a "Neutral (→)" recommendation on the sector.

Asset-backed securities

- Primary ABS market picks up again in September, secondary markets dragged down by turmoil on the British gilt market
- We favour consumer ABS from Italy and France due to the sizeable energy support packages in these countries

Despite a revival in September, the primary ABS market ended the third quarter down almost a third on last year's levels

The primary ABS market sprang back to life in September after a weak August with 22 new issues worth EUR 10.8 billion. On our preliminary figures, however, year-to-date issuance of EUR 155.7 billion to the end of the third quarter was around a third lower than in the same period in 2021. Due to the turmoil on the British gilt market, many UK institutional investors were forced to offload high volumes of ABS bonds, leading to a spike in volatility and spreads on the secondary market. The disappearance of potential investors also meant that previously announced new issues had to be withdrawn. The biggest spread widening over the month in this environment was in Spanish RMBS, which moved out by 45 bp to 225 bp, while lease ABS fell slightly by 5 bp to 60 bp against the general trend. After the British government reversed its tax plans, the situation in the UK recovered somewhat and the spreads of UK paper narrowed sharply by mid-October.

Support packages only partly cushion deterioration in performance

European consumer ABS benefit from the planned support packages – but not equally

European governments have introduced a range of different support packages for consumers and companies to shield them from high energy prices. As set out in the table below, these differ considerably both in their absolute level and as a proportion of GDP. The share of household income spent on energy also varies considerably from country to country. According to the recent Moody's performance report for European consumer ABS, the strain on household finances from the energy crisis has not so far led to a deterioration in collateral performance. However, it is important to note that the support packages reduce but do not completely eliminate the increase in energy costs. From a securitisation perspective, consumer ABS from Italy and France look interesting to us due to the size of the planned support in relation to the importance of energy costs for consumers. Meanwhile we recommend remaining cautious on transactions from Spain and Greece, even though the ratio of support to costs is also very high in these countries.

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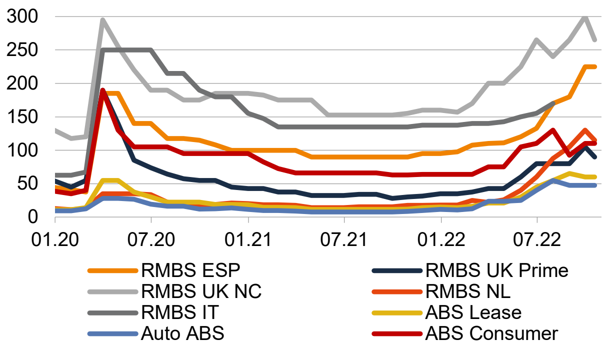
EU COUNTRIES' SUPPORT PACKAGES DIFFER CONSIDERABLY IN ABSOLUTE AND RELATIVE SIZE

Country	Allocated Funding (USD Bn)	Percentage of GDP	Household energy spending; average percentage
Germany	60,2	1,7	9,9
Italy	49,5	2,8	10,3
France	44,7	1,8	8,5
U.K.	37,9	1,4	11,3
Spain	27,3	2,3	8,9
Poland	7,6	1,3	12,9
Greece	6,8	3,7	9,9
Netherlands	6,2	0,7	8,6
Belgium	4,1	0,8	8,2
Sweden	1,9	0,4	9,2
Finland	1,2	0,5	6,1
Ireland	1	0,2	9,2

Source: Bruegel; DZ BANK Research; data as at 25 August 2022

TURMOIL ON BRITISH GILT MARKET HAS HAD AN INDIRECT IMPACT ON EUROPEAN ABS SPREADS
AAA SPREADS IN BASIS POINTS



Source: DZ BANK Research; data as at 12:53 pm on 18 October 2022

ECONOMIC FORECASTS

EUROZONE

	2020	2021	2022	2023
GDP	-6.1	5.2	2.6	-1.0
Private consumption	-7.8	3.7	3.5	-0.6
Government consumption	1.0	4.2	1.7	1.0
Investment	-6.6	4.1	2.2	-0.5
Export	-9.3	10.3	5.6	1.3
Import	-8.8	8.0	6.9	3.1
Other Indicators				
Inflation	0.3	2.6	8.2	6.1
Unemployment rate	8.0	7.7	6.7	6.5
Balance of current account (in % of GDP)	2.6	3.2	1.9	2.4
Budget balance (in % of GDP)	-7.1	-5.1	-4.3	-3.6
Individual country GDP				
Germany	-4.1	2.6	1.1	-1.9
France	-7.9	6.8	2.1	-0.5
Italy	-9.1	6.6	2.9	-1.3
Netherlands	-3.9	4.9	4.2	-0.2
Spain	-11.3	5.5	3.6	-0.9
Inflation rate individual countries (HICP)				
Germany	0.4	3.2	8.2	6.4
France	0.5	2.1	6.4	5.4
Italy	-0.1	1.9	7.9	6.2
Netherlands	1.1	2.8	11.2	7.3
Spain	-0.3	3.0	9.2	5.9

	2021				2022				2023			
GDP	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Y/Y (in %)	-0.8	14.4	3.7	4.6	5.4	4.1	1.2	-0.3	-2.2	-2.4	-0.8	1.3
Q/Q annualized (in %)	-0.4	8.2	9.0	2.0	2.7	3.1	-3.0	-3.9	-4.7	2.1	3.5	4.6
Inflation	1.1	1.8	2.8	4.6	6.1	8.0	9.3	9.4	8.1	6.5	5.2	4.6

UNITED STATES

	2020	2021	2022	2023
GDP	-2.8	5.9	1.5	-0.8
Inflation	1.2	4.7	8.7	5.8

	2021				2022				2023			
GDP	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Y/Y (in %)	1.2	12.5	5.0	5.7	3.7	1.8	1.5	-0.9	-1.9	-1.4	-1.0	0.9
Q/Q annualized (in %)	6.3	7.0	2.7	7.0	-1.6	-0.6	1.5	-2.8	-5.4	1.3	3.3	4.6
Inflation	1.9	4.8	5.3	6.7	8.0	8.6	8.3	9.6	8.4	6.2	5.1	3.9

Source: Eurostat, BLS, BEA, Refinitiv, DZ BANK

DZ BANK FORECASTS

BUND YIELDS IN PERCENT

	Current	+3 months	+ 6 months	+12 months	31.12.2023
refi rate	**1.25**	**2.50**	**2.75**	**2.75**	**2.75**
prior value		*2.50*	*2.75*	*2.75*	*2.75*
deposit rate	**0.75**	**2.00**	**2.25**	**2.25**	**2.25**
prior value		*2.00*	*2.25*	*2.25*	*2.25*
1 year	2.12	2.64	2.84	2.83	2.83
2 years	**2.16**	**2.60**	**2.80**	**2.80**	**2.80**
3 years	2.11	2.49	2.69	2.72	2.72
4 years	2.22	2.35	2.55	2.62	2.62
5 years	**2.28**	**2.25**	**2.45**	**2.55**	**2.55**
6 years	2.26	2.16	2.37	2.49	2.49
7 years	2.37	2.05	2.28	2.42	2.42
8 years	2.31	1.95	2.20	2.35	2.35
9 years	2.35	1.89	2.13	2.31	2.31
10 years	**2.44**	**1.90**	**2.10**	**2.30**	**2.30**
prior value		*1.80*	*2.10*	*2.30*	*2.30*
15 years	2.62	2.15	2.31	2.50	2.53
30 years	2.40	2.10	2.20	2.35	2.40
UNITED STATES IN PERCENT					
upper Fed rate	**3.25**	**4.50**	**4.50**	**4.50**	**4.50**
prior value		*3.75*	*4.00*	*4.00*	*4.00*
lower Fed rate	**3.00**	**4.25**	**4.25**	**4.25**	**4.25**
prior value		*3.50*	*3.75*	*3.75*	*3.75*
3 month SOFR	3.99	4.65	4.60	4.60	4.60
10 years Treasuries	**4.16**	**3.80**	**4.00**	**4.25**	**4.25**
prior value		*3.50*	*3.80*	*4.20*	*4.25*

Source: DZ BANK Research; as at: 20.10.2022, 09:45

EUR SWAPS IN PERCENT

	Current	+3 months	+ 6 months	+12 months	31.12.2023
1 month Euribor	0.94	2.45	2.65	2.70	2.70
3 month Euribor	**1.46**	**2.60**	**2.75**	**2.80**	**2.80**
6 month Euribor	2.06	2.70	2.80	2.85	2.85
12 month Euribor	2.68	2.80	2.90	2.90	2.90
1 year	2.74	3.00	3.20	3.20	3.20
2 years	**3.08**	**3.40**	**3.60**	**3.55**	**3.55**
3 years	3.13	3.36	3.57	3.53	3.53
4 years	3.16	3.20	3.40	3.38	3.38
5 years	**3.19**	**3.10**	**3.30**	**3.30**	**3.30**
6 years	3.21	3.07	3.28	3.28	3.26
7 years	3.22	2.99	3.22	3.24	3.17
8 years	3.24	2.90	3.15	3.20	3.10
9 years	3.26	2.84	3.09	3.18	3.09
10 years	**3.28**	**2.85**	**3.05**	**3.20**	**3.20**
prior value		*2.75*	*3.05*	*3.20*	*3.10*
15 years	3.29	2.95	3.09	3.25	3.27
30 years	2.61	2.45	2.50	2.65	2.70

Source: DZ BANK Research. Bloomberg; as at: 20.10.2022, 09:45

I. IMPRINT

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3.1 The **Research Reports** (Financial Analyses and Other Research Information) of DZ BANK are independently prepared by its employed analysts or by competent analysts commissioned in a given case on the basis of the binding **Conflicts of Interest Policy**.

3.2 Each analyst involved in the preparation of the contents of this Research Report confirms that
– this Research Report represents his independent specialist evaluation of the analysed object in compliance with the Conflicts of Interest Policy of DZ BANK and
– his compensation depends neither in full nor in part, neither directly nor indirectly, on an opinion expressed in this Research Report.

4. Categories for Evaluations / Statements in Other Research Information

Not every item of Other Research Information contains a statement on a certain investment or a valuation of this investment. The **categories** for **evaluations / statements** used in **Other Research Information** of DZ BANK are defined as follows.

4.1 Statements on Isolated Aspects of an Investment Decision

Statements on the **isolated evaluation of specific aspects** that **precede an investment recommendation** on a financial instrument and / or an issuer - **especially** according to the **sustainability criteria** defined by DZ BANK, its defined **value approach**, its defined **asset allocation** (DZ BANK Sample Portfolio), its defined sector strategy Euro-Stoxx (**DZ BANK Sector Favorites**), its defined valuation of payments to beneficiaries (**DZ BANK Dividend Aristocrats**), their **weighting recommendations for market segments** or otherwise defined groups of different issuers, i.e. their **weighting recommendations in the overall market strategy Fixed Income**, in the **sector strategy Corporates** and their **weighting recommendations for covered bond jurisdictions** - are **not investment categories** and therefore **do not contain** any **investment recommendations**.
These isolated statements **alone** are **not sufficient** to form the basis of an investment decision. Reference is made to the explanation of the used relevant methods.

4.2 Sustainability Analysis

Issuers of shares and bonds are analysed on the basis of predefined **sustainability factors** and classified in isolation as '**sustainable**' or '**non sustainable**'. For sovereigns, a classification as '**transformation state**' can be made that lies between these two classifications.

4.3 Share Indices

For defined share indices, share price forecasts are made at regular intervals. From the comparison between the current prices and the prepared forecasts on the development of such equity indices, **investment recommendations that are not generally definable and that cannot be defined in advance** may be developed.

4.4 Currency Areas

The assessment of an investment in a **currency area** is based on the total return that can be expected from an investment in the corresponding **currency area**. As a rule, this total return results primarily from the forecast exchange rate change. In addition, the general interest rate level and a possible change in the yield level of the bonds on the corresponding bond market to be taken into account are included in the assessment. A Sharpe ratio, which adjusts the expected yield using the average standard deviation of the total return over the past two years, is used to calculate which currency areas are "attractive", which are "unattractive" and which are "neutral".
"**Attractive**" means that the risk-adjusted exposure in the currency area is expected to show an above-average and positive return over the next six to twelve months.
"**Unattractive**" means that the risk-adjusted exposure in the currency area is expected to show a below-average and negative return over the next six to twelve months.
"**Neutral**" means that the risk-adjusted exposure in the currency area is expected to show relatively low or average returns over a period of six to twelve months.
The aforementioned returns are **gross returns**. The gross return as success parameter relates to bond yields before deduction of taxes, remunerations, fees and other purchase costs. This compares with the net return of a specific investment, which is not calculated and can deliver significantly lower returns and which measures the success of an investment in consideration of / after deducting these values and charges.

4.5 Weighting recommendations for market segments

Weighting recommendations for market segments or otherwise defined groups of different issuers, i.e. their **weighting recommendations in the overall market strategy Fixed Income**, in the **sector strategy Corporate Bonds** and **their weighting recommendations for Covered Bond jurisdictions**, are **not independent investment categories** and therefore **do not** contain **investment recommendations**.
These isolated statements **alone** are **not sufficient** to form the basis of an investment decision. Reference is made to the explanation of the used relevant methods.

In the case of recommendations on market segments or otherwise defined groups of different issuers, the terms "Overweight", "Underweight" and "Neutral weight" are used.
"Overweight" means that the aforementioned bond segment is expected to perform significantly better on a six-month horizon than the average of the other bond segments in coverage, both in the event of a positive and negative overall market trend.
"Underweight" means that the aforementioned bond segment is expected to perform significantly worse on a six-month horizon than the average of the other bond segments in coverage, both in the event of a positive and negative overall market trend.
"Neutral weight" means that the bond segment in question is expected to perform approximately in line with the average of the other bond segments in the coverage over a six-month period.
The weighting recommendations for market segments or otherwise defined groups of different issuers are independent of the recommendations for individual issuers or those of superordinate or subordinate market segments. They are relative, i.e. if not all the segments mentioned are weighted "Neutral", at least one bond segment is weighted "Overweight" and one bond segment is weighted "Underweight". Accordingly, the weighting recommendations are not an absolute statement about profit and loss (cf. DZ BANK methodological studies at **www.dzbank.com/disclosures**).

1. Overall market strategy
The weighting recommendations in the overall Fixed Income market strategy refer to the comparison of bond segments relative to one another. There are currently five bond segments in the overall market strategy: 1. Government Bonds, 2. Agency Bonds, 3. Covered Bonds, 4. Bank Bonds (senior unsecured), 5. Corporate Bonds (senior unsecured). Calculations of the total return are decisive for the expected performance. The weighting recommendations in the overall market strategy are independent of the weighting recommendations within the individual bond segments themselves, because the respective peer group within each individual bond segment is a completely different one. For example, weighting recommendations within government bond sector refer to issuer countries in relation to each other, which have no relevance at the level of weightings in the overall market strategy.

2. Sector strategy Corporate Bonds
In the corporate bond segment, we summarise the relative performance we expect of a sector in comparison with the developments forecast for the other sectors in a sector assessment. Calculations of the credit spread return are decisive for the expected performance.

3. Strategy Covered Bonds
Our weighting recommendations for Covered Bond jurisdictions ("country") are based on a comparison of the respective country segment (sub-index within the iBoxx € Covered Index) with the total index (iBoxx € Covered Index). The credit spread return is decisive for the expected performance.

4.6 Derivatives
For derivatives (**Bund futures, Bobl futures, treasury futures, Buxl futures**) the **arrows** (🡹) (🡻)(🡺) **merely indicate the trend direction** and **do not** contain **any investment recommendation**. The trend direction is derived solely from the use of generally recognised technical analysis indicators **without** reflecting **an analyst's own assessment**.

4.7 Commodities
"**Upward arrow** (🡹)" means that the absolute price increase expected in the next twelve months is greater than 10%.
"**Downward arrow** (🡻)" means that the absolute price decline expected in the next twelve months is greater than 10%.
"**Arrow pointing to the right** (🡺)" means that the absolute price change expected in the next twelve months will lie between +10% and -10%.

5. Updates and Validity Periods for Other Research Information

5.1 The frequency of **updates** of **Other Investment Information** depends in particular on the underlying macroeconomic conditions, current developments on the relevant markets, the current development of the analyzed companies, measures undertaken by the issuers, the behavior of trading participants, the competent supervisory authorities and the competent central banks as well as a wide range of other parameters. The periods of time named below therefore merely provide a **non-binding indication** of when an update may be expected.

5.2 **No obligation exists to update an Other Investment Information**. If an Other Research Information is updated, this update **replaces** the previous **Other Research Information with immediate effect**.
If no update is made, investment recommendations **end / lapse on expiry** of the **validity periods** named below. These periods **begin** on the **day** the Other Investment Information was **published**.

5.3 The **validity periods** for **Other Research Information** are as follows:

Sustainability analyses:	twelve months
Analyses according to the **value approach**:	one month
Asset allocation analyses (**DZ BANK Sample Portfolio**):	one month
Euro Stoxx Sector Strategy **(DZ BANK Sector Favourites)**:	one month
Dividends **(DZ BANK Dividend Aristocrats)**:	three months
Share indices (fundamental):	three months
Currency areas:	six to twelve months
Weighting recommendations for market segments	six months
Overall market strategy	six months
Sector strategy Corporate Bonds	six months
Strategy Covered Bonds:	six months
Derivatives (Bund futures, Bobl futures, treasury futures, Buxl futures):	one month
Commodities:	one month

5.4 In a given case, updates of Other Research Information may also be **temporarily suspended without prior announcement** on account of compliance with supervisory regulations.

5.5 If **no updates are to be made in the future** because the analysis of an object is to be discontinued, notification of this shall be made in the final publication or, if no final publication is made, the reasons for discontinuing the analysis shall be given in a separate notification.

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6.6 The remuneration of employees of the Research and Economics Division depends neither in whole nor in the variable part directly or materially on the earnings from investment banking, trade in financial instruments, other securities related services and / or trade in commodities, merchandise, currencies and / or on indices of DZ BANK or the companies of the DZ BANK Group.

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Under no circumstances can or should an Other Research Information replace a specialist investment advice necessary for a specific investment. For this reason an Other Research Information cannot be used as sole basis for an investment decision.

8. **Summary of used Methods and Procedures**

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