

Central bank watcher Shifting gears

Sustainable Investing Expertise by
ROBECOSAM

- Fed: in a different phase
- ECB: now comes the hard part
- PBoC: targeted and forceful
- BoJ: no surprise

While 2022 was a remarkable year for monetary policy setting, 2023 will likely have more interesting moves in store. A key central bank that has recently shifted gears is the BoJ. And if Japanese wage growth follows the pattern seen elsewhere in the world, 2023 might well move the BoJ to further tightening steps that could have ramifications for bond markets worldwide. Meanwhile, the Fed and the ECB – which is intent on joining the QT camp soon – have recently slowed down the pace of their tightening cycles, and look on track to reach policy rate peaks in early spring (the Fed) or late spring (the ECB). Looking beyond the next few quarters, we do think that these central banks might struggle to keep monetary policy significantly restrictive for long amid weak(ening) growth and easing inflation pressures.

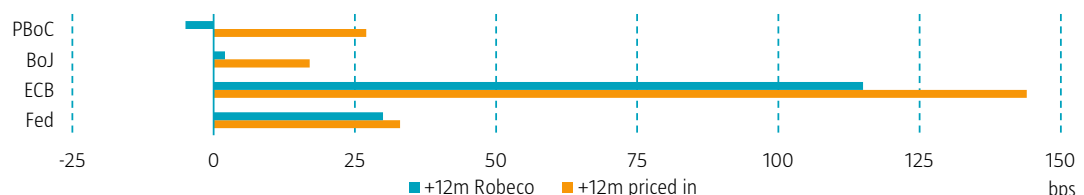
Another likely development worth noting is the continued disconnect between the PBoC and all other major central banks in the coming months. While others are starting, continuing, or slowing their tightening cycles, the PBoC retains an easing bias. These differences in timing and pace should set the stage for interesting cross-market and curve positioning opportunities in the year ahead.

Article

For professional investors
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Outlook for central bank policy rates



Source: Bloomberg, Robeco, change 12m ahead, based on money market futures and forwards; 6 January 2023

The Federal Reserve: in a different phase

- Fed slowing down hiking pace with terminal rate now in sight
- Pricing of Fed hikes leaves room for some upward adjustment in the shorter term
- Looking at scaling into overweight positions in the US, starting with cross-market trades

Terminal rate in sight, but not there yet

Official rates need to be hiked further, but the level of the rates peak and the time spent at this peak are now more important than the size of future steps. That was the clear message from the FOMC at their December meeting. In their Summary of Economic Projections (SEP), members penciled in a rate of 5.1% for 2023. That is circa 75 bps above the current level. We always recommend looking critically at the SEP, but in our opinion the current 'dots' for 2023 look fair. We have a base case in which the Fed hikes by another 50 bps on 1 February, followed by a 25 bps move on 22 March. Risks to this scenario are tilted somewhat to the upside, as the Fed will want to make sure it tightens conditions enough to cool down demand and create some breathing space in the labor market.

The market currently prices in a rates peak of 5% in the May or June meeting and a high chance of a shift towards 25 bps steps as soon as 1 February. While such a move is possible, its dovish message would probably support risk assets and thus result in an easing of broader financial conditions. That would conflict with the objective of the hike and could actually lift the level of the terminal rate needed to cool the economy sufficiently. We therefore think a 50 bps rate increase (to 4.75-5.0%) will be the preferred step for February, followed by 25 bps in March. Our main short-term risk scenario adds an additional 25 bps hike in May.

What is priced in for the Fed, versus our expectation					
Effective Fed funds rate	4.33	Mar/23	Jun/23	Sep/23	Dec/23
Change implied by FF Futures (bps)		58	72	61	33
Our probably-weighted expectation (bps)		80	85	70	30
Our central scenario (bps)		75	75	75	50

Source: Bloomberg, Robeco; 5 January 2023

An important change in market conditions

Comparing our probability-weighted expectations with what is priced in by the market, suggests there is probably 25 bps upside potential in the pricing of upcoming meetings. This could still have an impact on rates, albeit predominantly at the short end. More importantly, though, is the change in broader US rates market conditions compared to a few months ago. Rates have been more stable recently, as it has become clearer where this tightening cycle could end. Two-year US Treasury yields have been trading in a 50 bps range since early October. This compares with the September 2021-October 2022 period in which these yields trended higher on a monthly basis, with the exception of only two months within that period.

USTs	Spot yield	12m Fw	Carry*	Hedged to EUR
2y	4.48	3.83	213	101
5y	3.95	3.62	75	28
10y	3.77	3.63	44	19
30y	3.86	3.74	19	7

* for a 1pd position over 12 months

Source: Bloomberg, Robeco; 5 January 2023

Shorter term, risks to our base case are toward higher rates. These risks originate mainly from an ongoing strong US labor market and resulting wage pressures. Of the four main inflation drivers, two have turned the corner (goods supply disruptions and energy prices), one looks set to turn from Q2 onwards (rental inflation) and the fourth has remained sticky at a high level (wages and related services). This stickiness of wage inflation is still a source of discomfort for the Fed. Another risk, as was highlighted in the minutes of the December FOMC meeting, is an overly positive financial markets response to Fed policy. As mentioned above, such a response would render their tightening less impactful and could thus result in a longer cycle.

Over the longer term, we see risks for rates tilting in the opposite direction. None of the FOMC members currently expects to cut rates in 2023, but experience has taught us that this could change rapidly. We expect that in the course

of this year the business cycle will turn, labor markets will show more convincing signs of cooling and inflation will come down towards the Fed's 2% target level. If we are correct, this could signal an important change in the monetary policy outlook. Quantitative tightening (QT) will likely be stopped and the market will shift its focus to the timing of the first cut.

Scaling in overweight positions and continue building steepeners

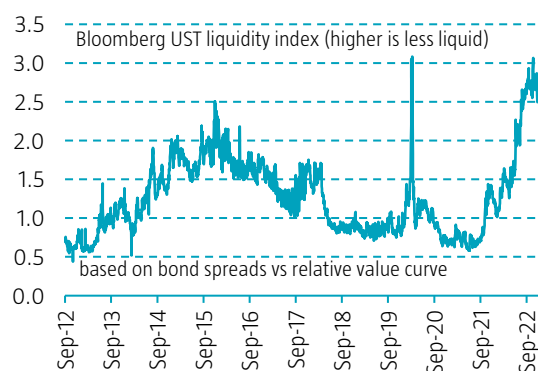
We have identified three metrics for evaluating the timing of long duration positions. For US rates, the first (2-10 inversion) has ticked the box. The second (2-year below the fed funds rate) briefly ticked its box at the end of last year, but will probably give a more convincing signal after the 1 February meeting. The perspective on the third metric (second-to-last rate hike) ticking its box has become clearer as well. This suggests that the time is coming to look more concretely at initiating long duration positions in the US. Indeed, we would use upticks in rates to start scaling into such positions for US rates outright, or in cross-market trades – for example versus Germany or Australia.

Long-end yields tend to be closely connected to what is priced for the fed funds rate 18-24 months out. Current market pricing points to a fair value level for the 10-year yield of close to 3.6% and a range of 3.1-4.0%. An upward repricing of front-end yields by 25 bps would lift the fair value range for the 10-year yield by approximately 15 bps.

On the curve we advocate building 2-10 steepener positions. The 2-10 curve is significantly inverted, while this yield spread has been cyclical and mean reverting over the past decades. We see no reason why curve dynamics would be different this time, though Fed pricing suggests there is potential to invert further in the shorter term. This is a positive carry position, also for euro-based investors.

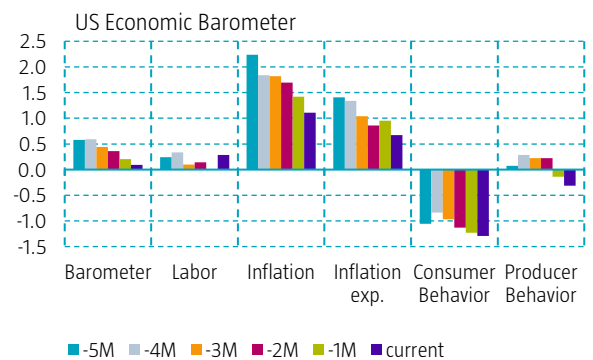
Some improvement is visible in liquidity conditions for US Treasuries, though these are still far from normal. Consumer and producer activity data have continued to decline. Inflation data have been moving away from extreme levels and long-term inflation forwards have stabilized around 2.5%.

Chart 1. Some improvement in US Treasuries liquidity conditions



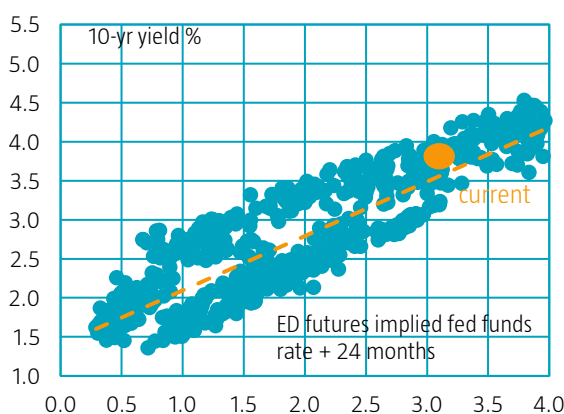
Source: Robeco, Bloomberg; 5 January 2023

Chart 2 Barometer continues to slow



Source: Robeco, Bloomberg; 5 January 2023

Chart 3. 10yr US yield and fed funds 9Q out proxy (2002-2019)



Source: Robeco, Bloomberg; 5 January 2023

Chart 4. Forward inflation has stabilized around 2.5%



Source: Robeco, Bloomberg; 5 January 2023

European Central Bank: now comes the hard part

- ECB set to take policy rates into restrictive territory
- Overnight rate forward curve seems too high to us – but core CPI trend makes it hard to fade this
- Curve flattening to give way to back end-led steepening in the course of 2023

Beginning of second half or final quarter?

Like the Fed, the ECB decided to slow down the pace of policy rate tightening at their December meeting, by hiking the deposit facility rate by 50 bps (instead of 75 bps) to 2.0%. This marks the upper end of the ECB's range of estimates of the nominal long-term 'neutral' rate, where interest rate policy is neither restrictive nor accommodative. Still, the central bank delivered a hawkish surprise to financial markets. After the previous meeting in October, President Lagarde had stressed that "substantial progress has been made in withdrawing monetary policy accommodation" and had hinted that the ECB would merely lay out the principles of quantitative tightening (QT) in December. Instead, Lagarde announced the actual start of QT: from the beginning of March 2023 onwards, the APP portfolio will decline by EUR 15bn per month on average (i.e. by around 45% of APP redemptions) until the end of Q2.¹

What is more, Lagarde stated that "based on a substantial upward revision to the inflation outlook" – the Staff sees Eurozone core inflation remaining above 2% until 2025 – a very broad majority of the Governing Council now expects to raise policy rates "significantly further". And this would likely entail more 50-basis-point hikes. Klaas Knot – the Dutch governor who apparently backed the recent slowdown in the tightening pace – reinforced the ECB's hawkish message later last month by suggesting that the ECB was "just at the beginning of the second half" of its tightening cycle.

The hawkish shift since October seems driven by ongoing signs of rising wage pressures, the lack of a retreat in elevated core inflation (i.e. currently more than 5% on average in the Eurozone), and dislodged consumer inflation expectations. Indeed, we note that median consumer expectations for inflation in three years' time have stayed 1 percentage point above the ECB's 2% medium-term target in recent months. We also suspect that easing concerns about the economy – only a "short-lived and shallow recession" is projected – plays a role here.

Looking ahead, our central scenario now sees the ECB hiking the depo rate by at least another 100 bps over the next three meetings. We are concerned though that a worse-than-expected economic and market backdrop will prevent the ECB from going much above 3% (markets already price in a depo rate peak of c 3.5% – see table below). Further out, we second-guess the market's assumption that the depo rate will stay (well) above 2.5% in coming years (see Chart 1 on the next page), as we doubt that all Eurozone economies can structurally handle the tighter financing conditions associated with this policy rate backdrop.

As for the ECB's balance sheet policies, an extension of QT beyond Q2 2023 likely beckons, and will probably be decided upon in March or May. Also note that another large TLTRO redemption (of more than EUR 600bn) will come due by June. Nonetheless, the sheer scale of the ECB's balance sheet (see Chart 2) will keep excess liquidity in the financial system elevated well into 2024, i.e. after the the Governing Council will have reviewed its operational framework for steering short-term interest rates.

What is priced in for the ECB versus our expectations

ECB deposit facility rate	2.00	Mar-23	Jun-23	Sep-23	Dec-23
Change implied by OIS (bps)		93	143	151	144
Our probability-weighted expectation (bps)		95	120	120	115
Our central scenario (bps)		100	125	125	125

Source: Bloomberg, Robeco; 6 January 2023

DBR curve	Spot yield	12m Fwd	Carry* (bp)
2y	2.67	2.25	38
5y	2.37	2.16	7
10y	2.32	2.27	9
30y	2.24	2.21	2

* for a 1pd position in cash bonds over 12 months

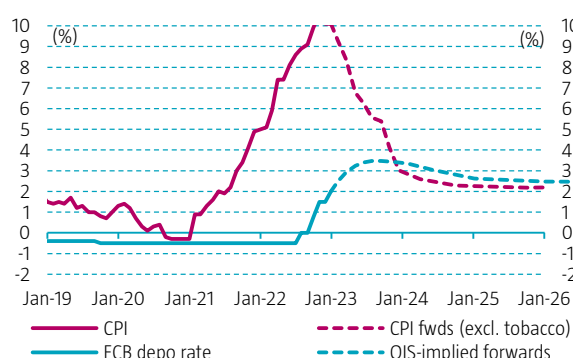
Source: Bloomberg, Robeco; 6 January 2023

¹ Detailed parameters, i.e. on the mix of QT for the various APP programs including the CSPP, will be announced at the next meeting in February. As concerns the PEPP, the ECB intends to reinvest the principal payments from maturing PEPP holdings "until at least the end of 2024".

A too slow descent from the peak

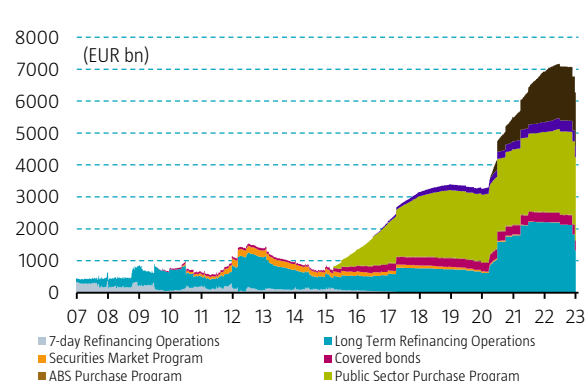
- After dipping back below 2% in early December, German 10-year Bund yields resumed their upward trend into the New Year, to reach a new cycle-high of slightly above 2.5%. The yield rise was driven mainly by yet another upgrade of policy rate expectations in the wake of the hawkish ECB rhetoric, but also reflected further term premium decompression as evident from the underperformance of Bunds versus swaps.
- Markets are now pricing in an ECB depo rate peak in the current cycle of c. 3.5% (Chart 1). As suggested before, while we acknowledge the possibility the ECB might need to hike rates to above 3% to tame inflation pressures, we doubt the ECB will be able to keep rates at such levels. Indeed, at around 2.75%, the EUR 5-year OIS rate 5-year forward – assuming term premium and OIS-policy rate wedge adjustments cancel each other out – still clearly exceeds the range of ECB estimates of the long-term ‘neutral’ depo rate. We are not convinced that a looser fiscal policy regime rationalizes such an uplift in the long-term neutral rate.
- While valuations thus hint at being constructive on long-end EUR duration, we refrain from advising a meaningful outright overweight position just yet – certainly in cash Bunds (as opposed to swaps). This is because we think that, given the elevated near-term core inflation profile, markets will be slow to price in lower implied policy rates in the 5 to 10-year part of the curve, despite the subdued growth outlook. Specifically, we would recommend building OW positions when 10-year Bund yields are in the 2.50-2.75% area.
- Curve-wise, our favorite (bullish) strategic position is a 10s30s steepener, especially in swaps, where inversion is even more extreme by historical standards. As for swap spreads over Germany, a further supply and QT-driven easing in collateral scarcity and a drying-up of swap-paying flows should foster a further tightening, to the 50 bps area in 10-year space. Notably, we find 30-year swap spread valuations already back in the lower half of their historical range. Any further tightening there could entice us to start contemplating setting wideners.

Chart 1. Market's ECB policy rate and inflation forwards



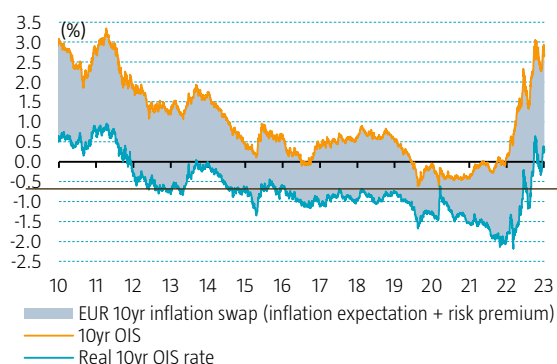
Source: ECB, Robeco; 6 January 2023

Chart 2. ECB balance sheet – loans and QE holdings



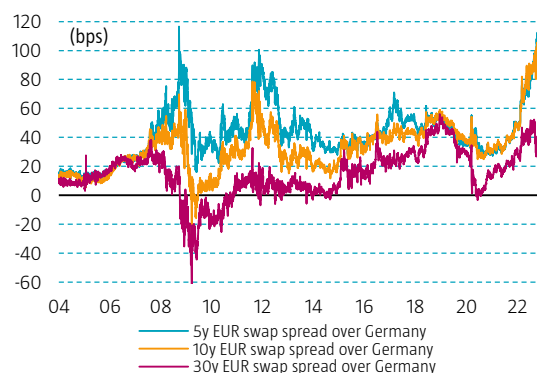
Source: ECB, Robeco; 6 January 2023

Chart 3. Nominal and real 10yr OIS rates



Source: ECB, Robeco; 6 January 2023

Chart 4. 5y, 10y and 30y swap (Euribor) spreads over Germany



Source: ECB, Robeco; 6 January 2023

People's Bank of China: targeted and forceful

- Disruption from Covid wave keeps PBoC in targeted easing stance for now
- Full economic reopening by spring, if it does transpire, might see money market and policy rates converge
- Awaiting further yield rise before turning constructive on CGBs again

Short-term pain for long-term gain?

In our previous update from October we warned about the risk of a tactical rise in Chinese bond yields, given the return of the leading credit impulse indicator into positive territory and a possible easing of Covid policy restrictions. We had not foreseen, though, that the exit from the zero-Covid strategy would be this abrupt. The ensuing surge in Covid infections and consequent economic disruptions are currently weighing heavily on growth momentum. Hence, yields have retraced around a third of the back-up since early November. Moreover, the PBoC has hinted that, with underlying inflation low, it will keep policy loose in coming months – by taking a targeted and “forceful” stance.

The accommodative monetary and fiscal policy stance, coupled with the ongoing efforts to ease the economic drag from the property downturn – the latest step being a lowering of the mortgage rate floor for first-home buyers in cities with falling house prices – should help engineer a cyclical growth upswing in a few months’ time. Assuming of course that the current Covid wave will not prove too disruptive and persistent – and indeed be followed by full economic reopening. The latter is likely to benefit the hard-hit Chinese services sector in particular; it seems less of a game changer to external demand in the rest of the world.

If this scenario does play out, we would expect the PBoC to allow secured money market rates (Chart 1) to gradually converge back to policy rates, which could still be lowered somewhat in Q1 (see Table below). Any further yield back-up to above 3% in 10-year CGBs – in the wake or anticipation of this – would likely see us become more constructive again on overweight CGB positions, for a number of reasons.

Firstly, China’s credit impulse is likely to remain well below levels seen after the slump in 2012 and 2015, and could well roll over in the coming months. Secondly, notwithstanding any re-opening-led rebound, underlying growth in China is likely to remain weaker than we have been used to, which should help prevent markets from pricing in a pronounced hiking cycle by the PBoC. Thirdly, we remain of the view that the amount of leverage in the economy in general and within the local government sector in particular will require lower equilibrium policy rates over the coming years.

What is priced in for the PBoC versus our expectations					
PBoC 7-day reverse repo	2.00	Mar-23	Jun-23	Sep-23	Dec-23
Change implied by forwards (bps)		0	2	15	27
Our probability-weighted expectation (bps)		-5	-2	-1	-5
Our central scenario (bps)		0	0	0	0

Source: Bloomberg, Robeco; 6 January 2023

CGB curve	Spot	12m Fw
2yr	2.30	2.59
5yr	2.62	2.84
10yr	2.84	2.95

Source: Bloomberg, Robeco; 6 January 2023

Economic barometer: darkest before dawn?

- Our economic barometer for China has slipped further into negative territory in recent months, in the wake of disruptions due to the Covid wave. This is mainly owing to a sharp deterioration in both the producer and consumer-behavior component – which should reverse once the Covid wave has passed.
- The weakening in the Z score for the producer-behavior component has been mainly driven by a slowdown in industrial production growth, the plunge in the PMI new orders index in December, as well as slowing rail freight traffic and electricity consumption growth.
- The consumer component weakened on a drop in the PMI employment index, a very weak retail sales print, and a reversal in car sales growth. However, a very subdued marginal-propensity-to-consume metric (based on household demand deposits relative to savings deposits) also continues to exert a significant drag on the ‘consumer behavior’ Z score.
- One relative bright spot remains the Z score for ‘lending conditions’, which comprises, among others, the credit ‘impulse’ metric – which factors in the flow of credit relative to GDP and has held into positive territory (for now). The net pick-up in M2 growth in the past six months has helped here as well. Meanwhile, the overall Z score for ‘inflation’ has held into negative territory, mainly thanks to the subdued PPI and non-food CPI inflation.

Chart 1. Selected policy and money market rates

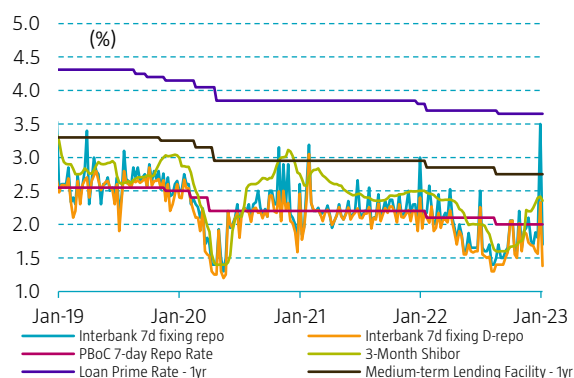


Chart 2. Barometer – renewed slippage

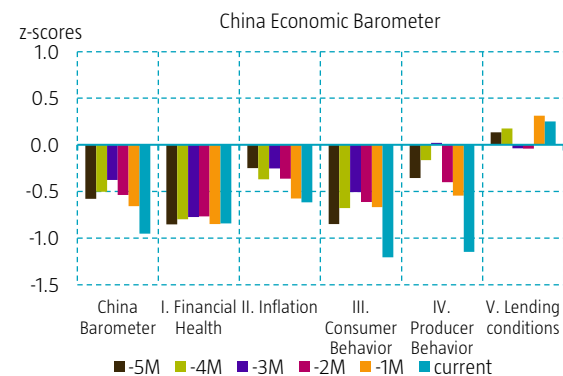


Chart 3. Credit impulse cycles tend to lead government bond yields

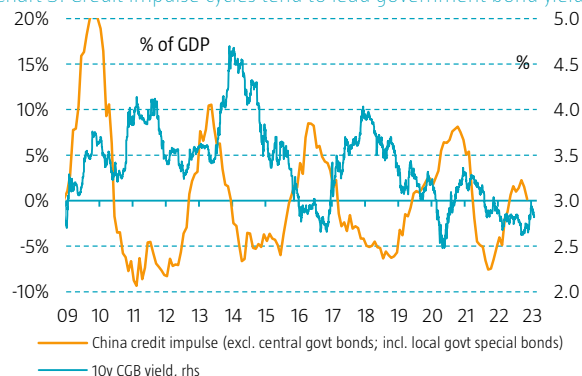
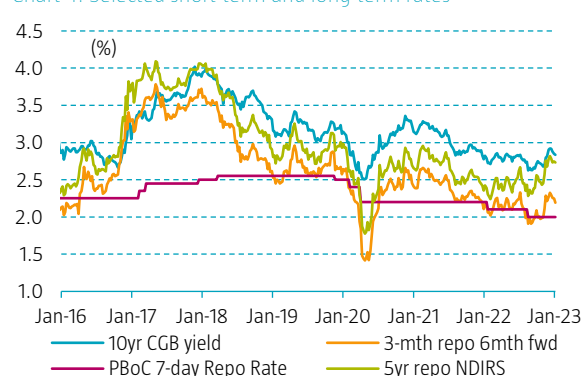


Chart 4. Selected short-term and long-term rates



Bank of Japan: No surprise

- Timing is everything
- All eyes on wages and growth
- Value remains at the long end of the curve

Timing is everything

At the recent monetary policy meeting of 20 December, the BoJ surprised the market by expanding the bandwidth of its yield curve control (YCC) policy from 25 bps to 50 bps. It also announced it will conduct daily QE purchases to defend the new YCC cap of 50 bps. The BOJ strengthened its YCC by diversifying the yield maturities for the QE purchases, and by further increasing its monthly JGB purchase amounts to JPY 9 trillion, from JPY 7.3 trillion previously. At face value this seems an odd way of adjusting monetary policy with the aim of tightening monetary conditions following the weak yen and relatively high inflation numbers.

From our perspective, the big surprise was the timing rather than the change itself, as we had pointed out in previous CBWs that the BoJ will have to change its YCC policy. As we noted, aside from addressing the bond market functioning issue, by widening the 10-year yield band the BoJ has responded to government concerns that its lack of flexibility in managing YCC has amplified yen depreciation. Indeed, the government has since November repeatedly commented that the BoJ should manage monetary easing more flexibly – as it tries to achieve its 2% inflation target, accompanied by sufficient wage growth – to avoid possible overreactions by the markets.

Regarding the surprising timing of the change in YCC policy, we are of the view that the BoJ acted in response to the stabilization of US yields, which eased weakening pressure on the yen created through yield differentials. The market was caught off guard, given that Governor Kuroda and other BoJ officials had strongly denied the possibility of such a policy change. Indeed, the difficulty the Bank has in communicating with the market ahead of any changes in the long-term yield fixed by YCC was reaffirmed by the December move as well as the minutes of the monetary policy meeting. In any case, we think that the BoJ's December decision significantly reduces visibility on the monetary policy outlook.

All eyes on wages and growth

Many important government officials openly welcomed the BoJ's action as a response to their concerns on yen weakness. However, we don't subscribe to the view that the government sees this as signaling the imminent start of a more fundamental shift in easing stance. We think there are two key reasons for this. Firstly, the government has strong concerns about a global economic slowdown during 2023 and its implications for the Japanese economy, as it believes the Japanese economy is still in a recovery phase from the pandemic. Indeed, Japan was relatively late among developed markets in opening up its economy after the pandemic. An increasing number of small companies (SMEs), which the government has often referred to in connection with the need for easing, have excessive debt. This is in the form of government-guaranteed interest-free loans with no collateral, issued to help them through the pandemic. We expect the BoJ to be sensitive to this argument.

Secondly, both the government and the BoJ seek to achieve the 2% inflation target in a way that is accompanied by adequate wage growth. This is where the 2023 Shunto (wage negotiations) season comes in. We are penciling in a wage hike of 3%, at minimum. We are already seeing demands of 5% or more from major labor representation bodies, which the government is starting support. If a wage increase of 3% does materialize, it would constitute the highest since the 90s – and would give the BoJ more comfort in taking additional steps in altering its YCC policy. The outcome of the Shunto season will be known by March and we would therefore expect the BoJ to announce its next steps towards the March meeting, which goes against the consensus expecting another step as soon as January.

What is priced in for the BoJ, versus our expectation

Policy balance rate	-0.10	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24
Change implied by futures (bps)		8	14	15	17	18
Our probability-weighted expectation (bps)		0	0	1	2	4
Our central scenario (bps)		0	0	0	0	0

Source: Bloomberg, Robeco; 5 January 2023

Value remains at the long end of the curve

Long-end yields have risen a great deal in recent months, with 30-year JGBs now offering 1.65% yield. With 10-year JGBs now close to 50 bps, the 10s30s curve remains at its steepest level ever. Over the near term this curve might steepen a bit more as 30-year JGBs tend to co-move with global rates, but there should be more domestic support from the lifers and pension funds as currency-hedged foreign bonds look very unappealing compared to 30-year JGBs. Indeed, the current account data continue to show that Japanese domestic investors are selling their foreign bond exposure.

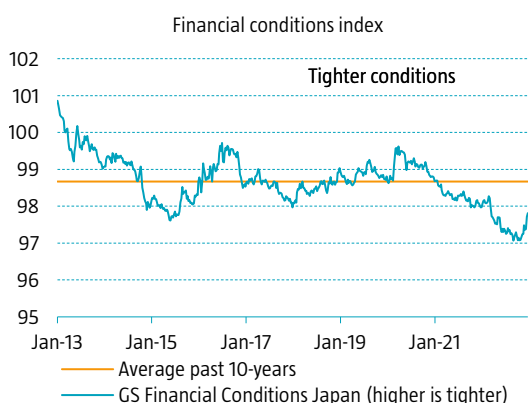
We therefore remain of the view that any further upward momentum in yields in the near term would provide an opportunity for medium-term investors to build or accumulate long positions in the long end of the curve; valuations, fundamentals and technicals are aligned. In particular, we think outright long positions in 20-year and 30-year JGBs are very attractive. Even though we like the 10s30s flattener we are cautious on the 10-year leg of the trade as it now trades very close to the YCC target. Still we like to be outright short 10-year JGBs as we cannot rule out another surprise move by the BoJ or the BoJ losing some control in defending the YCC bandwidth of 50 bps.

JGB Curve	Spot yield	12m Fw	Carry*	Hedged to EUR
2yr	0.02	0.07	3.1	4.6
5yr	0.20	0.40	13.3	13.9
10yr	0.42	0.68	4.8	5.1
30yr	1.61	1.65	9.5	9.7

* for a 1pd position over 12 months

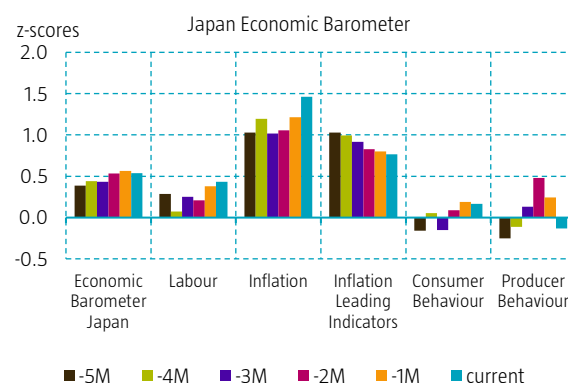
Source: Bloomberg, Robeco; 5 January 2023

Chart 1. Sharp tightening of financial conditions



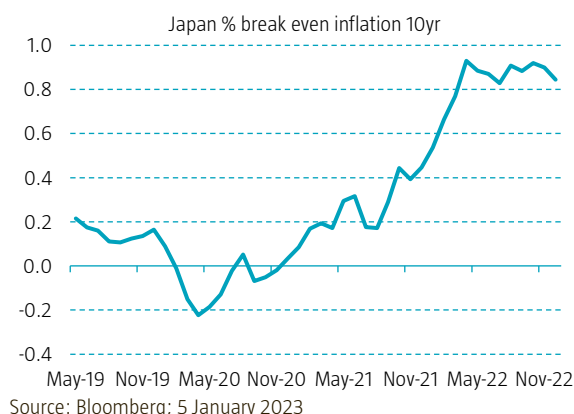
Source: Goldman Sachs, Bloomberg; 5 January 2023

Chart 2. Strong inflation momentum



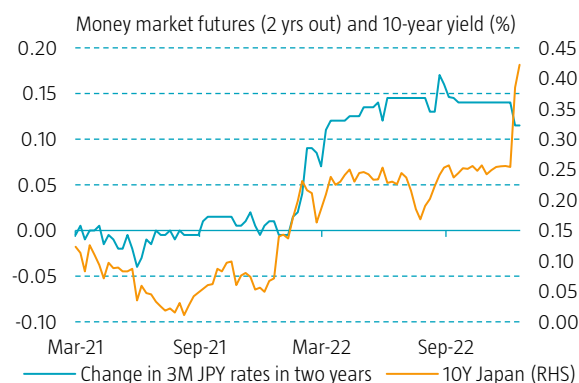
Source: Robeco, Bloomberg; 5 January 2023

Chart 3. Strong improvement in breakevens



Source: Bloomberg; 5 January 2023

Chart 4. Markets price small amount of tightening 2 years out



Source: Bloomberg; 5 January 2023

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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.

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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.

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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.

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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.

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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 47-14^º, 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.

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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

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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.

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Robeco is temporarily deemed authorized and regulated by the Financial Conduct Authority. Details of the Temporary Permissions Regime, which allows EEA-based firms to operate in the UK for a limited period while seeking full authorization, are available on the Financial Conduct Authority's website.

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.