



## Global Fixed Income Macro Outlook Pricing sigma

- Virus developments challenge prior consensus assumptions...
- ...leaving longer-dated bond yields no higher than ten months ago
- Meanwhile, credit markets look expensive as China questions loom

### Summary

Heading into 2022, volatility in global bond markets is rising, with 25bps one-day moves in front-end Eurodollar contracts, a sharp and chaotic rise in USDTRY and China high yield spreads already wider than the levels reached in US high yield in 2008. While 10-year Treasury yields are no higher than ten months ago, if you look more broadly across global fixed income, multiple sigma events are back.

In September, in our outlook entitled "[Tunnel Vision](#)", we discussed the fixed income market's narrow fixation on inflation, the popularity of bear-steepener positions in US Treasuries and the consensus overweight in credit. We pointed to Harvard and Cornell University psychologists Christopher Chabris and Daniel Simons who showed in their "Invisible gorilla experiment" the role of selective attention, in which humans can cognitively become focused solely on one subject at the expense of noticing and considering others.

Since then, we think fixed income markets have started to broaden their horizons. With the first lockdowns in central and northern European countries in mid-November, an aggressive flattening of the Treasury curve and evidence of short covering in longer-maturity tenors, the steepener is

### Outlook

For professional investors  
Q1 2022

Robeco Global Macro team

Jamie Stuttard, Michiel de Bruin, Bob Stoutjesdijk, Rikkert Scholten, Martin van Vliet, Regina Borromeo, Stephan van Ijendoorn, Rogier Hoogeveen

arguably no longer the main pain trade. The US long bond now trades close to the forwards that were priced in January this year. Yet in the short term, the process seems incomplete: the size of recent shock declines in global bond yields on news of the omicron variant suggests bond investors are still not positioned where they need to be relative to their liabilities.

Heading into 2022, what might markets be missing? We see three topics. First, is the next chapter in China credit. In September, we cited the risk of an acceleration in volatility in the China high yield property market. Now, with widespread real estate defaults priced and economic slowdown underway, the question is how contagion might spread to smaller and medium-sized Chinese banks and the local-government sector. After all, for the banks, for every borrower there is a lender. For local governments, land sales have now halved. Second, we think most market participants need to reassess their assumptions on Covid. Third, we note a myriad of political and geopolitical risks, including the US debt ceiling (again), Article 16 questions between the UK and the EU, and a broad range of flashpoints along the EU's eastern front, from Polish sovereignty matters, to Belarus geopolitics, Russia-Ukraine tensions and the clash between monetary policy and politics in Turkey. Of this third category, only the debt ceiling could give a surprise of truly global significance. Nevertheless, regional volatility is possible and should many of these events turn sour at the same time, that could coalesce into a risk-off tone.

These three factors should be viewed alongside (and not in place of) the inflation debate, which rumbles on. Since our last quarterly, used-car prices have headed higher in the US, and European natural gas prices remain stubbornly high amid a hydrocarbon transition that might not have planned fully for geopolitical contingencies. Supply chain disruptions continue, and wages in the lowest-income quartile are still rising quickly in the US as labor market mismatches persist. Rental inflation is now starting to rise too. In 2022, the progress on all these variables will influence central bank attempts to roll back pandemic-easing measures. Overall, we think the peak has just been reached for Eurozone inflation, while the US looks stickier in H1 2022. We expect an eventual moderation globally in H2, as base effects and supply chain disruptions ease, but to a higher inflation run rate than the past ten-year average. Still, the pricing of inflation expectations looks to be getting ahead of itself.

On the virus, with the discovery of the latest variant by scientists in South Africa, events are moving quickly. As of 26 November this was labelled *Nu*. Within 24 hours it had become *omicron* (with the World Health Organization skipping out the fourteenth letter of the Greek alphabet). Nomenclature aside, we think this illustrates the

importance of taking a more dynamic view. After all, omicron will not be the last mutation, and is therefore also unlikely to be the last variant of concern (VOC). It would be presumptuous to rule out the evolution of pi, rho and sigma in due course, and we may well be back to a new alpha (or equivalent) once omega is passed and the 24 Greek letters (minus those not used) have been ascribed. These new future mutations (which have not yet occurred, but which we can reasonably expect) may or may not threaten vaccine efficacy or change transmissibility assumptions. But if markets do not consider how future scenarios might evolve and how weighted scenario-based risk premia should then be priced, multiple sigma events (such as those of late November) will recur. Taking the approach of the Tel Aviv University paper we referenced last quarter, our base case is that the world population will need to achieve sufficient levels of mucosal immunity for the virus to diminish in market importance. This isn't just extrapolation, rather the blending of scientific findings into the forecast.

In sum, we note several multiple sigma events across fixed income markets. We think the way to approach this environment is to keep a broad perspective and look for asymmetry. That includes a long-duration stance in China given the potential requirement for substantial policy easing. Conversely, we think the long end of the JGB market is most asymmetrically exposed to higher yields, should the higher-inflation regime prevail. In European sovereign spreads, political events first in Italy and then in France come into focus in H1 2022, suggesting underweight positions versus other European spread products, albeit in the context of ongoing ECB purchases. In Treasuries and Bunds, we still like flatteners, although we think the value in the US has now shifted to 2s5s.

In credit, we note spreads in EUR and USD IG and HY have just begun to widen, and many sellside strategists are beginning to come round to a more cautious point of view. The buy-side is still largely overweight credit, so a potential mindset shift looks likely. Shifting a large real money book tends to have a larger market impact than the stroke of a strategist's pen, so we can expect a market impact here.

In Asian credit, the potential spillover to local government bonds and small and medium-sized banks is the key question. IG China financial spreads are highly asymmetric here, a very different proposition to China high yield spreads, which already price in deep sectoral recession and widespread defaults. This oddly compartmentalized current market pricing makes the outlook for China IG financials highly asymmetric, and ripe for a bearish portfolio stance. Emerging markets appear vulnerable either to a stronger dollar scenario, should inflation fears resume, or to the China hard-landing scenario.

# Contents

Macroeconomic and policy outlook ....4

Rates strategy ..... 7

Fixed income asset allocation .....8

# Macroeconomic and policy outlook

## Growth outlook: evaluating triple-dip risks

With the Northern Hemisphere winter coming, and virus cases rising, some economic impact now appears almost inevitable. However, we see a somewhat divergent fate for the manufacturing sector versus the (contact-intensive) services sector.

In manufacturing, it is clear that lingering bottlenecks in the supply of intermediate goods, commodities and freight transport are still restraining industrial production growth. The motor vehicle and electronic equipment sectors continue to feature negatively in this regard. Encouragingly, however, bottlenecks in Asia electronics are showing the first signs of easing, and global freight rates have also stopped rising. While port closures in China amid an ongoing zero-Covid-policy approach obviously pose a lingering risk, this might offer some positive perspective going into 2022.

‘While supply chain bottlenecks were primarily due to pandemic-related disruptions last year, strong consumer goods demand has increasingly been a factor during 2021’

While supply chain bottlenecks were primarily due to pandemic-related disruptions last year, strong consumer goods demand has increasingly been a factor during 2021, especially in the US and UK. Still-high backlogs and replenishment of low inventory levels should support manufacturing output growth in 2022 – if bottlenecks ease. Further, inventory restocking may accelerate as businesses seek to avoid potential future missed sales due to a lack of stock.

At the same time, however, there are signs that underlying end-demand for manufactured goods is slowing down. This is not merely a function of the negative momentum in the combined fiscal and private-sector credit impulse for the US and Eurozone that we have been highlighting. It also relates to the slowdown in domestic demand in China – where the credit impulse had already turned negative more than six months ago, and the property sector undeniably is in a downturn. With infrastructure investment also below par and consumer spending fragile, we struggle to see how manufacturing investment and already-strong exports can

provide sufficient offset. Perhaps new restrictions to services spending could temporarily boost goods demand outside of China further. This brings us to the outlook for (contact-intensive) services sector spending – which still seems tied to the path of the virus.

The recent sharp rise in cases and, more importantly, hospitalization rates across Northern Europe echo Israel’s experience during July-September. Renewed mobility restrictions impacting the services sector is our base case this winter.

The rollout of booster shots and increase in (mucosal) immunity through infections – which offers more powerful protection against future infections than vaccination – and societal lethargy with restrictions imply that the hit to mobility and services activity might not be as severe as last winter. Still, we can’t rule out that quarterly GDP in some European countries may struggle to expand, potentially culminating in a mild recessionary triple dip. Moreover, the recent discovery of the mutant Covid variant B.1.1.529 serves as a reminder of the downside risks of a new escape variant.

For EM, the potentially reassuring news, as highlighted three months ago, is that some countries appear to have high(er) levels of immunity built through prior infections. Moreover, vaccine rollout has continued to progress in recent months. Set against that, many EM economies have a generally higher sensitivity to China’s growth path, and monetary policy tightening in others has been stepped up amid increased inflation.

All considered, we think it will be increasingly challenging for global economic growth to meet consensus expectations into 2022. On the upside, still-buoyant housing markets and remaining excesses in savings (albeit unevenly spread across income cohorts and geographies) can continue to support domestic demand in many DMs including the US. On the downside, besides the virus developments, potential shocks include the looming debt ceiling timeline in the US, geopolitical developments (e.g. near Ukraine), and elections in parts of Europe.

## Inflation – a bigger wave may still be a wave

Many central banks have acknowledged that the risk of a more prolonged period of above-target inflation has gone up. This isn’t so much due to a re-evaluation of the transitory nature – or otherwise – of the specific factors

driving elevated headline CPI prints, such as supply chain bottlenecks. Rather, it is because if they persist for longer, and hence heighten the risk of so-called second-round effects on wages, this could in turn lead to further price increases, despite the sharp base-effect-driven inflation declines from Q1 2022 onward.

Ideally, central banks would like to see an outcome of higher wage growth driven by reduced slack in the wake of robust hiring (as per the Fed's new and more inclusive employment mandate), as opposed to pandemic and demographics-related labor shortages and/or a de-anchoring of inflation expectations.

While some of the supply chain bottlenecks relate to higher US and UK goods spending, others – such as in certain commodities (e.g., natural gas, fertilizer and magnesium) – seem more reflective of supply disruptions. The latter are therefore less indicative of excessive spending, let alone excessive money growth. The wide gap between PPI and CPI inflation in China is a good example of how inflation in some economies is more supply-led rather than being driven by consumer demand. The collapse in iron ore and lumber prices after their sharp rise, illustrates the role of financial market froth too, an evidently transitory factor.

Now, global goods spending might receive a fresh impetus from the Northern Hemisphere coronavirus wave. But this may come at the expense of restrictions on consumer services – and hence should act to keep a lid on services inflation, leading to a slowdown in the expected compositional shift rather than a change in levels.

## 'In the US, high used-car prices and further increases in rental inflation are likely to keep core inflation elevated in coming months'

In the US, high used-car prices and further increases in rental inflation are likely to keep core inflation elevated in coming months. Strong increases in the lowest-income-quartile wages are also visible in the price of services, such as food away from home and recreation. Still, while they provide striking examples of news headlines (bonuses at Burger King, 10% wage hikes at McDonald's) their impact on overall CPI is limited. From March onwards we expect headline inflation to decline, reaching 3¾% in June and 2¾% in December 2022.

In the Eurozone, headline inflation looks to have reached a new 20-year high in November, but from January, when the German VAT base effect falls out and energy tax cuts kick in,

it should start to trend lower. In our models, after initial sharp falls, the descent back towards 2% may well take until late 2022. In the UK, RPI is now at 6.0% and we expect to see a new 30-year high in H1 next year as energy prices keep increasing in tandem with services inflation (leisure, restaurants). In the second half of 2022, we expect RPI to drop sharply to 4.0% as base effects start to kick in. That said, core inflation in the UK is expected to stay above the policy target for the entire year of 2022 and only to fall back to the target by end-2023.

As in the US, wages are key for the national central banks in the Eurozone. For now, underlying wage growth in the bloc as a whole seems subdued, amid still-substantial labor market slack. That said, in the course of 2022 – and pandemic permitting – we expect to see upward pressure in Northern European countries including Germany, where many more businesses cite labor shortages compared to Southern Europe.

## Fiscal & QE policy: not so fast...

*For the policy outlook, we look at QE and fiscal policy together, given the former's enabling role for the latter, before moving on to rate policy.*

Even as fiscal policy continues to support recoveries across many DMs, the fiscal *impulse* – which measures the change in incremental support – is set to turn less favorable in 2022. This is despite policies first in the Eurozone (where money from the NextGenerationEU recovery fund will keep on flowing to Southern and Eastern European economies), and second in the US, where the Senate still needs to vote on the USD 1.9 trillion Build Back Better act – having adopted the USD 1 trillion Infrastructure bill in November.

Central bank balance sheet policies are also turning incrementally less supportive as perceived risks of stickier inflation have risen. Following the RBNZ earlier this year, the BoC has announced an end to net new bond purchases. The BoE will probably also be done soon, while the RBA has signaled its intention to end its program, too, in this case by May 2022.

Meanwhile, the Fed has indicated that the monthly tapering of its sovereign and MBS purchases should be finished by mid-2022. If recent Fed comments are any guide, the risk seems skewed to a faster taper process. That said, some backtracking could occur, particularly if the virus outlook in the US takes a turn for the worse this winter.

Until recently, the ECB also seemed intent on bringing net purchases under its PEPP program back to zero by mid-2022, and possibly by end Q1. But the current monthly run



rate of EUR 20 billion under the 'regular' APP program is likely to be retained. Further, to avoid a QE cliff effect, an extra APP envelope might well be contemplated. Alternatively, a QE backstop tool (perhaps even a dormant PEPP with fresh spending power) might be considered. Either way, it seems the ECB will be buying bonds across the Euro agg spectrum under one acronym or another once again in 2022. Moreover, we expect the ECB to hint soon at the launch of a green or climate loan TLTRO facility, and perhaps additional TLTRO-III operations, albeit at less favorable terms.

Meanwhile in China, where balance sheet expansion has been much more limited thus far, the PBoC has shifted to an easing stance given the property sector and broader economic slowdown. It has shied away from broad-based easing in recent months, sticking instead to targeted liquidity support measures, among others to fund green or climate-oriented projects. Still, the long-term risks seem skewed to balance sheet expansion, not compression.

### Interest rate policy: who's next?

We still believe most G-10 central banks will stick to the Fed's normalization blueprint of 2013-2015, with rate hikes coming *after* net asset purchases have finished (see our latest [Central Bank Watcher](#)). Rate hikes in the G-10 central banks space in the next three months therefore look confined to Norges Bank, the RBNZ (if it wants to add another hike to the one implemented in late November), and perhaps the BoE – although the latest virus news has already prompted more cautious rhetoric.

communication errors and sentiment swings seems to be building again, suggesting front-end range-trading opportunities, based on valuations.

The ECB's forward guidance on policy rates – aligned to the new 2% inflation target in July – still hints at a possible rate *cut*. Markets, by contrast, price in around 10bps and 30bps of hikes respectively, one and two years out. We agree with ECB President Lagarde that the conditions for lift-off – i.e. including sufficient realized progress in underlying inflation, which in our view entails noticeably higher Eurozone wage growth – are unlikely to be met "anytime soon". Hence, we ascribe a lower probability than markets to a first ECB rate hike within the next 12 months. We do think there's still room for markets to price in more rate tightening further out as it will take time before the transitory view on inflation transpires to be correct (or in case it proves incorrect). The latter obviously may not play out before the European virus outlook brightens.

In China, policymakers seem of the view – perhaps out of concern about reflating a property bubble – that policy rate cuts are not warranted for now, and that targeted monetary easing and fiscal support will mitigate the downtrend in growth amid moderate underlying inflation pressures. We doubt this, and believe risks remain skewed to lower rather than higher policy rates in the coming 12 months.

'If Fed tapering were quickened and indeed completed in Q2 2022, the earliest realistic lift-off date for rates would be somewhere around the middle of 2022'

If Fed tapering were quickened and indeed completed in Q2 2022, the earliest realistic lift-off date for rates would be somewhere around the middle of 2022. Judging from the shape of the fed funds futures curve and the three 25bps hikes priced by the start of 2023 (at the recent highs in Eurodollar prices), the market seems to be set up for such a faster taper, quick lift-off scenario. Still, don't forget that in 2014, it took the Fed more than a year to hike rates after tapering was finished. During the pre-lift-off period in 2014-2015, the market experienced several waves in which significant rate hikes were priced in, followed by a quick reversal and pricing out. The ideal set up for

# Rates strategy

## Prospect of Fed hikes shifts the flattener shorter

Despite all the uncertainty around inflation, the virus and bond market liquidity, we expect the interest rate regime that has prevailed over the past decades to remain intact. Specifically, we think the trend-wise decline in the observed level of natural interest rates ( $r^*$ ) for the major developed economies has slowed, but not turned. We expect neutral interest rate levels to remain somewhat below those experienced in the last hiking cycle. This assumption serves as a starting point for formulating our views on yield levels, curves and spreads.

‘Despite current heightened uncertainty around inflation, we expect neutral interest rate levels to remain somewhat below those experienced in the last hiking cycle’

For the US, we expect a neutral nominal rate of 1.7-2.5%, as described in our 5-year outlook special topic paper, [Central banks’ post-pandemic playbook](#). Rates can overshoot beyond neutral in a tightening cycle, but over the past decades the observed overshoot has become ever smaller. As a matter of fact, during the Fed tightening cycles ending in 2006 and 2018, there was hardly any overshoot at all.

From here, the timing of the first rate hike matters because we observe from past hiking cycles that when rate hikes become more imminent, the connection between US 10-year yields and market prices for front-end rates two years out tends to strengthen. The implied yield in the 10<sup>th</sup> Eurodollar future reached a peak of 1.85% in mid-November. Uncertainty about the nascent B.1.1.529 Covid variant may derail this relationship in the short run as a flight to quality (FTQ), capitulation in bearish leveraged front-end positions and a mindset shift about the future of the virus and its economic impact this winter drive yields lower near term. Still, once the FTQ has passed, we see room for higher front-end yields in Q1 2022, amid inflation worries. This suggests that 10-year yields can rebound back up to the 1.85% level in due course, so there are two chapters to the near-term and medium-term outlook.

For the curve, for several quarters we have advocated 5s30s flattening positions, based on steepness, the phase of the monetary policy cycle and the crowded nature of the consensus in steepening positions. This has worked well, and the consensus positions are now largely washed out.

We see some room for further 5s30s curve flattening, but at current spread levels and positioning the risk-reward is now much less skewed than it was in Q2 and Q3. From here, we see increasingly attractive opportunities in 2s5s flatteners. This curve segment has steepened towards attractive levels, and it tends to flatten with expected rate hikes coming within a 6-12-month horizon. The flattener has therefore shifted shorter.

For Bunds we work with an expected neutral interest rate range of 0.05-1.25%, and see the lower end of this range as more relevant. Recently, market pricing of the ECB depo rate two years out managed to climb close to a level of 0%, before falling back. As mentioned, we think ECB rate hike expectations for 2022 are premature. We observe a close link between pricing of expected front-end yields and the 10-year Bund. With this in mind, we think it is challenging for German 10-year yields to rise above 0% any time soon. Currently, we are in the middle of our expected trading range of -0.65 to 0.0%. Front-end government paper has seen a year-end related liquidity squeeze recently and this has had a significant impact on the euro rates market. Swap spreads have widened, creating a growing number of relative-value opportunities in high-rated (SSA) bonds. We see room for short-term swap spreads to tighten back again after year-end and await (even) better entry levels for a possible steepener in 2-year EUR swaps vs. 5-year OBLs.

Overweight Chinese government bonds remains our highest conviction (cross-market) rates trade. CGBs have outperformed recently but have not yet set new lows in yield, amid increased issuance of state and local-government bonds and the PBoC’s unwillingness, so far, to cut policy rates. Eventually we think the PBoC will be forced into balance sheet expansion and lower policy rates, leading to lower CGB yields both outright and relative to other sovereign bond markets, such as Japanese government bonds.

Other opportunities in rates are building in the dollar-bloc markets. Australian, Canadian and New Zealand government bonds have seen their yields rise further than the US. Temporary deviations between these markets are quite common, but we would not expect to see any structural divergence in yields within this group.

Our view on inflation-linked bonds remains unchanged. With monetary policy moving in the direction of less accommodation, the outlook for this asset class should be expected to become less attractive. As breakeven inflation has been reaching quite elevated levels on the back of higher spot inflation prints, we see increasing opportunities to approach this market from the short side.

# Fixed income asset allocation

## Credit markets – all eyes on China

Heading into 2022, we are underweight credit across global macro fixed income products. Spreads are expensive by any measure, and they are now no longer tightening. Indeed, in just ten market sessions, EUR IG and EUR HY spreads have widened enough that they are now wider year to date. This illustrates the lack of cushion in spreads, which have traded near the tight end of the cyclical range all year. Even before the omicron headline, we felt the virus was being underestimated, especially in the US. Liquidity is set to be withdrawn further: the Fed's tapering process is finally underway, inflation continues to make central banks nervous and presages the spread of rate hikes from EM central banks and the DM early movers to the Bank of England and eventually the Fed. But above all, China financial contagion scenarios seem hardly priced in at all. If Chinese policymakers blink soon, the amount of re-tightening in China IG seems very modest; but if they are serious about persevering with macroprudential control, the China IG financials bear market may have barely begun.

## Fundamentals – anything but normal

Fundamentally, prevailing economic year-on-year data shows we are in the second year of a new expansion and optically suggests that all is well. However, it is clear from data such as manufacturing delivery times, commodities such as natural gas and magnesium, and lower-income-quartile wages, that this recovery is anything but normal.

Default rates have been extremely low in 2021, and we have no near-term concerns here in western markets. But there are signs that this cycle, with all its Covid-specific features, is different to anything that has come before in recent decades. Corporate credit creation for example is already contracting in real terms, as it did in the secular stagnation decade of 2010-2020. As the contraction follows the bonanza of borrowing in 2020 to create balance sheet buffers, this trend is not necessarily problematic. But it illustrates a lack of follow through in growth momentum. Primary markets in offshore China HY are already shut, far more typical for recession or a credit crunch. The auto sector is hampered by supply chain problems. The leisure and hospitality sector is seeing double-digit wage increases, more indicative of the 1970s. Meanwhile, LBO risk is back, with record amounts of private equity dry powder and news stories of potential targets in European telecom and retail, a characteristic of mid to late-cycle booms, such as the late 1980s. FX and interest rate convulsions in Turkey are more reminiscent of EM volatility amid a rising dollar in the 1990s. So, we have multiple indicators at present suggesting disruption, even dysfunction, and several

different secular directions all at once, rather than a standard cyclical template.

But perhaps none of this really matters much: in the end, it could turn out that events in China will dominate.

## The USD 34 trillion credit boom is far from resolved

As we wrote last time, China has by some distance the largest private sector debt pile in the world. How it is resolved will be a far larger global economic and market driver than any China cycle of two to three decades ago. To recap, per the BIS data, Chinese private sector debt stood at USD 1 trillion at the turn of the millennium. It is now over USD 35 trillion. As such, progress on topics as diverse as iron ore, oil, German manufacturing and producer price inflation will be driven in large part by the upcoming policy choice faced in Beijing: should policymakers try to boost the economy and thus counter the slowdown, or continue with the painful but necessary process of deleveraging? With weekly land transaction volume now down 50% year on year, the bonds of more than 25 real estate groups experiencing price defaults in the offshore market, the primary market in lockdown amid risk aversion, and the threat of systemic contagion now approaching the local-government sector as well as small and medium-sized banks, the impact of Beijing's decision will be felt far beyond China's shores. The February Winter Olympics and the current zero-Covid strategy add to a tricky policy balance.

In this environment, we continue to favor short baskets in those contiguous market areas that, based on systemic risk network analysis and interlinkages, could be the next shoe to drop in the unfolding end to the thirty-year credit boom. This includes China IG financial CDS, sovereign risk, Asia-connected global banks, as well as late-cycle financial entrants into the China credit boom, where the vintage of lending in the last few years of the bubble could be most at risk. Given some recent spread widening, we have already taken some profits here, but on any spread retracement we see opportunities to buy more protection.

## Market factors – tech equity and central bank withdrawal

Despite the China backdrop, US tech equity markets have reached new highs, spurred in part by the narrative that high inflation and low nominal bond yields (which create low real yields) are a good thing. We question that logic, at least in terms of interpreting the fixed income market moves. But we appreciate there is plenty of money in the system from 2020's extraordinary official policies and that macroprudential risk is a typical consequence. In their November Financial Stability report, the Fed highlighted tech equity valuation risks, options leverage, momentum



and retail involvement. The risk to credit from an accident on this front has not gone away.

Central bank withdrawal is becoming more broadly appreciated by the sellside strategist consensus. While the Fed has taken a much longer time to get round to tapering than many of its peers, the process is now underway. We are less concerned about the impact on the US credit markets themselves. However, the experience of 2010-2020 was that central bank stimulus withdrawal (successive ends to QE I, II and III, the long-drawn out tapering, the initial rate hikes and the accelerated rate hikes and balance sheet selling of 2018) had a far bigger impact on more fragile overseas markets. After all, the Greek crisis in 2010, the Italy crisis in 2011, Spain in 2012, the taper tantrum (and so-called EM 'Fragile Five' FX moves) in 2013, the China hard landing and Brazil travails in 2015, before the general bearish spread product trend of 2018, showed global nervousness of Fed policy tightening throughout almost the entire decade. Some of these imbalances have resolved to a degree (the Greek public sector accounts, for example, are now better audited), but debt levels are, if anything, higher. While the focus for much of the US literature has been on how high an  $R^*$  the domestic US economy can handle, perhaps markets should be asking how high an  $R^*$  can be tolerated by the weaker parts of the rest of the world.

### Valuations

Credit spreads stopped tightening in October this year, after 10 months of almost glacial progress. Some specific aspects of the widening (for example EUR swap spreads) could be temporary. More broadly, though, the fizzling out of 2021's credit rally may illustrate the natural mathematical limits of how far corporate bond spreads can tighten. After all, there must be some compensation for default risk, downgrade risk and liquidity risk, even if the consensus is at its cyclically most optimistic on growth. Historical limits in different credit regimes are also relevant.

For more details, please see the forthcoming Q1 2022 *Credit Quarterly Outlook*.

### The virus has the final word into the end of 2021

Before leaving credit, we want to elaborate further on the virus. We have said before it may be dangerous to assume that it is over. But we think the way it is viewed by the consensus also needs a rethink.

In terms of investment philosophy, we believe the virus, as with many macroeconomic themes, should be viewed in *dynamic* rather than *static* terms. To explain, we think markets, as they are reasonably efficient, often take a 'static' view of events, pricing in a snapshot of all the latest available information. But sometimes, when a theme is

only partly played out, there is little apparent pricing of possible *future* scenarios (where events have not yet occurred, but where reasonable projections of risks can be made), particularly where there is a skew in the probability distribution. Credit markets are a good example: the probability of recession for instance is usually barely priced in at all in cyclically ageing high yield markets until it is much too late, even though recessions are cyclically inevitable. As a result, high yield markets routinely see rapid and chaotic adjustments when recessions finally loom.

Different investment horizons and incentives for different market participants, with many believing a short-term gain can be had with a smarter-timed exit than others, helps explain part of this. But we think the focus on the current snapshot (prevailing growth, financial conditions, last quarter's earnings, last quarter's interest coverage, etc.), *as opposed to anticipating what might come next*, is in large part the cause. We would argue the above factors are all known, many have little portent for the future in efficient markets, and as a result are largely irrelevant to the outlook. After all, the fact that Chinese HY property companies could openly borrow in H1 (good financial conditions) at spreads inside of 1000 for single Bs (acceptable interest coverage), had no bearing on events that followed in H2. The illusion of comfort in the snapshot approach repeats the patterns provided by subprime borrowers at L+10 in 2006 (good financial conditions and debt service coverage ratios) or of Greek governments at Bunds+30bps prior to 2009-10 (same thing). Where the fundamentals are deteriorating, the valuations expensive and the positioning crowded, the result is usually a rude awakening in the end. This is why we aim to be contrarian, but it also is why we favor a dynamic approach rather than a static one.

Viewed in this light, we think markets have been pricing Covid as if it has passed (think the 'reopening trade' of summer 2021), focusing on the latest level of cases and activity, rather than the seasonal and underlying trends, virological inputs and epidemiology. Setbacks are priced as if they were intermittent one-offs. In June, for example, a 'back to normal' path was priced into Treasury yields; yet by early August, the spread of the delta variant was more fully priced in with 10-year yields touching 1.15%. Yet delta was viewed as a final last setback, despite new scientific evidence from Israel that a solution reliant solely on four-fifths of populations being vaccinated would not provide a failsafe end to the Covid era. Markets simply did not factor in the risk of further Covid developments.

Fast forward towards year end and new national lockdowns in Austria, mobility restrictions in the Netherlands and rising cases in Europe – starting in the north amid colder climates and gradually spreading south as temperatures drop – has

a familiar pattern to it. As a result, euro credit markets are on track for their first substantially negative excess return month in November 2021 in over 18 months, while Schatz and OBL yields have headed back towards the lows of ranges of the past several years. The chance of a triple dip in the Eurozone economy, echoing the seasonal pattern of last winter's economic contraction, no longer seems outlandish.

## 'Political risks are also likely to be on everyone's mind in Italy'

In the US, until very recently, a static view of the virus situation looked optically very positive: OpenTable bookings and flight passenger numbers had recently recovered to close to pre-pandemic levels. Yet, listening to our in-house specialist Dr Richard Purkiss, and continuing to view the virus through the lens of the Tel Aviv University paper we referenced last quarter, [Comparing SARS-CoV-2 natural immunity to vaccine-induced immunity: reinfections versus breakthrough infections \(medrxiv.org\)](#), it seems very likely the Northern Hemisphere, as a whole, is set for another tough winter. (Why should Covid only return to Europe this winter and not the US?). We suspect high-frequency US consumer service sector indicators, economic forecasts for December and January, and therefore financial market pricing, will need to adjust in order to price in winter waves. That might mean seasonally lower bond yields and positive returns – against the prevailing consensus expectation in rates – and a tougher time in credit, again against consensus buyside positioning.

### Periphery bonds risk ECB communication error

Despite the recent (ECB induced) rise in spreads on peripheral bonds, we think valuations in Italian, Spanish and especially Portuguese bonds remain unattractive. As the ECB has become such a dominant driver of country spreads, peripheral bonds are vulnerable to any withdrawal of stimulus by the ECB, which is exactly the catch-22 the ECB is in. Without continued support, who is willing to buy these bonds at current levels? And if yields of peripheral bonds do rise as the ECB gradually pulls back, how long will it take before markets start speculating about debt sustainability again? Even with the currently planned NGEU investments, Italian GDP growth is likely only to catch up to pre-crisis trends. More than that should not be expected.

The ECB will of course aim to avoid a QE cliff effect once PEPP is ended, perhaps via a temporary, flexible step-up in the monthly pace of its core APP facility or a new QE

backstop tool. In any case, we believe that spread volatility is likely to increase as purchases decline. Any communication error by the ECB when it announces its future plans on PEPP and APP could cause severe pressure on spreads.

Political risks are getting closer as well. In France, dissatisfaction about the government's handling of Covid-19 could give wings to non-centrist presidential candidates Marine Le Pen and Eric Zemmour in the run up to the April elections. If lockdowns need to be re-installed in coming months, the 'protest vote' will not be supportive for the re-election of Macron, at least in the first round of voting.

Political risks are also likely to be on everyone's mind in Italy, where the presidential election in January could mean the end of the current unity government, and its stability, if Prime Minister Mario Draghi is chosen to replace President Mattarella. This could possibly lead to early parliamentary elections and might even lead to delays in NGEU funding due to increased risks of non-compliance with structural reforms, which the European Commission demands in return. We are therefore cautiously positioned in non-core sovereigns in France, Portugal, Spain and Italy.

### EM debt: fundamentals weaken further

The EM fundamental outlook has weakened further. Growth expectations are being adjusted downwards, driven by the China growth slowdown, sticky inflation in certain countries, increasing FX volatility and declining fiscal stimulus or monetary support among the major central banks. Many EM central banks have raised policy rates in advance of DM central banks, with larger-than-expected hikes in Poland and Hungary. However, there are still divergences within the EM universe. Persistent high inflation across central and eastern Europe remains a concern for policy makers, adding fuel to the tightening cycle there. Finally, there are still high numbers of (delta) Covid-19 cases in certain EM countries, along with concerns about the more contagious B.1.1.529 variant spreading across Southern Africa. A further subset of countries have zero-Covid policies, an approach which looks set to be challenged.

Historically, as US real yields remain at their lows, EM flows have been supportive. With US 10-year real yields still below -1%, this remains favorable near term. The prolonged supply chain constraints across Asia and tapering of global demand suggest the outlook will continue to worsen through the first half of 2022, along with a new wave of Covid restrictions. Meanwhile, political risk and intervention in monetary policy in countries such as Turkey and Mexico have increased currency volatility. We remain cautious on EM fundamentals. The overall betas of our macro strategies

are underweight EM spread risk, especially EM hard-currency spreads. Against that, we remain long China rates, given our view of further monetary easing to offset property market restructuring and a potential hard landing.

## FX: USD beats consensus

The pronounced consensus expectation of a USD depreciation in 2021 turned out to be greatly exaggerated. As a matter of fact, an erratic global virus situation, US economic outperformance, and a pivot away from FAIT by the Fed were all components of a stronger USD this year. Year-to-date, the DXY index is up almost 7% and is stronger against almost all other tradeable currencies. The complex nature of the recovery from the pandemic creates an erratic macro and monetary backdrop for FX next year, taking into account what happened in 2021. First, the delta-variant did not just delay reopenings of economies around the globe to varying degrees across countries, it also firmly cemented the idea of Covid-19 as a structural health risk for markets, as northern and central European developments illustrate. Second, and more important, are the broad and persistent range of supply-side issues that have driven a notable differentiation between inflation and economic activity since the summer of 2021. The still reasonable absolute level of growth doesn't warrant the label stagflation in our view, but the expected slowdown in global growth going forward does complicate the challenge for central banks and markets in navigating the highest inflation rates observed in the last two decades.

'Our outlook on EM and the Fed in tandem with our USD view implies trouble for EM and cyclical FX'

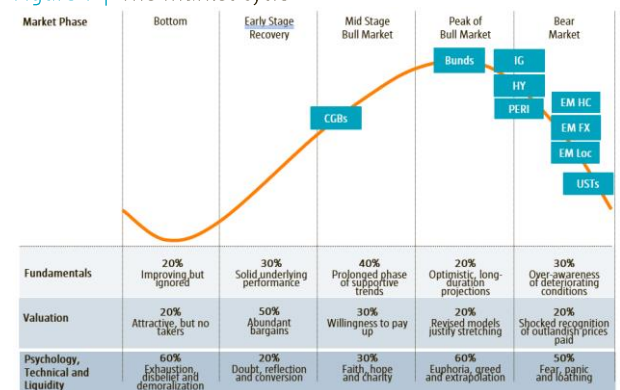
This odd economic situation of decelerating growth and high inflation is expected to impact FX markets in two ways in 2022. First, we think the differentiation in the mix of inflation and growth going forward, as well as the central bank responses to it, creates one of the most divergent yet interesting macro environments for FX in many years. Second, the extent to which central banks are forced to

pivot to curb inflation while balancing slower growth and declining economic confidence will influence the overall trend towards a stronger USD: the pace of the appreciation will likely be tied to the aggressiveness of Fed tightening. Indeed, we are on the cusp of Fed rate hikes next year and that highlights how uniquely quick this economic cycle has been. The USD has transitioned to a more typical advanced mid-cycle phase where moderate USD strength will evolve into outright strength. Confirmation of this can be found by looking at past cycles, in the periods between the end of a US recession and the start of Fed rate hikes. Following that framework, the current cycle has matured faster than any of the past 50 years.

Our outlook on EM and the Fed in tandem with our USD view implies trouble for EM and cyclical FX, in our view. The prospect of higher nominal USD yields, a weakening growth outlook from China and uncertainty on the virus imply that we need to be cautiously positioned in EM FX versus the USD. We have expressed our view in underweights in ZAR and IDR versus USD.

## Asset class positioning

Figure 1 | The market cycle



Source: Robeco, November 2021, Morgan Stanley cycle characterization

Source: Robeco, November 2021

We wish to thank Wei Yao and Michelle Lam (Soc Gen), Lorenzo Codogno (LC Macro Advisors), Ellen Zentner (Morgan Stanley) and Richard Purkiss (Robeco) for contributing to a productive and insightful quarterly outlook session.



## Important Information

Robeco Institutional Asset Management B.V. has a license as manager of Undertakings for Collective Investment in Transferable Securities (UCITS) and Alternative Investment Funds (AIFs) (“Fund(s)”) from the Netherlands Authority for the Financial Markets in Amsterdam. This marketing document is intended solely for professional investors, defined as investors qualifying as professional clients, who have requested to be treated as professional clients or are authorized to receive such information under any applicable laws. Robeco Institutional Asset Management B.V. and/or its related, affiliated and subsidiary companies, (“Robeco”), will not be liable for any damages arising out of the use of this document. Users of this information who provide investment services in the European Union have their own responsibility to assess whether they are allowed to receive the information in accordance with MiFID II regulations. To the extent this information qualifies as a reasonable and appropriate minor non-monetary benefit under MiFID II, users that provide investment services in the European Union are responsible for complying with applicable recordkeeping and disclosure requirements. The content of this document is based upon sources of information believed to be reliable and comes without warranties of any kind. Without further explanation this document cannot be considered complete. Any opinions, estimates or forecasts may be changed at any time without prior warning. If in doubt, please seek independent advice. This document is intended to provide the professional investor with general information about Robeco’s specific capabilities but has not been prepared by Robeco as investment research and does not constitute an investment recommendation or advice to buy or sell certain securities or investment products or to adopt any investment strategy or legal, accounting or tax advice. All rights relating to the information in this document are and will remain the property of Robeco. This material may not be copied or shared with the public. No part of this document may be reproduced or published in any form or by any means without Robeco’s prior written permission. Investment involves risks. Before investing, please note the initial capital is not guaranteed. Investors should ensure they fully understand the risk associated with any Robeco product or service offered in their country of domicile. Investors should also consider their own investment objective and risk tolerance level. Historical returns are provided for illustrative purposes only. The price of units may go down as well as up and past performance is no guarantee of future results. If the currency in which the past performance is displayed differs from the currency of the country in which you reside, then you should be aware that due to exchange rate fluctuations the performance shown may increase or decrease if converted into your local currency. The performance data do not take account of the commissions and costs incurred when trading securities in client portfolios or for the issue and redemption of units. Unless otherwise stated, the prices used for the performance figures of the Luxembourg-based Funds are the end-of-month transaction prices net of fees up to 4 August 2010. From 4 August 2010, the transaction prices net of fees will be those of the first business day of the month. Return figures versus the benchmark show the investment management result before management and/or performance fees; the Fund returns are with dividends reinvested and based on net asset values with prices and exchange rates as at the valuation moment of the benchmark. Please refer to the prospectus of the Funds for further details. Performance is quoted net of investment management fees. The ongoing charges mentioned in this document are the ones stated in the Fund’s latest annual report at closing date of the last calendar year. This document is not directed to or intended for distribution to or for use by any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, document, availability or use would be contrary to law or regulation or which would subject any Fund or Robeco Institutional Asset Management B.V. to any registration or licensing requirement within such jurisdiction. Any decision to subscribe for interests in a Fund offered in a particular jurisdiction must be made solely on the basis of information contained in the prospectus, which information may be different from the information contained in this document. Prospective applicants for shares should inform themselves as to legal requirements which may also apply and any applicable exchange control regulations and taxes in the countries of their respective citizenship, residence or domicile. The Fund information, if any, contained in this document is qualified in its entirety by reference to the prospectus, and this document should, at all times, be read in conjunction with the prospectus. Detailed information on the Fund and associated risks is contained in the prospectus. The prospectus and the Key Investor Information Document for the Robeco Funds can all be obtained free of charge from Robeco’s websites.

### Additional Information for US investors

Robeco is considered “participating affiliated” and some of their employees are “associated persons” of Robeco Institutional Asset Management US Inc. (“RIAM US”) as per relevant SEC no-action guidance. Employees identified as associated persons of RIAM US perform activities directly or indirectly related to the investment advisory services provided by RIAM US. In those situations these individuals are deemed to be acting on behalf of RIAM US, a US SEC registered investment adviser. SEC regulations are applicable only to clients, prospects and investors of RIAM US. RIAM US is a wholly owned subsidiary of ORIX Corporation Europe N.V. and offers investment advisory services to institutional clients in the US.

### Additional Information for investors with residence or seat in Australia and New Zealand

This document is distributed in Australia by Robeco Hong Kong Limited (ARBN 156 512 659) (“RIAM BV”), which is exempt from the requirement to hold an Australian financial services license under the Corporations Act 2001 (Cth) pursuant to ASIC Class Order 03/1103. Robeco is regulated by the Securities and Futures Commission under the laws of Hong Kong and those laws may differ from Australian laws. This document is distributed only to “wholesale clients” as that term is defined under the Corporations Act 2001 (Cth). This document is not intended for distribution or dissemination, directly or indirectly, to any other class of persons. In New Zealand, this document is only available to wholesale investors within the meaning of clause 3(2) of Schedule 1 of the Financial Markets Conduct Act 2013 (FMCA). This document is not intended for public distribution in Australia and New Zealand.

### Additional Information for investors with residence or seat in Austria

This information is solely intended for professional investors or eligible counterparties in the meaning of the Austrian Securities Oversight Act.

### Additional Information for investors with residence or seat in Brazil

The Fund may not be offered or sold to the public in Brazil. Accordingly, the Fund has not been nor will be registered with the Brazilian Securities Commission (CVM), nor has it been submitted to the foregoing agency for approval. Documents relating to the Fund, as well as the information contained therein, may not be supplied to the public in Brazil, as the offering of the Fund is not a public offering of securities in Brazil, nor may they be used in connection with any offer for subscription or sale of securities to the public in Brazil.

### Additional Information for investors with residence or seat in Brunei

The Prospectus relates to a private collective investment scheme which is not subject to any form of domestic regulations by the Autoriti Monetari Brunei Darussalam (“Authority”). The Prospectus is intended for distribution only to specific classes of investors as specified in section 20 of the Securities Market Order, 2013, and must not, therefore, be delivered to, or relied on by, a retail client. The Authority is not responsible for reviewing or verifying any prospectus or other documents in connection with this collective investment scheme. The Authority has not approved the Prospectus or any other associated documents nor taken any steps to verify the information set out in the Prospectus and has no responsibility for it. The units to which the Prospectus relates may be illiquid or subject to restrictions on their resale. Prospective purchasers of the units offered should conduct their own due diligence on the units.

### Additional Information for investors with residence or seat in Canada

No securities commission or similar authority in Canada has reviewed or in any way passed upon this document or the merits of the securities described herein, and any representation to the contrary is an offence. Robeco Institutional Asset Management B.V. relies on the international dealer and international adviser exemption in Quebec and has appointed McCarthy Tétrault LLP as its agent for service in Quebec.

### Additional information for investors with residence or seat in the Republic of Chile

Neither Robeco nor the Funds have been registered with the *Comisión para el Mercado Financiero* pursuant to Law no. 18.045, the *Ley de Mercado de Valores* and regulations thereunder. This document does not constitute an offer of or an invitation to subscribe for or purchase shares of the Funds in the Republic of Chile, other than to the specific person who individually requested this information on their own initiative. This may therefore be treated as a “private offering” within the meaning of article 4 of the *Ley de Mercado de Valores* (an offer that is not addressed to the public at large or to a certain sector or specific group of the public).

### Additional Information for investors with residence or seat in Colombia

This document does not constitute a public offer in the Republic of Colombia. The offer of the Fund is addressed to fewer than one hundred specifically identified investors. The Fund may not be promoted or marketed in Colombia or to Colombian residents, unless such promotion and marketing is made in compliance with Decree 2555 of 2010 and other applicable rules and regulations related to the promotion of foreign Funds in Colombia.

### Additional Information for investors with residence or seat in the Dubai International Financial Centre (DIFC), United Arab Emirates

This material is distributed by Robeco Institutional Asset Management B.V. (DIFC Branch) located at Office 209, Level 2, Gate Village Building 7, Dubai International Financial Centre, Dubai, PO Box 482060, UAE. Robeco Institutional Asset Management B.V. (DIFC Branch) is regulated by the Dubai Financial Services Authority (“DFSA”) and only deals with Professional Clients or Market Counterparties and does not deal with Retail Clients as defined by the DFSA.

### Additional Information for investors with residence or seat in France

Robeco Institutional Asset Management B.V. is at liberty to provide services in France. Robeco France is a subsidiary of Robeco whose business is based on the promotion and distribution of the group’s funds to professional investors in France.

### Additional Information for investors with residence or seat in Germany

This information is solely intended for professional investors or eligible counterparties in the meaning of the German Securities Trading Act.

### Additional Information for investors with residence or seat in Hong Kong

The contents of this document have not been reviewed by the Securities and Futures Commission (“SFC”) in Hong Kong. If there is in any doubt about any of the contents of this document, independent professional advice should be obtained. This document has been distributed by Robeco Hong Kong Limited (“Robeco”). Robeco is regulated by the SFC in Hong Kong.

### Additional Information for investors with residence or seat in Indonesia

The Prospectus does not constitute an offer to sell nor a solicitation to buy securities in Indonesia.

### Additional Information for investors with residence or seat in Italy

This document is considered for use solely by qualified investors and private professional clients (as defined in Article 26 (1) (b) and (d) of Consob Regulation No. 16190 dated 29 October 2007). If made available to Distributors and individuals authorized by Distributors to conduct promotion and marketing activity, it may only be used for the purpose for which it was conceived. The data and information contained in this document may not be used for communications with Supervisory Authorities. This document does not include any information to determine, in concrete terms, the investment inclination and, therefore, this document cannot and should not be the basis for making any investment decisions.

### Additional Information for investors with residence or seat in Japan

This document is considered for use solely by qualified investors and is distributed by Robeco Japan Company Limited, registered in Japan as a Financial Instruments Business Operator, [registered No. the Director of Kanto Local Financial Bureau (Financial Instruments Business Operator), No, 2780, Member of Japan Investment Advisors Association].

### Additional Information for investors with residence or seat in South Korea

The Management Company is not making any representation with respect to the eligibility of any recipients of the Prospectus to acquire the Shares therein under the laws of South Korea, including but not limited to the Foreign Exchange Transaction Act and Regulations thereunder. The Shares have not been registered under the Financial Investment Services and Capital Markets Act of Korea, and none of the Shares may be offered, sold or delivered, or offered or sold to any person for re-offering or resale, directly or indirectly, in South Korea or to any resident of South Korea except pursuant to applicable laws and regulations of South Korea.

### Additional Information for investors with residence or seat in Liechtenstein

This document is exclusively distributed to Liechtenstein-based, duly licensed financial intermediaries (such as banks, discretionary portfolio managers, insurance companies, fund of funds) which do not intend to invest on their own account into Fund(s) displayed in the document. This material is distributed by Robeco Switzerland Ltd, postal address: Josefstrasse 218, 8005 Zurich, Switzerland. LGT Bank Ltd., Herreneggasse 12, FL-9490 Vaduz, Liechtenstein acts as the representative and paying agent in Liechtenstein. The prospectus, the Key Investor Information Documents (KIIDs), the articles of association, the annual and semi-annual reports of the Fund(s) may be obtained from the representative or via the website.

**Additional Information for investors with residence or seat in Malaysia**

Generally, no offer or sale of the Shares is permitted in Malaysia unless where a Recognition Exemption or the Prospectus Exemption applies: NO ACTION HAS BEEN, OR WILL BE, TAKEN TO COMPLY WITH MALAYSIAN LAWS FOR MAKING AVAILABLE, OFFERING FOR SUBSCRIPTION OR PURCHASE, OR ISSUING ANY INVITATION TO SUBSCRIBE FOR OR PURCHASE OR SALE OF THE SHARES IN MALAYSIA OR TO PERSONS IN MALAYSIA AS THE SHARES ARE NOT INTENDED BY THE ISSUER TO BE MADE AVAILABLE, OR MADE THE SUBJECT OF ANY OFFER OR INVITATION TO SUBSCRIBE OR PURCHASE, IN MALAYSIA. NEITHER THIS DOCUMENT NOR ANY DOCUMENT OR OTHER MATERIAL IN CONNECTION WITH THE SHARES SHOULD BE DISTRIBUTED, CAUSED TO BE DISTRIBUTED OR CIRCULATED IN MALAYSIA. NO PERSON SHOULD MAKE AVAILABLE OR MAKE ANY INVITATION OR OFFER OR INVITATION TO SELL OR PURCHASE THE SHARES IN MALAYSIA UNLESS SUCH PERSON TAKES THE NECESSARY ACTION TO COMPLY WITH MALAYSIAN LAWS.

**Additional Information for investors with residence or seat in Mexico**

The funds have not been and will not be registered with the National Registry of Securities, maintained by the Mexican National Banking and Securities Commission and, as a result, may not be offered or sold publicly in Mexico. Robeco and any underwriter or purchaser may offer and sell the funds in Mexico on a private placement basis to Institutional and Accredited Investors, pursuant to Article 8 of the Mexican Securities Market Law.

**Additional Information for investors with residence or seat in Peru**

The Fund has not been registered with the Superintendencia del Mercado de Valores (SMV) and is being placed by means of a private offer. SMV has not reviewed the information provided to the investor. This document is only for the exclusive use of institutional investors in Peru and is not for public distribution.

**Additional Information for investors with residence or seat in Shanghai**

This material is prepared by Robeco Overseas Investment Fund Management (Shanghai) Limited Company ("Robeco Shanghai") and is only provided to the specific objects under the premise of confidentiality. Robeco Shanghai was registered as a private fund manager with the Asset Management Association of China in September 2018. Robeco Shanghai is a wholly foreign-owned enterprise established in accordance with the PRC laws, which enjoys independent civil rights and civil obligations. The statements of the shareholders or affiliates in the material shall not be deemed to a promise or guarantee of the shareholders or affiliates of Robeco Shanghai, or be deemed to any obligations or liabilities imposed to the shareholders or affiliates of Robeco Shanghai.

**Additional Information for investors with residence or seat in Singapore**

This document has not been registered with the Monetary Authority of Singapore ("MAS"). Accordingly, this document may not be circulated or distributed directly or indirectly to persons in Singapore other than (i) to an institutional investor under Section 304 of the SFA, (ii) to a relevant person pursuant to Section 305(1), or any person pursuant to Section 305(2), and in accordance with the conditions specified in Section 305, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. The contents of this document have not been reviewed by the MAS. Any decision to participate in the Fund should be made only after reviewing the sections regarding investment considerations, conflicts of interest, risk factors and the relevant Singapore selling restrictions (as described in the section entitled "Important Information for Singapore Investors") contained in the prospectus. Investors should consult your professional adviser if you are in doubt about the stringent restrictions applicable to the use of this document, regulatory status of the Fund, applicable regulatory protection, associated risks and suitability of the Fund to your objectives. Investors should note that only the Sub-Funds listed in the appendix to the section entitled "Important Information for Singapore Investors" of the prospectus ("Sub-Funds") are available to Singapore investors. The Sub-Funds are notified as restricted foreign schemes under the Securities and Futures Act, Chapter 289 of Singapore ("SFA") and invoke the exemptions from compliance with prospectus registration requirements pursuant to the exemptions under Section 304 and Section 305 of the SFA. The Sub-Funds are not authorized or recognized by the MAS and shares in the Sub-Funds are not allowed to be offered to the retail public in Singapore. The prospectus of the Fund is not a prospectus as defined in the SFA. Accordingly, statutory liability under the SFA in relation to the content of prospectuses does not apply. The Sub-Funds may only be promoted exclusively to persons who are sufficiently experienced and sophisticated to understand the risks involved in investing in such schemes, and who satisfy certain other criteria provided under Section 304, Section 305 or any other applicable provision of the SFA and the subsidiary legislation enacted thereunder. You should consider carefully whether the investment is suitable for you. Robeco Singapore Private Limited holds a capital markets services license for fund management issued by the MAS and is subject to certain clientele restrictions under such license.

**Additional Information for investors with residence or seat in Spain**

Robeco Institutional Asset Management B.V., Sucursal en España with identification number W0032687F and having its registered office in Madrid at Calle Serrano 47-14º, is registered with the Spanish Commercial Registry in Madrid, in volume 19.957, page 190, section 8, sheet M-351927 and with the National Securities Market Commission (CNMV) in the Official Register of branches of European investment services companies, under number 24. The investment funds or SICAV mentioned in this document are regulated by the corresponding authorities of their country of origin and are registered in the Special Registry of the CNMV of Foreign Collective Investment Institutions marketed in Spain.

**Additional Information for investors with residence or seat in South Africa**

Robeco Institutional Asset Management B.V. is registered and regulated by the Financial Sector Conduct Authority in South Africa.

**Additional Information for investors with residence or seat in Switzerland**

The Fund(s) are domiciled in Luxembourg. This document is exclusively distributed in Switzerland to qualified investors as defined in the Swiss Collective Investment Schemes Act (CISA). This material is distributed by Robeco Switzerland Ltd, postal address: Josefstrasse 218, 8005 Zurich. ACOLIN Fund Services AG, postal address: Affolternstrasse 56, 8050 Zürich, acts as the Swiss representative of the Fund(s). UBS Switzerland AG, Bahnhofstrasse 45, 8001 Zurich, postal address: Europastrasse 2, P.O. Box, CH-8152 Opfikon, acts as the Swiss paying agent. The prospectus, the Key Investor Information Documents (KIIDs), the articles of association, the annual and semi-annual reports of the Fund(s), as well as the list of the purchases and sales which the Fund(s) has undertaken during the financial year, may be obtained, on simple request and free of charge, at the office of the Swiss representative ACOLIN Fund Services AG. The prospectuses are also available via the website.

**Additional Information relating to RobecoSAM-branded funds/services**

Robeco Switzerland Ltd, postal address Josefstrasse 218, 8005 Zurich, Switzerland has a license as asset manager of collective assets from the Swiss Financial Market Supervisory Authority FINMA. RobecoSAM-branded financial instruments and investment strategies referring to such financial instruments are generally managed by Robeco Switzerland Ltd. The RobecoSAM brand is a registered trademark of Robeco Holding B.V. The brand RobecoSAM is used to market services and products which entail Robeco's expertise on Sustainable Investing (SI). The brand RobecoSAM is not to be considered as a separate legal entity.

**Additional Information for investors with residence or seat in Thailand**

The Prospectus has not been approved by the Securities and Exchange Commission which takes no responsibility for its contents. No offer to the public to purchase the Shares will be made in Thailand and the Prospectus is intended to be read by the addressee only and must not be passed to, issued to, or shown to the public generally.

**Additional Information for investors with residence or seat in the United Arab Emirates**

Some Funds referred to in this marketing material have been registered with the UAE Securities and Commodities Authority (the Authority). Details of all Registered Funds can be found on the Authority's website. The Authority assumes no liability for the accuracy of the information set out in this material/document, nor for the failure of any persons engaged in the investment Fund in performing their duties and responsibilities.

**Additional Information for investors with residence or seat in the United Kingdom**

Robeco is subject to limited regulation in the UK by the Financial Conduct Authority. Details about the extent of our regulation by the Financial Conduct Authority are available from us on request.

**Additional Information for investors with residence or seat in Uruguay**

The sale of the Fund qualifies as a private placement pursuant to section 2 of Uruguayan law 18,627. The Fund must not be offered or sold to the public in Uruguay, except under circumstances which do not constitute a public offering or distribution under Uruguayan laws and regulations. The Fund is not and will not be registered with the Financial Services Superintendency of the Central Bank of Uruguay. The Fund corresponds to investment funds that are not investment funds regulated by Uruguayan law 16,774 dated September 27, 1996, as amended.