**Note**: The following is a redacted version of the original report published February 23, 2022 [26 pgs].

Goldman Sachs | Global Macro Research

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# TOP *of* MIND

# (JAPANESE) BONDS, BONDS, BONDS


Bond markets have been on a wild ride. After a rally heading into the year, yields have recently risen sharply on better growth and sticky inflation data. The bond story has also been joined by a character not seen in years: Japan. What's ahead for global bond markets, and especially JGBs given this year's BoJ leadership transition? BlackRock's Rick Rieder sees little further upside to US rates this year, but he expects them to remain high before potentially declining sharply in 2024, and believes further BoJ actions are more likely to cause a ripple than a crisis. GS GIR's Praveen Korapaty sees US yields heading higher, and possibly staying high, through 2024, and is more worried about global bond market spillovers *if* the BoJ hikes. So, what can we expect from the BoJ? Columbia's Takatoshi Ito and our own Naohiko Baba agree that incoming BoJ Governor Ueda will take a pragmatic and data-driven approach to policymaking, guided by inflation. GS GIR strategists then explore other asset/portfolio implications, still favoring cash, though Rieder believes 2023 will be a great year to be an investor/lender.

"I think of the Fed funds rate path as a mountain… At this point, I think we're getting close to the top.

- Rick Rieder

I would say maybe [the December shift] wasn't the first step [towards policy normalization], but perhaps preparation for the first step; I would think of it as the BoJ putting on its shoes.

- Takatoshi Ito

Macro conditions are unlikely to warrant a major shift in policy yet… however, technical adjustments will be required to strengthen [YCC] sustainability.

- Naohiko Baba

Potentially much bigger spillovers would come if the BoJ started to entertain rate hikes, which could have significant implications for bond flows.

- Praveen Korapaty"

## WHAT'S INSIDE



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# Macro news and views

## We provide a brief snapshot on the most important economies for the global markets

### US

**Latest GS proprietary datapoints/major changes in views**

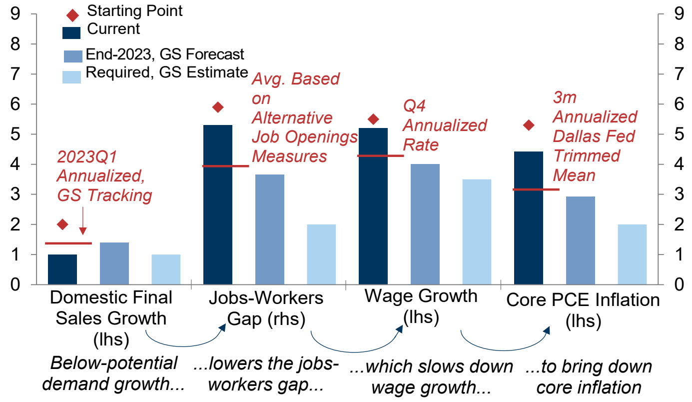
- We recently added a 25bp Fed hike in June alongside 25bp hikes in March and May for a peak funds rate of 5.25-5.5% on the back of improving growth and firmer inflation data.
- We recently lowered our probability of a recession over 12m to 25% (from 35%) given encouraging progress in the rebalancing process needed to tame inflation.
- We lowered our 2023-25 unemployment forecasts on recent hiring momentum and broad labor market strength.

**Datapoints/trends we're focused on**

- US debt limit, which we estimate will need to be raised by early-to-mid-Aug.

**All four steps of the rebalancing process needed to tame inflation are now underway**

% change, year ago (lhs), millions (rhs)




Source: Goldman Sachs GIR.

### Japan

**Latest GS proprietary datapoints/major changes in views**

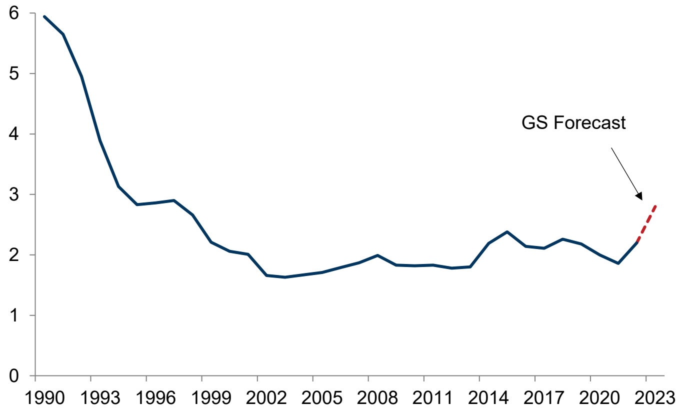
- No major changes in views.

**Datapoints/trends we're focused on**

- BoJ policy; we expect the BoJ to adjust yield curve control (YCC) in 2Q23 by targeting 5y yields rather than 10y yields.
- BoJ leadership transition; we expect incoming Governor Ueda to initially focus on a gradual retreat from YCC.
- *Shunto* wage negotiations, which we expect to result in a 2.8% wage hike, contributing to overall macro wage growth of 2.1% in FY2023.
- Japan trade deficit, which widened to a record -¥3.5tn in Jan.

**We expect a 2023 *shunto* wage increase of 2.8%**

Shunto wage increase, %, yoy




Source: Haver Analytics, Goldman Sachs GIR.

### Europe

**Latest GS proprietary datapoints/major changes in views**

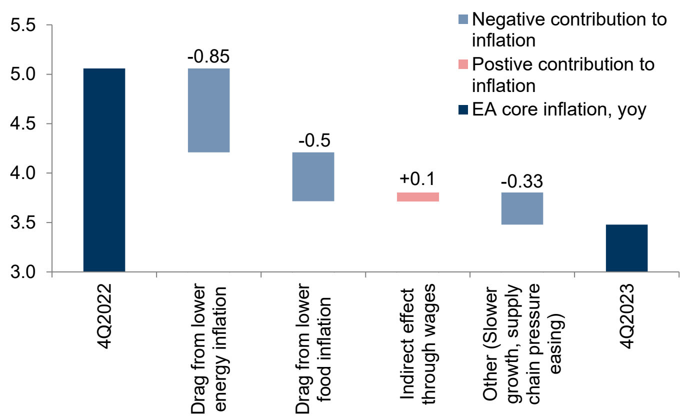
- We recently added a 25bp ECB hike in June alongside a 50bp hike in March and a 25bp hike in May for a terminal rate of 3.5% on the back of strong growth, labor market resilience, and recent hawkish ECB communication.
- We no longer expect a BoE hike in May given recent dovish communication and signs of labor market rebalancing.
- We recently lowered our 2023 UK growth forecast to -0.6%y/y (from -0.5%y/y), leaving the UK as the only major economy we expect to face a recession this year.

**Datapoints/trends we're focused on**

- EA core inflation, which we expect to fall to 3.3%y/y by YE.

**Lower energy prices drag on EA core inflation in 2023**

Decomposition of change in core inflation from 4Q22 to 4Q23, %




Source: Goldman Sachs GIR.

### Emerging Markets (EM)

**Latest GS proprietary datapoints/major changes in views**

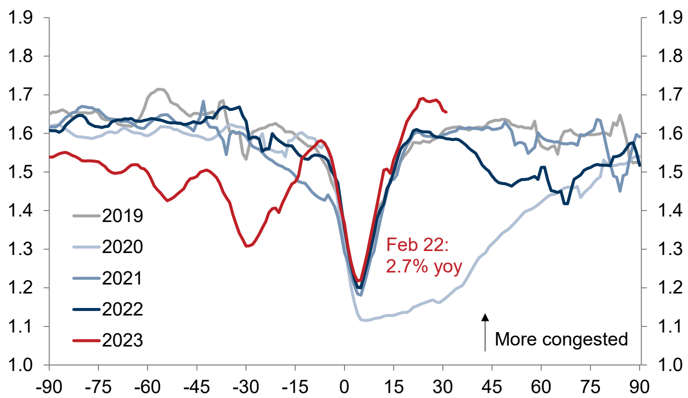
- No major changes in views.

**Datapoints/trends we're focused on**

- China growth, which we continue to expect to accelerate to 5.5% in 2023 driven by its post-reopening recovery—with household consumption forecasted to rise 8.5% yoy—and aided by policymakers' recent refocus on growth.
- China property, which has shown some improvement recently with sales rising and prices stabilizing somewhat.
- CEEMEA growth; we think headwinds to growth from tighter financial conditions, higher energy prices and weaker global activity may now be past their peak.

**Mobility in China is now above pre-Covid levels**

Traffic congestion index in major cities in China, ratio, 7dma




Note: x-axis is percentage change relative to 2019.
Source: Goldman Sachs GIR.

# (Japanese) bonds, bonds, bonds

Bond markets have had a wild few months. After rallying heading into the year, bond yields have risen sharply over the last several weeks on the back of improving global growth and sticky inflation that has raised the prospect of extended central bank hiking cycles. The bond story has also been joined by a character not seen in many years: Japan, following the BoJ's surprise widening of its yield curve control (YCC) band in December, which sent 10y JGB yields to levels last seen before the adoption of negative interest rates in 2016. What lies ahead for global bond markets—and especially JGBs given the impending shift in BoJ leadership—and the implications for other assets and investors' portfolios is Top of Mind.

We first turn to Rick Rieder, CIO of Global Fixed Income at BlackRock, for a wide-ranging conversation about the recent volatility in bonds and where they—and other assets—go from here. He views the US rates path as a mountain and believes we're nearing the peak. Although he recognizes the risk that the Fed may need to tighten much more, he argues that it's cognizant of how much it's already done that's still percolating through the system, and the economic costs of going much further. But while Rieder doesn't see much more upside to rates this year, he expects them to remain high. 2024 is a different story, though; he sees growth slowing as the economy returns to following the demographic curve that it veered from during the pandemic. Alongside that, he expects rates to decline, with 2.5% 10y UST yields a "real possibility".

Since Japan could be a major source of bond market volatility this year as BoJ leadership transitions to Kazuo Ueda—a relatively unknown quantity to the market—amid ongoing speculative attacks against YCC, we then speak with two Japan watchers about what may lie ahead for BoJ policy: Takatoshi Ito, former Deputy Minister for International Affairs in the Japanese Ministry of Finance, and Naohiko Baba, GS Chief Japan Economist. Ito is hesitant to characterize the December YCC adjustment as the first step towards policy normalization but believes the BoJ may have been "putting on its shoes" in preparation for it. Having known Ueda for many years, Ito does not paint him as a policy dove or hawk and is confident that Ueda will make decisions based on a thorough assessment of the data, and more specifically the path of inflation. He stresses that a shift towards wage-led "demand-pull" inflation that sustainably achieves the BoJ's elusive 2% inflation target would be welcome. But persistently higher-than-expected inflation could lay the foundation for more policy normalization.

Baba, for his part, believes that currency management was the primary motivation behind the December YCC shift. As for what lies ahead, he agrees with Ito that Ueda will likely take a pragmatic and flexible policy approach—noting that Ueda doesn't seem to have any pre-set policy philosophies. Baba also agrees that policy will be guided by inflation, which he expects to fall again below the BoJ's 2% target, suggesting the need to maintain easy policy. But even if Ueda wants to continue YCC, Baba argues that technical adjustments will be necessary to strengthen its sustainability. He expects these adjustments in 2Q23, in the form of a shortening in the target duration to 5y yields, which are easier to control than 10y yields. But he believes the BoJ is in no hurry to hike rates. Indeed, he emphasizes that policy normalization will likely proceed "cautiously and gradually" to avoid market volatility, although he warns that could change if the Yen depreciates sharply again or inflation surprises to the upside.

What could all that mean for bond markets? Praveen Korapaty, GS Chief Interest Rates Strategist, sees 10y JGB yields converging towards fair value of around 75-80bp should the BoJ shift YCC around the 5y point as Baba expects; including a possible overshoot, he expects 10y JGB yields to rise to 90bp by YE23. And should the BoJ abandon YCC entirely—most likely driven by considerations around the Yen—Korapaty thinks that short-run spillovers to global bond markets could be high, but long-run spillovers would likely be much lower.

That said, Korapaty argues that potential YCC shifts are a "red herring", partly because markets already anticipate its exit. He's much more concerned about BoJ rate hikes, which he warns could have significant implications for global bond flows. That's because Japanese investors have been the biggest foreign investors in developed market foreign bonds over the last decade. Although they've begun selling those holdings over the past year, acute acceleration in that selling triggered by BoJ policy shifts could prove quite disruptive, in his view. Rieder, for his part, is less concerned about the potential bond market spillovers from a BoJ policy shift, arguing that most investors are already positioning for such a shift in both bond and FX markets. He and Korapaty also disagree on what's ahead for the bond markets broadly, with Korapaty seeing greater odds of US yields remaining elevated in 2024 (see pgs. 8-9 for our strategists' views on what this could mean for other assets).

While Rieder and most investors expect Yen appreciation, GS senior FX strategist Karen Reichgott Fishman expects the Yen to weaken a bit further on a tactical basis given her view that the path of US real rates—rather than BoJ policy—will remain the biggest driver of Yen performance. Even if BoJ policy were to shift more significantly than Baba expects, Fishman sees limited scope for Yen outperformance until the peak in US rates becomes clear, at which point the Yen should strengthen, in her view. Bruce Kirk, GS Chief Japan Equity Strategist, then explores the impact of a stronger Yen on Japanese equities, finding that while they tend to outperform when the Yen appreciates, global macro factors and domestic reform initiatives have historically been the dominant drivers of this outperformance, which he expects will remain the case.

How should investors be positioned amid the recent and likely upcoming shifts in global bond markets? While GS senior multi-asset strategist Christian Mueller-Glissmann notes that the value proposition of bonds in portfolios has risen as yields have moved sharply higher, he advises against larger allocations to them given unfavorable equity/bond correlations, still-elevated rates volatility, and the potential for BoJ-induced rate shocks. He—and Korapaty—view cash as the better alternative, not only to bonds, but to most other assets. Rieder, however, believes that 2023 is a year to be an investor rather than just a cash owner—and in particular thinks that high quality income-producing assets look "incredibly attractive" today.

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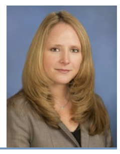


# Interview with Rick Rieder

Rick Rieder is Chief Investment Officer of Global Fixed Income at BlackRock. Below, he discusses his outlook for bond yields and, more broadly, the current investing environment.

*The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.*

**Allison Nathan: How did you interpret the global bond market rally heading into the year?**

**Rick Rieder:** Late last year, industry surveys reflected a ubiquitous view that the US economy was heading into recession; I've never understood the focus on surveys because they seem to behave like election polls—all moving in the same direction at the same time. But the market was pricing an extraordinary level of Fed easing in 2023 consistent with this bearish growth view. I thought the growth concerns were overdone—which so far seems to be proving correct—and expectations of that amount of easing were surprising/wrong. The other critical factor coming into 2023 was that investors that had sat on their hands in 2022 perhaps felt some urgency to lock in some yield before the Fed started easing again. Commercial bank deposits total almost $18tn, money market funds $5tn, and excess savings an estimated $1.7tn, so, a lot of cash has been sitting on the sidelines, and some of it entered the bond market to start the year.

**Allison Nathan: The market has reversed sharply following strong US labor market and inflation data and is now expecting US policy rates to peak above 5%. So, is there much upside to rates from here?**

**Rick Rieder:** I view the Fed funds rate path as a mountain; rates have had to rise rapidly and steeply to slow the economy but will eventually decline on the other side of the mountain. At this point, we're likely getting close to the top; we expect three more 25bp hikes given the stickiness of recent inflation data and better growth data. While I learned a long time ago that humility is an important part of the investment process, and investors shouldn't discount the possibility that the Fed will need to go even further, the Fed seems to understand that it has already done a lot and it will take time for its actions to work through the economy. It also seems aware that bringing inflation all the way back down to target will come with costs that likely aren't worth it; the US income gap is narrowing for the first time in decades given the upward wage pressure for low-paying jobs, and they won't want to disrupt that. So, I don't see significant upside for rates from here, but do expect rates to remain high for some time. This suggests that 2023 will still be a good year for fixed income despite the debt market having recently given back virtually all the gains it made this year.

**Allison Nathan: What do you make of the fact that the US yield curve is at its deepest level of inversion in decades?**

**Rick Rieder:** The first thing I think about every day is how attractive cash is right now. Investors can effectively earn 5% just by functionally sitting in cash at the front end of the curve. That's a pretty attractive alternative to going out the curve today. Especially given how much spreads have tightened in quality assets, investors have to be thinking about shifting more into cash at the front end, so that is likely playing out and could remain the case in the near term; it's hard to see the inflation data slowing much in the next month or two. But, later in the spring and into summer, I expect the economy to moderate, which would argue for rate cuts, so the yield curve should steepen out from where we are today.

**Allison Nathan: Why do you expect growth to slow over the next year?**

**Rick Rieder:** I expect growth to slow and rates to come down in 2024, for several reasons. One, the economy tends to follow the demographic curve over the medium term, only veering from it during periods of extraordinary monetary or fiscal stimulus or an exogenous shock like the pandemic. And that curve suggests slowing growth. Two, given the debt burden, high interest costs, and a divided Congress, meaningful fiscal stimulus is unlikely. And three, the help the economy is now getting from the US consumer, Chinese reopening, and lower energy prices in Europe will be off the table. So, I expect growth to slow, and alongside that, interest rates to fall and the Fed to cut. So, while today the pendulum has swung towards sitting in cash at the front end of the curve on the expectation that the economy will remain hot in the near term and the Fed has a bit more hiking to do, it will likely swing back to investors wanting to lock in attractive nominal and real yields further out as the slowdown in growth and lower rates come into view.

**Allison Nathan: How low could 10y UST yields go in 2024?**

**Rick Rieder:** The 10y hitting 2.5% next year is a real possibility.

**Allison Nathan: In December, you said that BoJ moves had the potential to cause meaningful disruptions in global bond markets. Now that we know who the incoming BoJ governor and his team will be, is that still your view?**

**Rick Rieder:** It's still a risk, but a few factors likely lessen the risk. First, the BoJ has shown a willingness to be deliberate about how it modifies/moves towards ending yield curve control (YCC), and I think that will remain the case following the leadership change. So, my guess is that the BoJ will continue to move away from YCC, but not for several months, and will initiate domestic programs to attempt to mitigate the damage from any future policy shifts. Second, domestic and global pension funds, insurance funds, and banks have been doing a lot of work to prepare for the impacts of policy evolution across different markets. So, my sense is that the impacts of future shifts in YCC will be mitigated.

**Allison Nathan: YCC has been facing significant speculative attacks. Even if the BoJ wants to be cautious and deliberate, is the current policy sustainable?**

**Rick Rieder:** Central banks can hold the line longer than many people believe. While I don't agree with YCC and think that negative interest rates don't make sense given the negative impacts of chronically low rates on capital formation, pension and banking systems, and the economy, I see no limit to the amount of JGBs the BoJ can buy. So, they can stick with the policy for a long time, even if it's not good policy.

**Allison Nathan: So, you're not concerned about another spike in rates volatility off the back of BoJ policy shifts?**

**Rick Rieder:** Markets usually don't do the same crisis twice. Once they've seen that things can play out without the world coming to end, they feel easier about those things when they happen again. Of course, the speed and communication around any future shifts would be critically important. And unexpected shifts in much smaller EM economies that generated notable volatility teach us that we can't discount the prospect of some volatility stemming from shifts in the much bigger JGB market. But my sense right now is that while future shifts could create some ripples, they probably won't create a crisis.

**Allison Nathan: Japanese investors have been selling DM bonds over the past year. Are you concerned at all about the prospect of an acceleration in this selling?**

**Rick Rieder:** On a cross-currency basis, it certainly doesn't make sense for Japanese investors to buy foreign debt. Should JGBs become even more attractive to domestic investors, more selling of foreign bonds could occur, especially of the bonds in places like France, Italy, and Spain, of which Japanese investors have large holdings. But a lot has been sold already.

**Allison Nathan: What about potential spillovers to the Yen from a shift in BoJ policy?**

**Rick Rieder:** Most investors are expecting a stronger Yen—another example of investors jumping on the same theme that has become increasingly common. I agree that the Yen will appreciate. But given the extent to which investors are already positioning for this move through call structures, etc., it likely won't create the impact that it otherwise would. Some market volatility is possible, but volatility usually happens around unexpected shifts, and most people expect Yen appreciation.

**Allison Nathan: Do you also expect a weaker Dollar to contribute to a lower USD/JPY?**

**Rick Rieder:** I expect 2023 will be very different from 2022 when it comes to the Dollar, as the Dollar becomes more of a two-way trade this year. It's likely to remain relatively firm in the near term given the momentum in growth and inflation data we discussed, but my sense is that the Dollar could weaken a bit as the economy slows. That said, I don't expect much depreciation; people underestimate the extraordinary amount of trade flows, liabilities, and collateral that's based in dollars, which gives it a natural tendency to stay strong, particularly in a world that's becoming more regionalized. So, I think the Dollar will likely depreciate a bit at the margin, but not by much.

**Allison Nathan: More broadly, you recently said that 2023 presents an opportunity to be an investor again. What did you mean by that?**

**Rick Rieder:** In 2022, we ran huge amounts of cash in our portfolios—on the order of 20-25%—mainly because we had no ability to hedge. With central banks behind the curve and needing to catch up, markets were clearly headed lower but rates, currency, and equity vol were very expensive. So, cash was the best hedge. However, this year investors have more hedging tools at their disposal. Currency and equity vol are priced much more reasonably, and duration can serve as a hedge assuming that the Fed pauses and forward curves shift. So, investors no longer have to just sit in cash as a hedge, be defensive, and outperform by doing less. Instead, they can manage risk more effectively and can actually invest. So, this year is a lot more fun than last year.

**Allison Nathan: Following the strong start to the year, is the equity market a good place for investors to be?**

**Rick Rieder:** I doubt the incredible technicals that played out in the equity market in January will repeat. Investors took historic tax losses at the end of 2022, and then got back into the market at the start of the year, and short positions were squeezed, driving the strong equity performance. So, equities will likely have a decent year, but I would be blown away if it's any better than decent without rates coming down significantly. It's difficult to generate a competitive return when the risk-free rate is this high; that's not just an NPV calculation—it's just pretty darn hard for companies to borrow, engage in capex or M&A, or buy back stock with these high rates. So, much of the return in US equities has likely been front loaded.

**Allison Nathan: What about investing in European assets, which have generally outperformed US assets YTD?**

**Rick Rieder:** For much of my career, and certainly over the last few years, the US has looked more attractive than Europe, but now Europe looks relatively more intriguing, and that likely has some staying power. That's not to say that investing in Europe doesn't come with risk—there's a war on the region's doorstep that could intensify and potential for European growth to slow even more significantly than US growth in 2024/25. But, for Dollar investors, the yields from buying European Credit—which is outright cheaper than US credit—and then swapping it back to dollars are compelling. European interest rates are also more interesting given the burst of sovereign bond supply and some credit supply that's weighed on bond prices at the same time that the ECB and BoE have continued to tighten policy. So, Europe looks more intriguing, especially given how tight spreads are in US credit, mortgage, paper, and top-of-the-stack securitized debt. Even European equities look attractive, which I haven't said in a long time. People like us have been underinvested in European equities, maybe rightly so, for several years. But partly for that reason, equity valuations and technicals look better than in the US. So, we wouldn't want to be all in on Europe, just as we wouldn't want to be all in on anything, but, at the margin, would we take more risk there than we have in the past? Definitely.

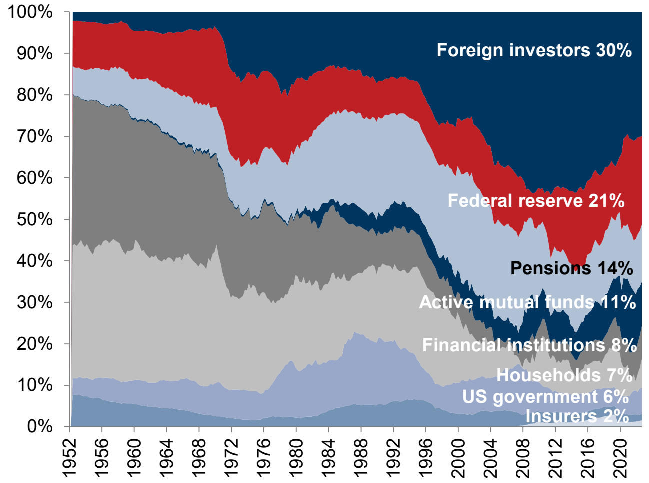
**Allison Nathan: So, what should investors own today?**

**Rick Rieder:** As I mentioned, the investment environment this year is much more fertile than last year. International equities look interesting as we just discussed in the context of Europe, but parts of Japan and China also look compelling. And some parts of EM are interesting given that the Dollar will probably marginally weaken this year. So, getting a bit more international in portfolios makes a ton of sense to me. But I'm perhaps most giddy about being a lender today; owning high quality income-producing assets at around 5%—versus the 1% that prevailed for most of the past decade—is incredibly attractive.

# Global bond markets in pics

**Foreign investors are the largest owners of US Treasuries…**

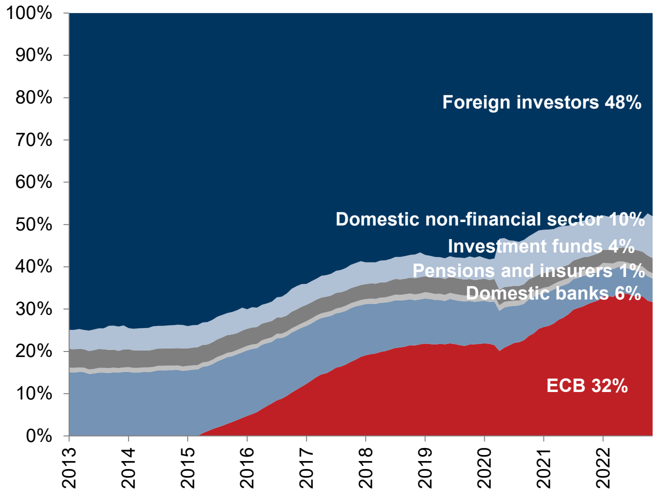
Ownership of US government bond market, %




*Source: Federal Reserve, Goldman Sachs GIR.*

**…as well as of German Bunds**

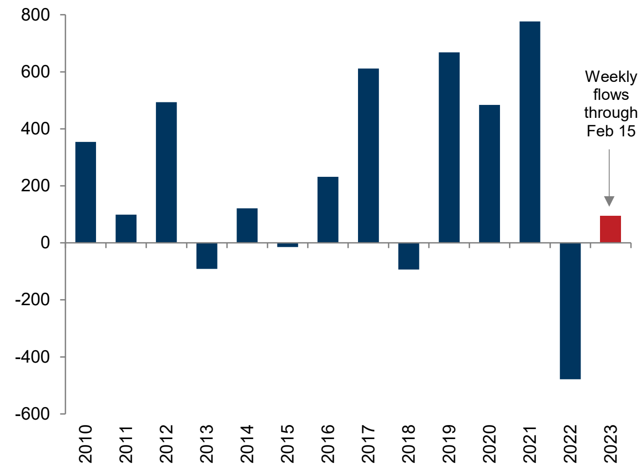
Ownership as a share of total debt securities outstanding




*Source: Bundesbank, Goldman Sachs GIR.*

**Bond flows have turned positive again after large outflows last year…**

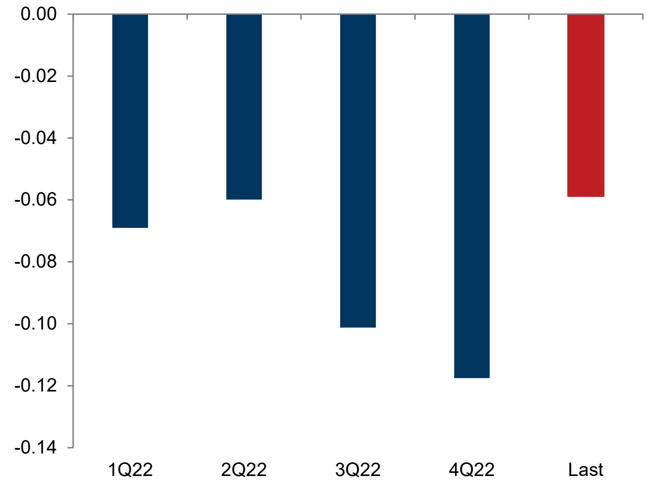
Global flows into bond funds, $bn




*Note: 2023 figure subject to revision.*
*Source: EPFR, Goldman Sachs GIR.*

**…as investors substantially reduced their duration underweights**

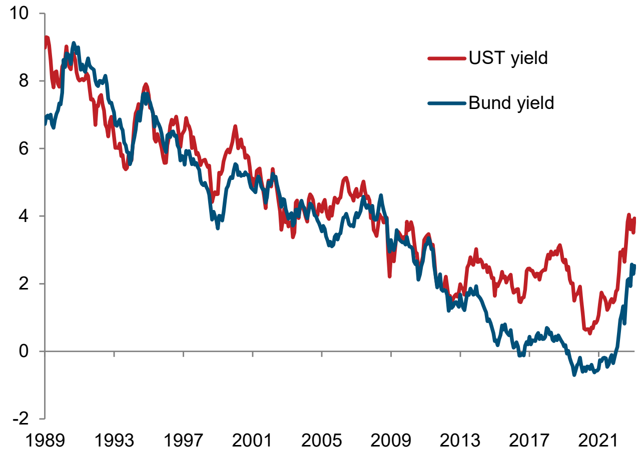
Asset-weighted duration beta (negative values indicate underweight duration bias vs. the Bloomberg Agg)




*Source: Goldman Sachs GIR.*

**The value proposition of bonds has increased as yields have moved significantly higher…**

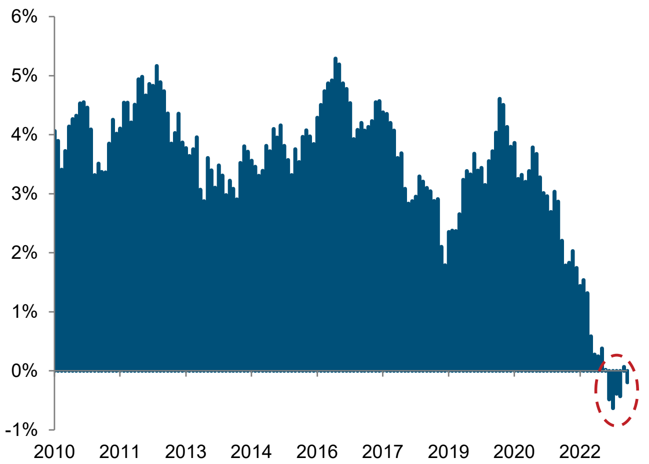
US Treasury and German Bund yields, %




*Source: Bloomberg, Goldman Sachs GIR.*

**…but cash has outperformed bonds over the last several months, making it the better alternative**

Performance of US 10y vs. US 3m (10yr rolling performance)



*Note: US 3m is 3m T-bills, which are used as a proxy for cash.*
*Source: Haver Analytics, Goldman Sachs GIR.*

# Not yielding to bonds yet

## Christian Mueller-Glissmann assesses the role of fixed income in multi-asset portfolios

Following two years of negative returns on fixed income, the value proposition of bonds in multi-asset portfolios has risen as yields have turned sharply higher on the back of aggressive central bank tightening to tame inflation. But while higher yields and a decline in rates volatility as major economies have moved past the peak in inflation have made bonds more attractive, still-positive equity/bond correlations, lingering rates volatility, and the potential for new rate shocks from Japan argue against larger allocations to bonds. Accordingly, we remain underweight bonds on both a tactical and strategic basis, and view cash as the better alternative.

### Unfavorable correlations likely persisting

Equities became very positively correlated with bonds last year (negatively correlated with real yields), resulting in the disappearance of a key source of portfolio diversification. While bonds buffered equity drawdowns during the last cycle, in 2022 equities and bonds sold off together, resulting in one of the largest drawdowns for 60/40 portfolios on record.

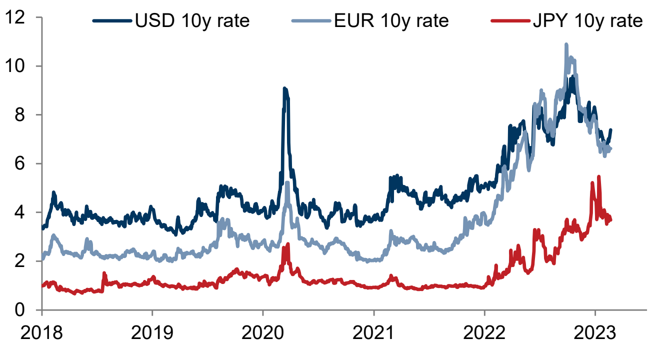
While equity/bond correlations turned slightly more favorable to start the year, they are still positive, and are likely to remain so for a while given the stickiness of inflation—our economists expect US headline inflation to remain above 4% this year. We find that headline inflation above 3-4% has usually resulted in more positive equity/bond correlations. Over the past century, negative correlations have been the exception rather than the norm: only during the 1920s, the 1950s/60s, and since the late 1990s were correlations consistently negative as inflation was generally anchored at low levels. In the 1970s and 1980s—periods characterized by oil crises and stagflation—equity/bond correlations were mostly positive.

### Rates volatility traveling east

Rates volatility is lower, but still elevated, as economies have moved past the peak in inflation and central bank hawkishness. In the US, uncertainty about the inflation path (proxied by the dispersion of 1-year ahead forecasts) and consequent uncertainty about policy rates—which have historically been the key drivers of the level of rates volatility—are closer to their peak, and should lead US rates volatility lower this year.

**Rates volatility has reset lower, though it remains elevated**

3-month implied volatility of the 10y rate, bp/day




*Source: Bloomberg, Goldman Sachs GIR.*

That said, policy developments out of Japan may create a new source of rate shocks. With the BoJ departing from other major central banks last year in maintaining very easy policy, the implied volatility of longer-dated Japanese rates has lagged the US and Europe. However, volatility has started to catch up recently as investors have become more concerned about the prospect of a disorderly BoJ tightening. Even if BoJ normalization proceeds in the cautious and gradual manner our economists expect (see pgs. 12-13) and doesn't generate a sharp rise in rates volatility, BoJ changes will likely increase the upward pressure on global bond yields, given how correlated global bond markets have become in the last few decades.

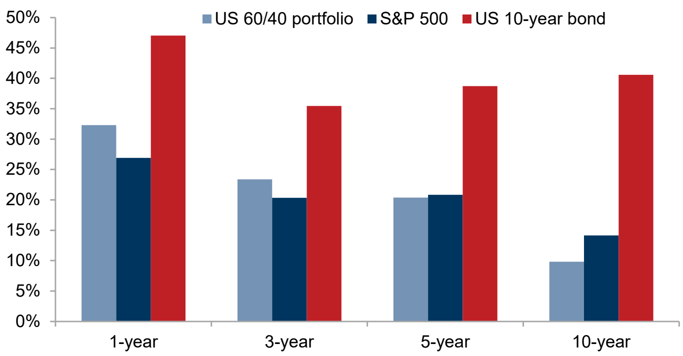
### Cash is not trash

Both for bonds and equities, the competition from cash is strong. US money market funds are yielding nearly 5%, well above the ~3.9% yield on 10y USTs, and the prospective returns on cash are still rising as central banks continue hiking. Cash also doesn't force investors to take on duration risk, the reward for which is currently poor given the deeply inverted yield curve.

Equities and 60/40 portfolios have outperformed cash over the long run—sitting in cash proved the better choice only 10% of the time since 1900. However, in nearly 40% of cases, bonds underperformed cash. While it seldom makes sense to be broadly underinvested for a long time, bonds have been a poor investment relative to cash for prolonged periods in the past.

**While over the long run equities have usually outperformed cash, bonds often underperformed cash over prolonged periods**

Hit ratio of cash relative to different investments, monthly returns, %




*Note: Hit ratio is the number of times the return of cash exceeded the return of 60/40 portfolios/total number of returns considered.*
*Source: Haver Analytics, Goldman Sachs GIR.*

### Look for value, and risk mitigation, elsewhere

Taken together, we recommend remaining underweight bonds in portfolios. Even if equity/bond correlations turn more favorable and rates volatility continues to decline, we forecast that global bond yields have further to rise, which suggests the likelihood of better opportunities to add duration down the line. In the meantime, we continue to prefer cash (we are overweight on a 3m and 12m basis), and see value in higher allocations to real assets. And given that bonds have become a source of risk rather than safety in the current inflation environment, we would recommend alternative risk mitigation strategies for 60/40 investors such as allocations to trend-following strategies, up-in-quality trades in equity/credit, collaring (selling calls to buy puts), and safe-haven FX, which may increasingly include the Yen again as the BoJ normalizes.

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# Snapshot of our asset views

## Our strategists are forecasting higher rates ahead both for…

### …US

GS GIR US Rates Strategy team

- The near-term policy path the market is pricing is broadly consistent with our economists' forecast for a 5.25-5.5% terminal rate. Further out the curve, however, we think yields are still not quite fully priced for our non-recessionary baseline, and see room for further reassessment even after the recent reset higher.
- Longer term real yields suggest investors continue to see a meaningful chance that the economy struggles to support higher real yields, in line with the secular stagnation, low r* view of the world from the last cycle. We think growth outcomes, rather than policy action, will drive further repricing of these expectations. If, over the coming months, it becomes clear that the economy is holding up despite elevated policy rates (our economists' baseline), we expect the market to conclude that the policy rate is perhaps not quite as restrictive as is believed today, supporting additional upside to longer term yields. As this occurs, the degree of yield curve inversion—one of the current symptoms of the market's low longer run rate assumption—should also diminish (see pgs. 16-17).

### …and Europe

GS GIR European Rates Strategy team

- Underlying inflation dynamics and the ECB's response to these dynamics will remain the key driver of European Government Bond (EGB) markets and the level of core rates, with ECB speakers continuing to show concern about ongoing wage negotiations in particular.
- But bond flows could also have some bearing on EGB markets; we find that rates volatility has been an important determinant of sovereign credit risk appetite and corresponding bond fund inflows YTD. This suggests that with greater clarity on the policy rate paths (in Europe and also the US), EGBs could be supported by carry strategies.
- As a result, we continue to expect 10y Bund yields to reprice to 2.75%, but see downside risk to our year-end 10y BTP-Bund spread target of 235bp.

## Off the back of these higher rate expectations, our strategists explore the extent to which higher core rates are priced into their asset classes, and what risks/opportunities that presents

### Equities

GS GIR US and European Equity Strategy teams

**US**

- S&P 500 valuations are stretched in absolute and relative terms today, trading at 18x forward earnings. In absolute terms, this valuation multiple ranks in the 87th percentile relative to history, and the 400bp yield gap between the earnings yield and real UST yield ranks in the 85th percentile. So, we see limited opportunity for valuation expansion in the face of higher rates.
- Equities tend to digest higher interest rates better if growth rather than inflation or policy has driven them. However, valuation multiples already trade above the level that would be implied by the recent relationship with rates.
- Given high absolute equity valuations, a low equity risk premium, and competitive alternatives to US equities, the S&P 500 is unlikely to move substantially higher through year-end if interest rates continue to rise as our economists expect.

**Europe**

- European equities trade on 13x P/E, a larger-than-normal discount to the current US 18x P/E even after adjusting for different sector weights, and flows into Europe have started picking up in 2023.
- Real yields in Europe have been negative through the last decade, making European equites—with a dividend yield of around 3.5% and earnings yield of 7-8%—look comparatively attractive.
- However, as (real) yields have risen more recently, there are now more alternatives. Indeed, EUR IG corporate bonds offer a yield above the dividend yield for the first time in 10 years.
- We expect only modest upside for European equities given a relatively low equity risk premium and forecasts for slow earnings growth since margins are already high and economic growth is likely to remain below potential.
- The past year's outperformance of Value over Growth has been a function of higher rates, and we see scope for Value to re-rate further as the value dispersion remains high.

## G10 FX

GS GIR G10 FX Strategy team

- The recent prospect of a longer Fed hiking cycle has contributed to a resurgence in the Dollar; our expectation that core rates will continue to move higher suggests that the Dollar will remain supported relative to other currencies.
- Dollar strength would have the largest impact on the Japanese Yen, which is the most duration-sensitive DM currency. Our expectation for higher US rates is an important reason why we expect only modest Yen appreciation this year despite its current extreme undervaluation and the potential for a hawkish BoJ policy shift (see pg. 18). Front-end rate differentials tend to have a larger effect on the Euro, in part because of their influence on capital flows.

## DM Credit

GS GIR Credit Strategy team

- The further increase in rates that we expect will continue to increase the value proposition of cash as an asset class relative to high quality spread products.
- In USD fixed income markets, the return of cash as a competing alternative, combined with the deep inversion of the Treasury yield curve, greatly constrains the scope for any meaningful spread tightening, particularly in the USD investment grade market. For unconstrained investors, this backdrop strengthens the incentives to move down the quality spectrum into the higher quality parts of the high yield market. Partly for this reason, we recommend an overweight allocation on BB-rated bonds vs. their BBB peers.
- In the EUR investment grade market, the magnitude of yield erosion vs. cash has been far less severe, leaving us comfortable with our overweight allocation recommendation vs. USD IG. That said, as the ECB continues to hike the deposit rate as our economists expect, cash will also become a more serious competitor to high quality corporate bonds.

## Emerging Markets

GS GIR EM and FX Strategy teams

**Local rates:**

- It is generally difficult for EM local rates to escape a significant move higher in DM yields, given the fundamental linkages between the two asset classes. Should DM yields move significantly higher, the relatively demanding valuations in EM rates could be another headwind.
- That said, it is not uncommon for EM local rates to outperform DM when DM yields are rising. In particular, when it comes to long-dated forwards, the relative performance of EM vs DM rates tends to closely track the dynamics of other cyclical assets.
- Should the next move higher in DM yields happen against a pro-cyclical backdrop (as we have seen in recent weeks), there is scope for long-dated EM local duration to continue to outperform relative to DM.

**FX:**

- The effect of higher rates on EM FX depends on the underlying drivers and speed of the upward move. EM currencies that offer some carry protection (i.e., higher domestic yields) can typically digest a move higher in core yields as long as the move in fixed income is gradual and coupled with better growth expectations. However, policy-driven shifts aimed at slowing activity can have an outsized effect on duration-sensitive EM currencies like the Indonesian Rupiah and the Turkish Lira.

**Equities:**

- Our research suggests that while higher interest rates may weigh on equity valuations, EPS growth tends to improve as rates rise with growth, offsetting the potential de-rating. We forecast EM EPS to rise 9% over the next 12 months, driving the bulk of our returns projections.
- The key determinant in the rates-equity relationship is the source of the rate move: rising rates typically harms equity prices if the move is led by real rates (as opposed to breakeven rates), as was the case in 2013 and 2022.
- Given our view that rates may “catch up” to the cyclical pricing evident in headline indices (including the potential for higher real rates), we suggest investors look to equity slices that benefit from either rising core rates (e.g. CEE-3 financials) or heavily discounted valuations (e.g. Korea).

**Credit:**

- EM USD bond yields tend to outperform core rates when the underlying driver of the move higher is growth. In other words, spreads tend to compress when core rates move higher because of growth (as opposed to inflation), and within EM credit HY tends to outperform IG.
- However, with EM credit spreads already looking expensive, we see limited room for sustained spread compression. ‘Pockets of value’ still exist within EM credit, such as CEE and LatAm IG, where technical and political concerns have weighed on performance.
- Credits in distress (i.e, rated CCC or lower) also offer value on our estimates and tend to have the highest beta to global growth while also benefitting from a decline in rates volatility.

# Interview with Takatoshi Ito

Takatoshi Ito is Professor at Columbia University's School of International and Public Affairs. Previously, he served as Deputy Vice Minister for International Affairs in the Japanese Ministry of Finance. Below, he shares his views on BoJ policy—past, present, and future.

*The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.*

**Allison Nathan: When we last spoke to you in 2013 on the eve of BoJ Governor Shirakawa's departure, you argued that BoJ policy had been too conventional for the unconventional times that followed the Global Financial Crisis, in contrast to most other major central banks. Over the past year, the BoJ has similarly departed from other major central banks in maintaining an ultra-loose policy stance. Has that been the right course of action?**

**Takatoshi Ito:** Broadly speaking, Governor Kuroda's term has largely been a success. Although critics argue that despite many years of ultra-easy policy prior to the pandemic, the BoJ's 2% inflation target had not been reached and inflation expectations remained depressed, the era of chronic deflation had ended, and Japanese growth was strong. Of course, pandemic and war-related distortions have pushed Japanese inflation sharply higher in the past year, increasingly raising questions around the need for continued ultra-accommodative policy, especially as other major central banks have tightened aggressively. But BoJ forecasts that inflation will fall below the 2% target again by the end of the year, on top of Kuroda's stated tolerance for some overshooting to ensure that inflation expectations rise sustainably to 2%, have led the BoJ to largely stay the course, with only a minor adjustment to its yield curve control (YCC) band in December. In my view, this YCC adjustment that effectively raised the ceiling at which the BoJ would defend the 10y JGB rate probably came a bit too late; the same adjustment could have been made in August or September within the BoJ's inflation targeting framework given the sharp increases in inflation that suggest a 2% inflation rate on average over the next 10 years may very well be achievable.

**Allison Nathan: But the BoJ claimed that the December YCC adjustment was made to address a market functioning issue, not to tighten policy. Do you believe that was really the case?**

**Takatoshi Ito:** Indeed, Governor Kuroda said that the shift was made for market functioning reasons given that the 25bp cap on 10y JGBs had become increasingly difficult to defend; the BoJ had been buying ever-larger amounts of bonds to maintain it. Although the JGB market is not totally dysfunctional, the market functioning issue is real and the inversion in the curve over the 8-10y zone is not healthy, so there was likely a true desire to address this. As you also say, Kuroda insisted that this shift did not constitute tightening because the real interest rate was dropping, not rising, given that inflation was increasing alongside an unchanged nominal rate. But even if all of this was true, was the December shift actually the first step toward exit? I would say maybe it wasn't the first step, but perhaps preparation for the first step; I would think of it as the BoJ putting on its shoes.

**Allison Nathan: In that context, is extending the maturity of funds-supplying operations against pooled collateral that the BoJ implemented at the January meeting a game changer, or is it just buying time?**

**Takatoshi Ito:** Buying time.

**Allison Nathan: Given that, the million-dollar question today is what policy direction incoming BoJ Governor Ueda will pursue. His nomination was a surprise, and he remains a bit of an unknown quantity. You know him through your years in academia together. How would you describe his fundamental thinking and approach to policy?**

**Takatoshi Ito:** Ueda is a great scholar, extremely well-versed in the theories and studies of monetary policy, and loves analyzing data. But he has been quiet as of late. He has not written on record about whether he would commit to inflation targeting, how he views inflation expectations, how concerned he is about moral hazard that may cause the fiscal authority to print more bonds if long-term interest rates are kept too low, or anything on the recent exchange rate volatility. He has been very careful not to either sharply criticize or fully endorse the negative interest rate policy (NIRP), YCC, and other policies pursued during Kuroda's tenure. I can't read his mind, nor can I say what he's likely to do; all I can say is that he will look at the data carefully and make judgements based on it.

**Allison Nathan: Given that Ueda has been fairly quiet over the past several months, market participants have been searching for clues about his policy leanings among his past policy decisions, with some participants pointing to his vote against the termination of the zero interest rate policy (ZIRP) in 2000 as a reason to characterize him as a policy dove. Does that seem right to you?**

**Takatoshi Ito:** No; I don't believe his voting behavior reveals much about his policy leanings. It's true that he voted against former BoJ Governor Hayami's attempt to end ZIRP in 2000. But he voted "no" only once, and from the next meeting on he sided with Hayami. Another member of the BoJ's policy board, Nobuyuki Nakahara, was alone in the super-easing camp at that time. Ueda was more in the middle, maintaining a relatively balanced view between the two sides. So, based on this voting behavior, I wouldn't classify him as either a dove or a hawk.

**Allison Nathan: A competing narrative posits that picking someone outside of Kuroda's team is in itself hawkish, because it implies that the government didn't want a continuity candidate. What's your view on that?**

**Takatoshi Ito:** Well, the government initially offered the position to current Deputy Governor Amamiya, who has been a key architect of the BoJ's ultra-easy policy stance under Kuroda. And perhaps the biggest surprise of all was that

Amamiya declined, reportedly arguing that the new leadership should come from outside the BoJ and the Ministry of Finance (MoF) to ensure an objective review of current policy. But I'm not sure you can conclude anything about the direction of future policy based on the fact that Ueda is an outsider.

**Allison Nathan: The market is also focused on incoming Deputy Governor Uchida and the role he might play under Ueda. What's your view?**

**Takatoshi Ito:** Uchida is highly regarded within the BoJ, so whatever the policy board decides, he will rally the BoJ staff around the decision and implement it—of that I am 100% sure.

**Allison Nathan: So, we don't know what the BoJ's next steps will be, but what *should* they be given the economic conditions in Japan?**

**Takatoshi Ito:** It depends on the path of inflation. If the BoJ's forecasts for a sharp decline in inflation come to fruition, then the BoJ is likely to be very cautious in pursuing normalization and could decide to maintain their ultra-easy stance. But, as has happened with other major central banks, the BoJ's inflation forecasts could prove too low. Inflation excluding energy and fresh food prices is now running at 3.2%. So, even if energy and food prices stop rising, the inflation rate could remain above the 2% target. And annual *shunto* wage negotiations that will conclude in April could also surprise to the upside—rising by, say, 4-5% versus around 2% historically. That would prove inflationary. But it's important to note that such a development could be desirable if it means that "demand-pull" inflation from a rise in household income and consumption replaces the "cost-push" inflation of 2022 on the back of energy and food price increases, which left households worse off. In that case, the BoJ shouldn't stifle such trends by tightening policy prematurely. Remember, inflation expectations in Japan remain below 2%, so some overshooting and fostering of upside wage trends that could lead to achieving 2% inflation on a sustained basis should be welcomed.

All that said, a further upward adjustment of 10y bond yields will likely be necessary at some point, and higher inflation, if it were to manifest, could provide the foundation for such a recalibration and/or an exit from ultra-accommodative policy.

**Allison Nathan: What could the next YCC adjustment be?**

**Takatoshi Ito:** The BoJ could continue to adjust the band gradually or abandon YCC entirely and let the market determine the 10y rate. Pros and cons are associated with each option—gradual adjustment might have a better chance of avoiding a spike in market volatility, but may require the BoJ to buy more government bonds, which could prove even more costly down the road. But keep in mind that the most successful adjustments—whether gradual or sudden—happen when policymakers are one step ahead of the market to avoid looking defeated by the market as well as speculative attacks that could undo the intent of the policy shift. This was the case in December, when the BoJ surprised the market with its YCC shift. At this point, surprising the market will be very difficult. For that reason, my guess is that the BoJ will follow in the Fed's footsteps by starting to say that policy decisions will be "data dependent" in an attempt to stay ahead of the market.

**Allison Nathan: Even if the BoJ prefers not to shift away from ultra-easy policy, could the market force it to do so by continuing to mount speculative attacks against it? Is there a limit to the BoJ's ability to defend against such attacks?**

**Takatoshi Ito:** I see no limit to the BoJ's ability to defend against speculative attacks; the BoJ can continue to buy bonds, which will force yields to come back down below the ceiling. And if the ceiling becomes increasingly unsustainable, the BoJ can just lift the ceiling, as it did in December. It could do so again even before Ueda formally starts his tenure, if need be. But attacks on YCC may not just be speculative; rather, they may reflect a fundamental shift in investors' thinking. In that case, defending the ceiling will ultimately prove futile. That's why policymakers must understand who is selling and why, and be prepared to adjust policy accordingly.

**Allison Nathan: If the BoJ did abandon YCC, what do you think the fair value of the 10y would be?**

**Takatoshi Ito:** My best guess is somewhere around or slightly above 1%, but no one can know what the value truly is until the markets go through a period of price discovery. A knee-jerk reaction that leads to some overshooting would be likely at first, but we'd probably get a sense of where the rate is likely to settle within a week or two of the policy shift.

**Allison Nathan: How much does the question of YCC sustainability depend on what happens to the Yen?**

**Takatoshi Ito:** Developments in US inflation and Fed rate hikes have driven most of the movement in USD/JPY over the past year, and the BoJ can't do much about that. Of course, it could hike rates to narrow the interest rate differential, but that's not costless, and the BoJ does not have the mandate nor the toolkit to keep the value of the currency stable. Kuroda basically endured 150 USD/JPY until the MoF intervened; unlike the rest of the major economies, Japan's finance ministry alone has the power to manage movements in the exchange rate.

**Allison Nathan: When we spoke to you in 2013, you argued that the Yen was overvalued. Is it undervalued now?**

**Takatoshi Ito:** My view that the Yen was substantially overvalued in 2012—when USD/JPY was trading sub-90—was based on the observation that Japan was in a period of sustained deflation and economic activity was below potential. Those conditions laid the groundwork for a period of substantial monetary easing under Prime Minister Abe and Governor Kuroda—the so-called policy "bazooka"—that would have the by-products of weakening the Yen and boosting stock prices.

Today, Japanese growth is running right around its potential owing to its post-pandemic recovery, unemployment is very low and, as we've discussed, the inflation rate is high—at 4%—but projected to decline to below 2%. Given this backdrop, USD/JPY in the 130-135 range looks neither too weak nor too strong. At the 150 level the MoF recently intervened at, the Yen looked too weak. If USD/JPY were to fall below 100 as the BoJ takes more serious steps towards normalization, I'd say that's too strong. So, there's some way to go before the value of the Yen looks concerning in either direction, and a lot would need to happen—both domestically as well as globally—between now and then to get there.

# Interview with Naohiko Baba

Naohiko Baba is Chief Japan Economist at Goldman Sachs. He argues that under the BoJ's current inflation targeting framework, macro conditions are unlikely to warrant a major shift in policy yet, but that further YCC adjustments will be necessary to strengthen its sustainability.

**Allison Nathan: Over the past year, the BoJ has departed from other major central banks in maintaining an ultra-accommodative policy stance. Has that been the right course of action given the economic conditions in Japan?**

**Naohiko Baba:** Yes and no. It's been the right course of action in the sense that Japan's inflation issue is quite different from that of other developed economies. Japan has suffered from chronic deflation since the late 1990s, largely due to stagnant wages, as workers and corporate managements prioritized job security over wage growth following the financial crisis, and as demographic headwinds have weighed on the economy's growth prospects, leaving firms hesitant to raise wages on a sustained basis. Maintaining a high-pressure economy in light of this chronic deflation problem has been understandable. But it has come at a cost; as the BoJ has deviated from other central banks, particularly the Fed, the Yen has weakened substantially, leading to significant cost-push inflation that put a burden on households. As a result, the Ministry of Finance (MoF) was forced to intervene in the FX market, and the government had to deliver large fiscal stimulus. Given the current inflationary environment and the level of the USD/JPY rate, amid the increasingly imminent sustainability issue of yield curve control (YCC)—the BoJ has bought JGBs worth ¥129tn (on a gross basis), or around 23% of Japan's GDP, over the last 12 months—the current juncture presents a good opportunity for the BoJ to exit its unorthodox monetary policy framework, but it may squander this opportunity.

**Allison Nathan: Was the BoJ's widening of the YCC band in December a step in the direction of exit, or was it done to just address a market functioning issue, as the BoJ stated?**

**Naohiko Baba:** My understanding is that the BoJ widened the band in response to a request from the Kishida Administration to operate YCC in a more flexible manner, as the government seems to have thought that a lack of flexibility in managing YCC amplified the impact of yield differentials on the exchange rate, exacerbating the significant weakening of the Yen. So, currency management was the key motivation behind the shift. The BoJ also likely believed that widening the band as the government requested would create some breathing space in defending YCC. But this backfired—the surprise widening only reinforced market skepticism about the BoJ's ability to maintain YCC and fueled speculative attacks.

That said, billing the adjustment as a response to a market functioning issue also makes some sense; YCC has been blamed for the 8-10y inversion in the JGB yield curve that is viewed as a major market distortion. To cope with this issue, the BoJ strengthened its control over the JGB market by purchasing more JGBs across the whole yield curve, which only served to further worsen the deterioration of market functioning. So, the BoJ arguably fell into the trap of self-contradiction.

**Allison Nathan: Do the macro conditions in Japan today warrant a shift in policy direction?**

**Naohiko Baba:** It depends on the definition of "stable and sustainable achievement" of the 2% inflation target. Under Governor Kuroda, the BoJ has said that for Japanese inflation to stabilize at 2%, at least 3% wage growth is necessary. If the BoJ sticks to this precondition under the new leadership of Governor Ueda, macro conditions are unlikely to warrant a major shift in policy yet. While total wage growth rose significantly to 4.8% in December, this was mainly the result of bonuses and inflation allowances; once those temporary factors drop out, we expect wage growth to return to around 2% on average in FY2023, given our estimate that *shunto* spring wage negotiations will result in a 2.8% wage hike.

**Allison Nathan: How likely is it that Kuroda makes policy changes at his final Monetary Policy Meeting in March, even before the new leadership begins their term?**

**Naohiko Baba:** We don't expect any policy changes in March, for three reasons. One, the March meeting is close to the fiscal year-end, so any market disruptions stemming from a change in policy could significantly affect Japanese companies. Two, the meeting is a lame duck session, so ordinarily the governor would refrain from making major changes. And three, the meeting will occur prior to the release of the preliminary results of the *shunto* wage negotiations, making it challenging to adjust any policy tied to wages and inflation. All that said, Kuroda has surprised markets and us on several occasions since his inaugural monetary policy meeting a decade ago, when the BoJ unveiled its unprecedented easing policy. So, we don't rule out the possibility of him declaring victory over deflation and making a major adjustment to YCC to alleviate the burden on the incoming leadership, especially if market expectations for YCC adjustment were to wane by then.

**Allison Nathan: What do we know about Ueda and his potential policy approach?**

**Naohiko Baba:** The main difference between Kuroda and Ueda is likely that the latter doesn't seem to have any strong pre-set philosophies about policy; his policy approach is more pragmatic and flexible, and in that sense, he seems to have a broadly balanced view on monetary policy—he's neither a significant dove nor a significant hawk. People seem to be characterizing him as a bit of a dove because he voted against the termination of the zero interest rate policy (ZIRP) in 2000, but that episode just demonstrates that his decision-making is based on a cautious and thorough assessment of the macroeconomic fundamentals and market conditions; a close read of that vote reveals that he didn't object to rate hikes per se, but rather to hikes at that moment, which turned out to be the right decision given that the tech bubble burst shortly after.

**Allison Nathan: Some observers believe that incoming Deputy Governor Uchida will be the brains behind the BoJ. How influential do you expect him to be in crafting policy?**

**Naohiko Baba:** Uchida's role will be very important. People view him as very dovish given that he was an architect of YCC and negative interest rate policy (NIRP) under Kuroda. But my sense is that, much like Ueda, he doesn't have any pre-set policy philosophy. And if Ueda decides to tighten policy, Uchida will orchestrate the optimal way to deliver that policy stance, just as he did for Kuroda—Uchida is a decision-maker.

**Allison Nathan: Given that, how do you expect BoJ policy to evolve from here?**

**Naohiko Baba:** I expect Ueda to raise the BoJ's inflation forecast in the April Outlook Report, But the new forecast will likely still fall short of stable achievement of the 2% target, suggesting the need to maintain easy monetary conditions. Even if Ueda aims to maintain YCC, however, technical adjustments will be required to strengthen its sustainability given the large amounts of JGBs the BoJ has had to buy to defend the 10y yield cap. Such an adjustment will mostly likely take place in 2Q23, and could take the form of scrapping YCC, a further widening of the tolerable band, or a shortening in the target duration. We see a slightly higher probability that the BoJ shifts to targeting 5y yields as its next step. 5y yields are easier to control given that forward guidance is more effective for shorter yields, which would likely allow the BoJ to meaningfully reduce its JGB purchases. The BoJ's recent purchases of 2-5y JGBs and introduction of funds-supplying operations for maturities up to five years may be laying the groundwork for such a shortening in maturity target. The BoJ's analysis also shows that negative economic impact could be contained substantially if it controls short and medium-term yields.

**Allison Nathan: Wouldn't such an incremental step just reinforce market skepticism about the BoJ's ability to maintain YCC and fuel further speculative attacks? Why not just abandon YCC, as the RBA did in 2021?**

**Naohiko Baba:** If Ueda has a completely free hand, he may choose to scrap YCC altogether, as he's acknowledged that fine-tuning long-term yields is challenging. But the political background is important. Kishida has likely asked Ueda to engineer a soft landing for the dismantling of YCC that avoids causing large market and economic disruptions. So, no matter how difficult it may be, the BoJ is likely to need to take a step-by-step approach. The BoJ would probably also want to avoid the embarrassment and loss of credibility the RBA suffered when it abruptly abandoned YCC, which implies that the BoJ will continue to fend off speculative attacks for a while. Likely only when market speculation subsides and the BoJ can take the lead will it retreat from YCC.

**Allison Nathan: How is interest rate policy likely to evolve?**

**Naohiko Baba:** We expect Ueda to first focus on cautiously and gradually retreating from YCC, so as not to cause a large shock to the economy, before resetting to a more traditional policy framework based on controlling the short-term policy rate. I don't think the BoJ will be in a hurry to terminate NIRP, as the net burden on financial institutions isn't very large given that the BoJ has carefully controlled the amount of institutions' current account balances to which negative rates apply. So, Ueda can afford to be patient, and will likely wait until it's clear that the 2% inflation target can be achieved on a sustainable basis before hiking rates.

**Allison Nathan: To what extent does all this depend on what happens to the Yen from here?**

**Naohiko Baba:** As I mentioned, I understand that the BoJ widened the YCC band in December mainly in response to a government request stemming from the Yen's sharp depreciation, so if the Yen were to again sharply weaken vs. the Dollar—which will largely depend on the 10y USD-JPY yield differential—Kishida may ask the BoJ to adjust YCC more substantially and/or quickly. Last year's MoF intervention was triggered when the Yen broke the 145 line, so the uncomfortable zone is probably above 140.

**Allison Nathan: What conditions would likely be required for the BoJ to abandon YCC/NIRP this year?**

**Naohiko Baba:** Stronger-than-expected wage growth and more sustainable inflation may lead the BoJ to conclude that attainment of the 2% inflation target is in sight, which, on its own or combined with increased political pressure to combat inflation, could lead the BoJ to abandon YCC/NIRP this year. But we don't ascribe high odds to such a scenario at this point given our expectation that inflation will fall to below 2% eventually as wage growth is likely to be limited at around 2%.

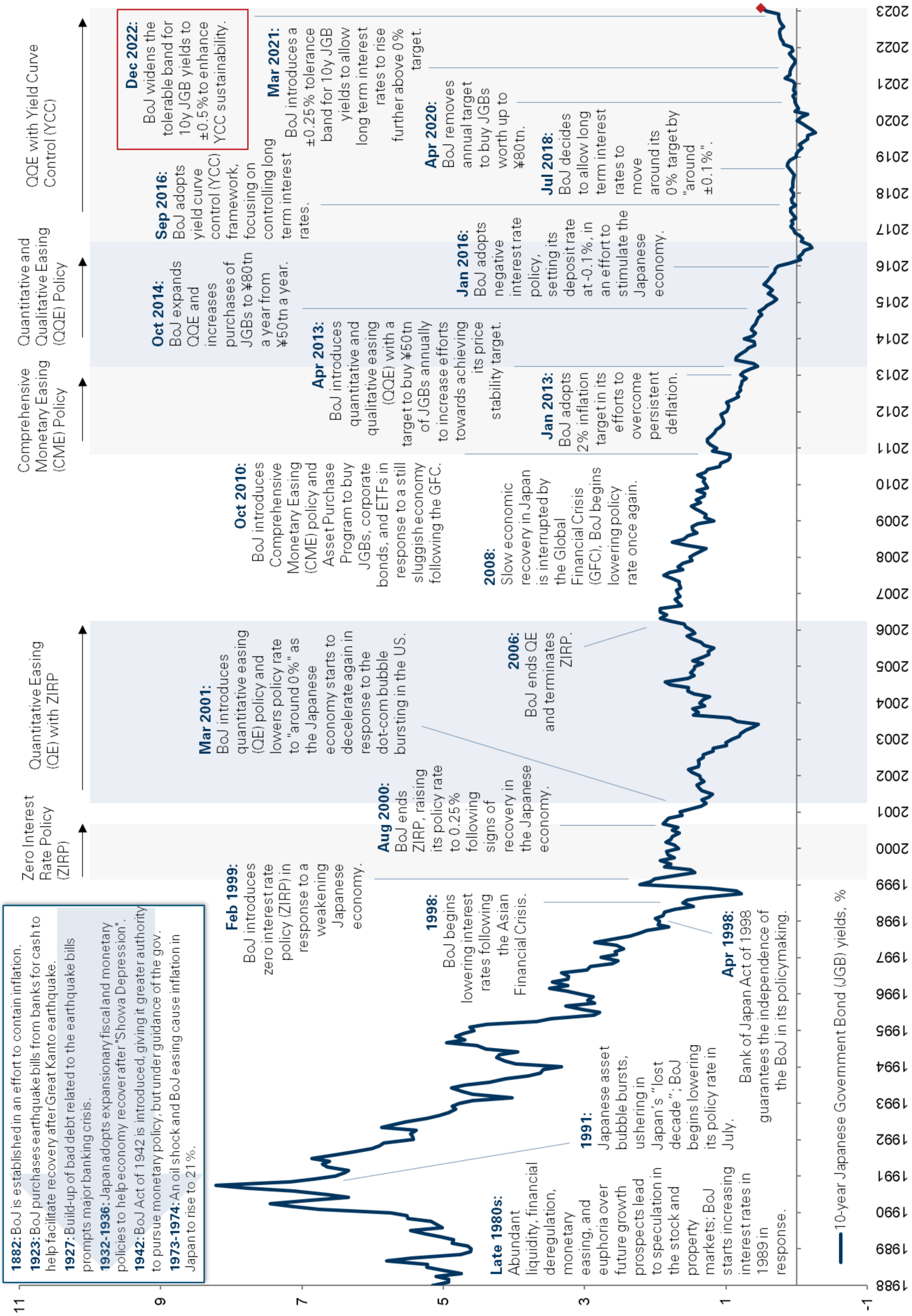
**Allison Nathan: How would the BoJ policy shift you expect, or a more significant shift, affect the economy?**

**Naohiko Baba:** We recently lowered our 2023 real GDP growth forecast to 1.1% on the back of the YCC adjustment we expect, which is still above trend growth for Japan. Generally speaking, a significant policy shift would entail tighter financial conditions stemming from higher interest rates, a stronger currency, and an equity market correction. Housing, construction, and real estate tend to suffer when rates rise, while higher rates are largely beneficial for the financial industry. A stronger currency hurts exporters, but is a tailwind for households, as it contains cost-push inflation. Equity corrections affect corporate sentiment, which could in turn weigh on capex, and could reduce consumer spending via the wealth channel, although the impact of this channel is small in Japan relative to other countries. Taken together, the net impact of a major policy shift, such as scrapping YCC altogether, would undoubtedly be negative.

**Allison Nathan: Are you concerned about financial stability issues if the BoJ abandons YCC/pursues normalization?**

**Naohiko Baba:** I am not particularly concerned about financial instability right now, especially if 10y JGB yields don't rise above 100bp as our strategists expect (see pgs. 16-17) because both financial and non-financial institutions have secured ample capital. While rising JGB yields will likely cause valuation loss, especially among regional banks, over the longer term a higher rate environment will improve net interest margins for most banks. So, on net, higher rates will likely be beneficial for them.

# History of 10y JGB yields

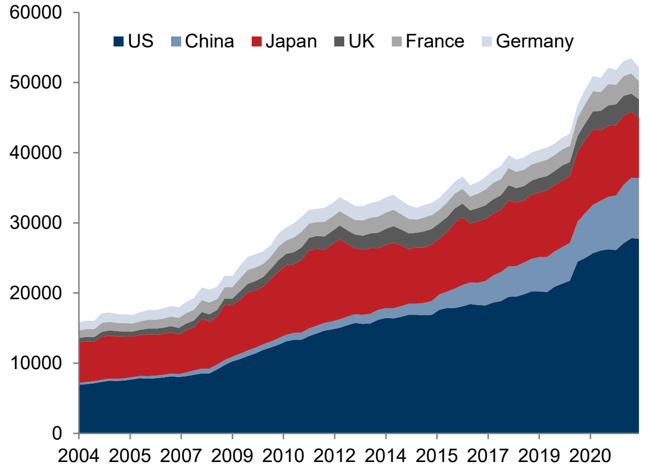



*Source: Bloomberg, BoJ, Reuters, various news sources, Goldman Sachs GIR.*

# JGB market in pics

**The JGB market is the third-largest sovereign bond market in the world…**

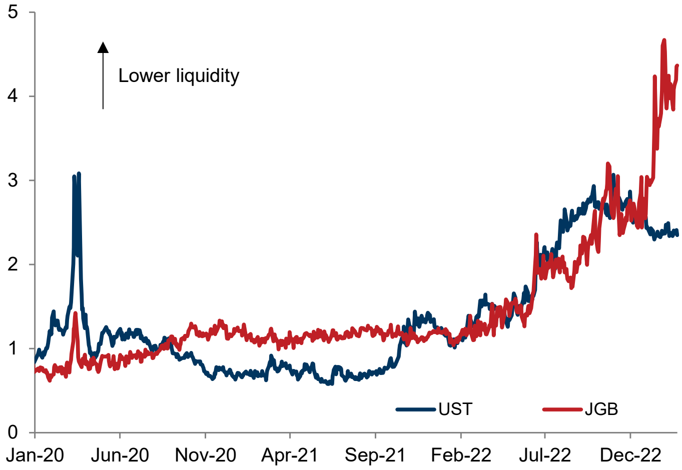
Government debt securities, $bn




*Source: Haver Analytics, Goldman Sachs GIR.*

**…but trading volumes are low and liquidity has been poor…**

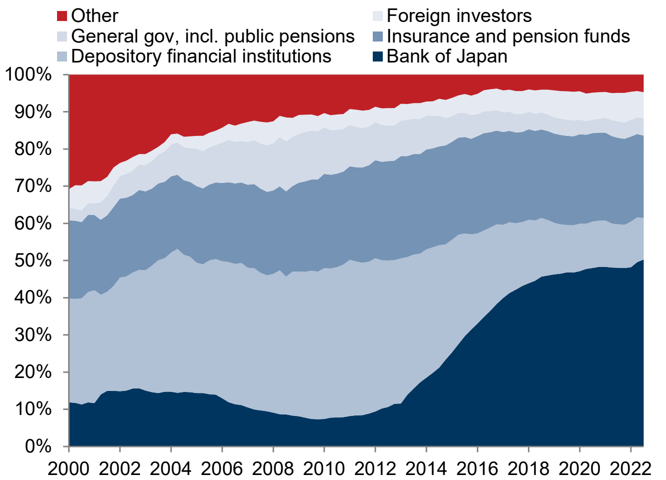
Bloomberg Government Securities Liquidity Index




*Source: Bloomberg, Goldman Sachs GIR.*

**…largely because the BoJ owns roughly 50% of the JGB market and around 95% of bonds are held domestically**

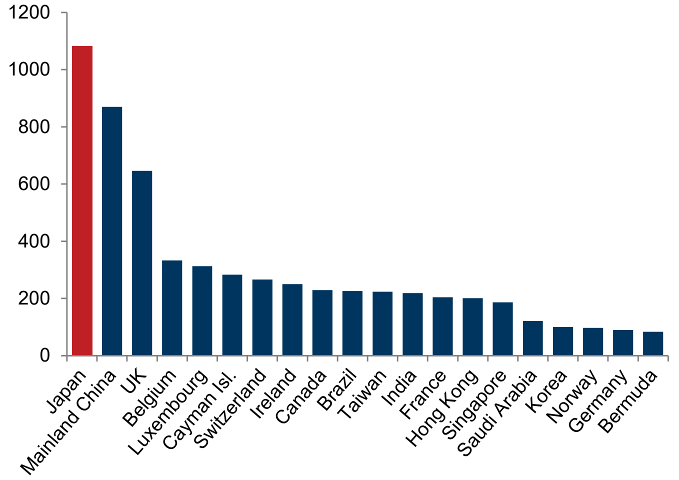
JGB outstanding by ownership, %




*Source: Goldman Sachs GIR.*

**Meanwhile, Japanese investors have been the biggest foreign investors into DM sovereign bond markets, including US Treasuries**

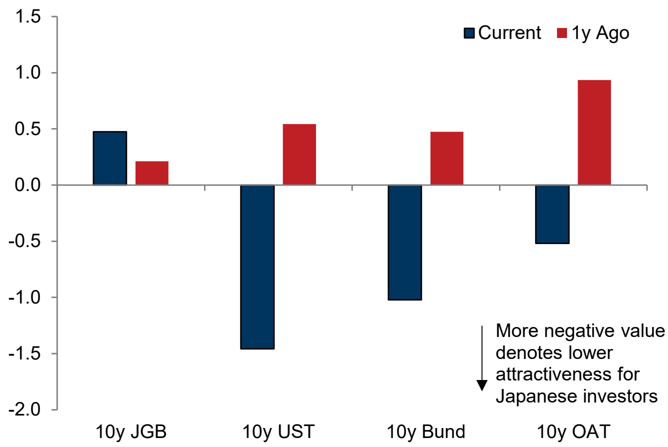
Major foreign holders of US Treasuries, $bn




*Source: Federal Reserve, Goldman Sachs GIR.*

**But more recently, foreign bonds have been relatively unattractive investments compared to JGBs as the cost of hedging FX exposure for a Japanese investor has gone up…**

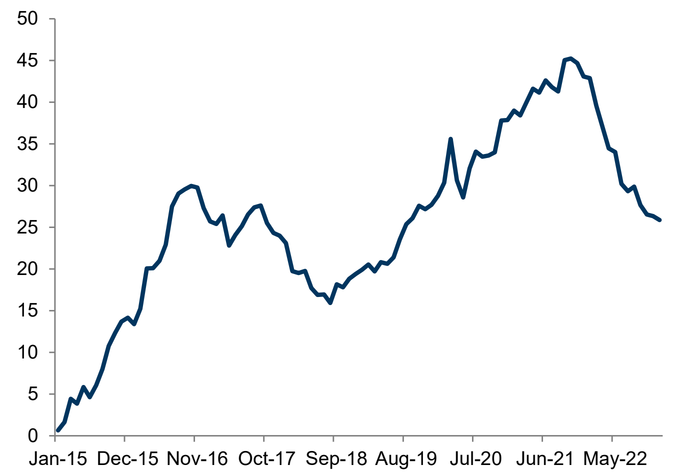
10y JGB yield compared to FX-hedged foreign bond yields for Japanese investors, %




*Note: FX-hedged yield assumes that JPY-based investor hedges their foreign currency risk by selling the foreign currency forward. Assumes 1y rolling hedge.*
*Source: Bloomberg, Goldman Sachs GIR.*

**…and Japanese investors have been net sellers of foreign bonds**

Cumulative net acquisition of USTs by Japanese investors since 2016, ¥tn




*Source: BoJ, Goldman Sachs GIR.*

# Interview with Praveen Korapaty

Praveen Korapaty is Chief Interest Rates Strategist at Goldman Sachs. He discusses the outlook for Japanese yields ahead of the upcoming BoJ leadership transition, and for bonds more broadly amid better global growth and the prospect of a slower but longer hiking cycle.

**Jenny Grimberg: The BoJ surprised markets in December by widening its yield curve control (YCC) band. We expect further shifts to YCC following the upcoming leadership transition. If our expectations play out, what would be the implications for JGB yields?**

**Praveen Korapaty:** Our economists expect the BoJ to abandon YCC at the 10y point and instead target 5y yields in 2Q23. In January, the BoJ introduced funds-supplying operations for maturities up to 10 years. These operations, which allow the private sector to borrow funds at low rates, are intended to enlist the private sector into certain arbitrage trades so as to cap yields. While the loans could in theory have a maturity of 10 years, in practice, the BoJ has been making loans up to five years, so it seems that the bank is testing a regime in which it controls the 5y rate as opposed to the 10y rate. If that were to happen, the BoJ would probably try to cap the 5y yield around 20-25bp, whereas the 10y yield, once it's uncapped, will be free to converge towards fair value, which we estimate is around 75-80bp. Factoring in a possible overshoot, we forecast 10y JGB yields will end 2023 at 90bp.

**Jenny Grimberg: If the BoJ were instead to abandon YCC completely, what would that mean for JGBs?**

**Praveen Korapaty:** Abandonment in the near term seems unlikely given the political backdrop and our economists' inflation expectations, but if such a policy shift were to occur, it could prove a bit more disruptive—2y and 5y JGBs would likely sell off alongside 10y JGBs. So, our 10y JGB forecast wouldn't change much, but the yield curve would be less steep.

**Jenny Grimberg: Even if the BoJ doesn't plan to abandon YCC in the near term, could the market force it to?**

**Praveen Korapaty:** That really comes down to two questions. The first is, how willing is the BoJ to tolerate bond market dysfunction? The ostensible reason behind the BoJ's decision to widen the tolerance band around its 10y JGB yield target in December was that market functioning had deteriorated, forcing the BoJ to act. I'm a bit skeptical about this explanation given that bond market functioning has been poor for a while; the BoJ effectively owns 50% of the market, and even though the Japanese bond market is the third-largest sovereign bond market in the world, trading volumes and liquidity are relatively low. So, the idea that the BoJ suddenly cares about bond market functioning is suspect.

The second—arguably more relevant—question is how much the government cares about what happens to the Yen. This is probably the real pressure point; the longer the BoJ maintains very accommodative monetary policy relative to the rest of the world, the more depreciation pressure the Yen will face. This is the classic trilemma of open economies—exchange rate stability, independent monetary policy, and free international capital flows cannot be achieved simultaneously, and if the latter two are being pursued, the only pressure valve is the currency, which will cheapen. The question is how much cheapening the government will tolerate; last's year currency intervention by the Ministry of Finance occurred when the Yen broke through the 145 line, suggesting that the uncomfortable zone is probably above 140. In my mind, this lies at the crux of the question of YCC sustainability.

**Jenny Grimberg: What would be the implications for global bond markets if YCC is suddenly abandoned?**

**Praveen Korapaty:** The short-run, or impulse, spillovers could be high; in the wake of the December move, 10y UST yields increased by around 65% of the 10y JGB yield move. But the long-run spillovers that would determine the equilibrium level of the exchange rate have historically been much lower; we've found that only 20% of JGB yield moves have spilled over into UST yields. Potential YCC shifts are really a red herring, though, partly because markets are already anticipating an exit from YCC. The potentially much bigger spillovers would come if the BoJ started to entertain rate hikes, which could have significant implications for bond flows.

Over the last decade, Japanese investors have been the biggest foreign investors in developed market foreign bonds, owning around ¥155tn of Dollar-denominated debt, ¥100tn of Euro-denominated debt, and 20-25% of the Australian government bond market. So, the loss of these buyers, or them turning active sellers, could significantly affect some of these markets. To be clear, until the start of this year, Japanese investors had already been divesting from foreign bonds, with net sales averaging around ¥2tn/month over the past year, as foreign bonds became unattractive on an FX-hedged basis due to other central banks' aggressive hiking campaigns. But markets have already adapted to this change in behavior.

That said, more acute liquidations could prove more disruptive. What could catalyze these? The liquidations so far have largely come from investors' *FX-hedged* portfolios. That's because even though the acquisition yield levels of foreign bonds were below current yield levels—meaning that investors were sitting with a loss in foreign currency terms—in domestic currency terms they weren't losses given how dramatically the Yen has cheapened. So, investors didn't feel the need to realize those "losses". If investors become concerned that BoJ shifts could rapidly strengthen the Yen, they may start to sell their *unhedged* portfolios while the trades can still be booked as profits. That could lead to a sharp and rapid selloff of foreign bonds, which could prove disruptive for foreign bond markets.

**Jenny Grimberg: Bond markets more broadly rallied heading into 2023. What drove that, and with the rally now having reversed, is the brief period of bond strength over?**

**Praveen Korapaty:** Besides a brief decline in JGB yields around the January BoJ meeting when the BoJ disappointed market anticipation of further steps towards policy normalization following the December surprise, the bullish impulse for global bonds at the start the year largely came from the US and Europe. In the US, concerns around the growth outlook and investor expectations of easier monetary policy later this year largely drove the rally. In Europe, inflation relief, mostly from lower energy prices, was the main driver of the decline in bond yields. That's not to say that positive inflation news wasn't also behind the US rally, but decomposing the rally into macro factors, we find that most of the easing of US inflation pressure shows up instead as policy easing. Bonds in both regions also benefitted from strong fund inflows, as many real money investors who were underweight bonds throughout most of 2022 have substantially closed those underweights.

We think this bullish impulse has now largely played out. While 10y UST yields are currently above our Q1 targets, we forecast that yields will rise to 4.2% by year-end as the market prices in stronger US activity data, and remain high throughout the next year, ending 2024 at 4.0%. We also expect 10y Bund yields to rise to 2.75% over 1H23 on the back of improving Euro area growth, which has yet to be fully priced into European bonds.

**Jenny Grimberg: The US growth outlook is improving, yet the yield curve is at its deepest level of inversion in over four decades. How do you square that, and what will it take for that inversion to moderate/dissipate?**

**Praveen Korapaty:** The inversion could reflect the fact that market pricing embeds a probability-weighted average of outcomes, so forward curves that embed some probability of recession could be inverted even if no recession is expected in the most likely or modal scenario. It could also reflect investor optimism about inflation—inflation markets are pricing a more rapid normalization of inflation than our economists or the Fed expect—which, if it plays out, would mean that policy rates could return to a lower setting.

That said, we find that a large part of current curve inversion comes from an assumption of low long run real rate levels. Investors appear to be wedded to the secular stagnation, low neutral rate view of the world from last cycle. We believe this is wrong; this cycle is different, and the economy can likely support a higher long run real rate than investors are currently assuming. As such, we think that the current extent of inversion is unlikely to persist. However, it will likely take some time to moderate. The market needs to observe that the economy can withstand higher rates without any cataclysmic consequences; only then will investors raise their long run/equilibrium rate expectations. On that point, the Fed has made its own life harder by leaving its long run nominal rate projection largely unchanged at 2.5% for the last year, which we suspect is too low; investors seem to place some weight on these projections when forming expectations.

**Jenny Grimberg: What's driving the relative optimism in inflation markets?**

**Praveen Korapaty:** At the front end, markets appear to be optimistic that the non-shelter/non-goods part of core inflation that is tied to wages is going to normalize relatively quickly, extrapolating the progress made thus far in other categories. While I wouldn't dismiss market pricing entirely, we disagree with the market's optimism, as the signs of disinflation in that part of the core inflation basket are still very tentative. Inflation markets are also optimistic at the long end, where they've been very reluctant to price any significant inflation risk premium. Pricing out that premium made sense when the Fed was hiking aggressively, and indeed the inflation risk premium priced into medium term forward rates declined as the Fed went from being behind the curve to catching up in 2022. But the Fed is now less aggressive, and our economists expect it to stop hiking after the June meeting. If the labor market is still tight then, rates may have to remain at elevated levels for longer than anyone is currently anticipating, and the Fed may even be forced to resume hiking. Right now, markets are really only pricing one side of the scenario distribution, which is that the Fed will cut rates starting in 2024. If the Fed is similarly biased—more willing to cut than hike—investors should price in a bit more inflation risk premium.

**Jenny Grimberg: After two years of negative returns on fixed income, how are you now thinking about the value proposition of fixed income in portfolios?**

**Praveen Korapaty:** On an absolute basis, the value proposition of owning bonds has undoubtedly improved. Bonds are yielding more than two years ago, and given that more space now exists for central banks to cut rates in a recession, bonds also have more insurance value, albeit not as much as investors may think given the structurally higher inflation environment. Nonetheless, bonds aren't offering enough risk premium, and longer-maturity yields still look too low relative to the underlying strength in the economy and to the equilibrium rates the economy can support. And as it becomes clearer that no recession is coming, the demand for such 'portfolio insurance' could fade. The better alternative is cash, which, unlike bonds that force investors to take on duration risk, is a completely risk-free asset. Cash also yields more—a money market account is probably earning close to the Fed funds rate. So, in a relative sense, bonds aren't a slam dunk, even if in an absolute sense their value proposition has increased.

**Jenny Grimberg: So, how should investors be positioned?**

**Praveen Korapaty:** Investors should probably buy bonds, but not fully close their underweights given our expectation that yields will move higher and our view that cash is better than bonds. Across the bond complex, while we're still structurally biased modestly short, we're somewhat neutral near term; we've closed most of our outright short recommendations, and the ones that remain aren't classic outright duration shorts but rather carry trades that we would expect to work in the event current rate cut pricing doesn't materialize.

**Jenny Grimberg: What risk to global bond markets this year are you most focused on?**

**Praveen Korapaty:** The biggest upside risk to bond markets will likely come from markets continuing to converge to our economists' relatively optimistic views on global growth. Unlike 2022, it's probably not central banks that will shock the markets into the repricing we expect, and the magnitude of the moves will likely be ~40bp rather than the >200bp moves of last year.

# Yen: US real rates still matter most

## Karen Fishman argues that greater BoJ flexibility should continue to support the Yen, but that US real rates will remain the more meaningful driver of Yen performance

The Japanese Yen outperformed most major currencies from early November 2022 through the first few weeks of 2023, largely driven by a combination of broad Dollar underperformance on softer-than-expected US inflation data and the BoJ's surprise tweak to yield curve control (YCC) last December. While we find that the increased likelihood of greater flexibility in BoJ policy skews the balance of risks towards further Yen appreciation, we believe that the path of US real rates and, relatedly, the odds of a US recession, will ultimately be the biggest driver of Yen performance.

### Greater BoJ flexibility…

Despite renewed Yen underperformance over the past month, which has been broadly consistent with our view, markets now generally see higher odds of a hawkish shift in BoJ policy this year, with roughly 20bp of *rate hikes* priced through 2023. Our own economists recently revised their forecast to now expect some form of adjustment to YCC, most likely a shift in the target maturity from the 10-year yield to the 5-year yield—though a complete exit cannot be ruled out (see pgs. 12-13). Indeed, the latest domestic economic data may argue for less extraordinary policy and the rising cost of maintaining YCC could favor abandoning it completely, as the RBA did at the end of 2021. While the recent nomination of Kazuo Ueda to BoJ governor suggests a low likelihood of a large imminent shift in policy, a reassessment of extraordinarily easy policy remains underway, and the upcoming joint accord discussions could still introduce greater flexibility around the BoJ's 2% inflation target.

### …skews the balance of risks in favor of the Yen

Under our baseline forecast of a soft landing in the US and no exit from YCC this year, we expect the Yen to face a bit more tactical downside pressure as US yields continue to rise and markets reflect lower odds of US recession, before strengthening again once the peak in US yields becomes clear. However, markets now appear to be applying the greatest odds to a scenario in which a US soft landing occurs alongside a materially hawkish BoJ policy shift, which would likely lend support to the Yen. This is one reason why we expect more range-bound performance in our base case of a further adjustment to YCC. Even if the BoJ makes another tweak to its current policy, this would be unlikely to significantly shift the market-implied odds of a complete exit from YCC and front-end rate hikes—as was the case after the last BoJ meeting. Alternatively, if the US enters a recession, the Yen should strengthen regardless of BoJ policy owing to safe-haven inflows and a narrower yield differential should the Fed respond with rate cuts. An accompanying hawkish BoJ shift would likely reinforce this move, leading to the most positive outcome for the Yen. But this combination seems unlikely as the BoJ would probably prefer to avoid a hawkish policy response to a US recession, particularly given the criticism it endured for hiking into past recessions in 2000 and 2007.

**The balance of risks still favors the Yen**

Expected JPY performance in scenarios of US economic cycle and BoJ policy

| | Dovish BoJ | Hawkish BoJ |
|---|---|---|
| US Soft-Landing | **Weaker JPY** (GS baseline*) | **Stronger JPY** (more likely combination) |
| US Recession | **Stronger JPY** (safe-haven inflows dominate) | **Stronger JPY** (less likely combination) |

**Tactical Yen depreciation can extend as US yields rise before seeing more sustained appreciation later on once peak rates are in sight and the market likely continues to test a BoJ exit.*

*Source: Goldman Sachs GIR.*

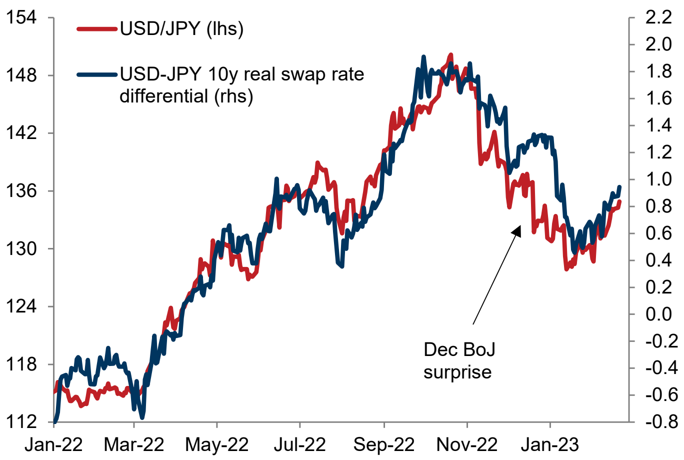
### …but appreciation would likely be limited

If the BoJ exits from YCC sooner than we expect, how much lower could USD/JPY go? We estimate that a 50bp narrowing in the 10-year real rate differential, all else equal, has typically translated to roughly 3% downside in USD/JPY. This finding is broadly consistent with recent price action—since the start of the year, the rate differential has narrowed by about 40bp and USD/JPY has fallen by roughly 2.5%. If we assume that an exit from YCC at an upcoming meeting narrows the gap by another 25bp (since the 10-year Japanese swap rate is already trading near our estimate of fair value for the 10-year JGB), our estimates imply another 1.5-2% of USD/JPY downside. If we also assume a slightly more sustained overshoot, USD/JPY could see another selloff of closer to 3% (and even greater losses in the days immediately thereafter).

That said, even if Japanese yields become more freely-determined this year on a more significant shift in BoJ policy, our expectation that US yields will rise further as the US avoids a recession should limit Yen appreciation in 2023. Given that, we see a bit more room for tactical Yen weakness (with potentially further runway as risks to Fed pricing remain skewed to the upside) before entering a more sustained period of modest Yen appreciation thereafter. Overall, our strongest conviction remains that, while BoJ policy is important, US rates have more "degrees of freedom," and we see little scope for significant Yen outperformance if US yields are moving higher.

**Rate differentials have been the main driver of USD/JPY**

USD/JPY (lhs), pp (rhs)




*Source: Bloomberg, Goldman Sachs GIR.*

**Karen Reichgott Fishman, Senior FX Strategist**

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# A virtuous cycle for Japan & its equities

## Bruce Kirk explores the impact of Yen appreciation on the Japanese equities market

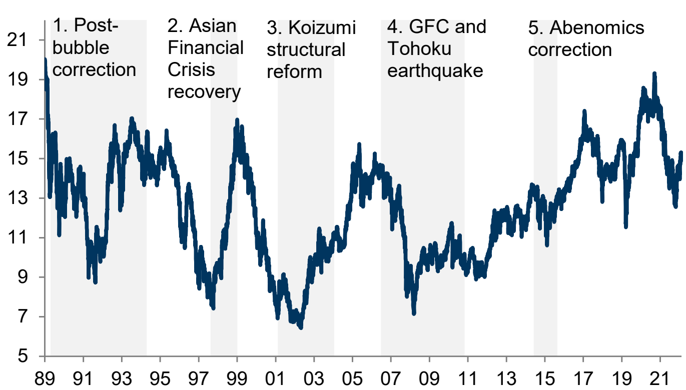
Amid the rising likelihood that the BoJ will begin to exit from its ultra-accommodative monetary policy, investors are increasingly expecting a period of Yen appreciation ahead. Despite our baseline expectation that the Yen won't appreciate until the peak in US rates becomes clear (see pg. 18), there is some risk that the Yen appreciates sooner. Here, we examine historical periods of Yen appreciation to assess the impact on the Japanese equities market, both at an index and sector level. We find that while Japanese equities tend to outperform in periods of Yen appreciation, global macro factors and domestic reform initiatives are the dominant drivers of performance.

### Lessons from historical periods…

Looking at historical periods of Yen strengthening, we find that in the five major periods of Yen appreciation—defined as peak-to-trough USD/JPY declines of more than 20%—since 1989, the TOPIX produced positive double-digit USD-denominated returns and outperformed the S&P 500 in three of the five periods, but significantly underperformed the S&P in the other two periods. In the periods of TOPIX outperformance, improving domestic growth and fiscal stimulus were seen alongside Yen appreciation—1992-1995 (post-bubble domestic fiscal stimulus), 1998-2000 (domestic fiscal stimulus and Asian Financial Crisis recovery), and 2002-2005 (Koizumi structural reform). In contrast, the two periods of TOPIX underperformance, 2007-2012 (Global Financial Crisis and Tohoku earthquake) and 2015-2016 (Abenomics correction), saw mounting growth concerns alongside Yen strength.

Despite this mixed performance, the mean USD-denominated return of 28% for TOPIX over these five periods comfortably exceeded the mean S&P and MSCI World ex-Japan returns of 16% and 14%, respectively. On a sectoral basis, somewhat surprisingly, export-related sectors tended not to underperform over these periods, as longer-term relative regional growth outlooks and/or sector-specific factors appeared to offset any near-term negative currency impact on overseas earnings.

USD-denominated TOPIX performance since 1989




*Source: Bloomberg, Goldman Sachs GIR.*

### …inform positioning for a stronger Yen…

Given these findings, we outline how investors should be positioned in three possible Yen-strengthening scenarios over the next 12 months, assuming the cautious and gradual move away from yield curve control (YCC) and ultra-accommodative monetary policy that our economists expect (see pgs. 12-13).

1. **Base case (global soft landing)**: In our base case scenario, which assumes a global soft landing, we would expect Cyclicals to outperform Defensives as any fears of weaker Yen-based earnings should be more than offset by lower global recession concerns. Among domestic demand sectors, liquid Financials are likely to see the most interest due to a potential normalization of Japanese monetary policy. We would also expect export-related blue-chips and Japanese companies with significant geographic exposure to the highest growth economies to outperform.
2. **Bull case (global soft landing + domestic corporate reform)**: In our bull case scenario, which assumes a combination of real wage growth, rising domestic capex, and corporate governance reform alongside a global soft landing, we would expect a far broader rally across the Japanese equities market. We think companies with inefficient capital structures and low returns or valuations would outperform, together with export-related blue-chips and liquid Financials. We would also expect a significant uptick in foreign investor inflows, which is likely to focus initially on large, liquid quality names along with some clear domestic beneficiaries.
3. **Bear case (global hard landing + domestic stagflation)**: In our bear case scenario, which assumes the BoJ normalizes its monetary policy while the global economy moves towards recession and Japanese inflation remains high, we would expect Defensive sectors such as Consumer Staples, Telcos, and Pharma to outperform the broader Japanese market. Moreover, it is likely that Japanese corporates would push back against political pressure to raise wages and shareholder returns, which could, in turn, lead to a continued exodus of foreign investors and reduced levels of buybacks.

Scenario analysis screens and implementation ideas

| Scenario | Screens and Implementation Ideas |
|---|---|
| Base Case | Foreign favorites; liquid financials; China inbound beneficiaries; Cyclicals over Defensives |
| Bull Case | Foreign favorites; liquid financials; China inbound beneficiaries; listed shareholdings, liquid value, Cyclicals over Defensives |
| Bear Case | Defensives over Cyclicals |

*Source: Goldman Sachs GIR.*

### …and imply an improving outlook for Japanese equities

All that said, we believe that for TOPIX to outperform the S&P in USD terms, positive expectations of domestic structural reform or policy action needs to be part of the story that attracts net foreign inflows. Under our current baseline forecast, we expect positive net investor inflows on the back of a better global growth outlook leading to an improving outlook for Japanese equities. We also think the recent accelerated push for corporate governance reform in Japan will facilitate domestic wage growth and improve shareholder returns, leading to a virtuous cycle of rising prices, wage growth, and financial asset income growth, the likes of which Japan has not seen in four decades.

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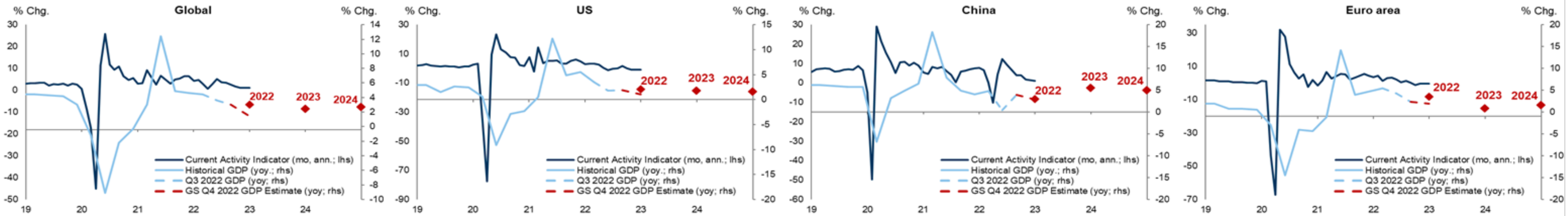
# Summary of our key forecasts

## Watching

- **Globally,** we expect annual average GDP growth to slow to 2.4% in 2023 as central bank policy remains restrictive, although we expect growth to accelerate in the second half of the year, reflecting diminishing drags from tighter financial conditions and the energy crisis, and a stronger growth impulse from China's reopening. While we expect China's reopening will lead to a moderate boost to headline inflation in most economies, we think that the combination of a moderation in demand growth, improvements in goods supply, and tighter monetary policy will be sufficient to bring inflation back toward DM central banks' targets over the next two years.
- **In the US,** we expect GDP growth to slow to 1.7% in 2023, reflecting a negative impulse from tighter financial conditions. We see a below-consensus 25% probability of entering a recession over the next year due to progress on labor market rebalancing and a diminishing drag from fiscal and monetary policy tightening. We expect core PCE inflation to decline to 3.1% by end-2023, reflecting an easing in supply chain constraints, a peak in shelter inflation, and slower wage growth, although we expect progress on wage growth to be more gradual than disinflation from core goods and shelter. We expect the unemployment rate to increase slightly to 3.6% by end-2023 and remain there through 2025.
- **We expect the Fed** to deliver 25bp hikes in March, May, and June for a peak funds rate of 5.25-5.5% as we estimate the Fed needs to keep growth below potential for a while longer to further rebalance the labor market.
- **In the Euro area,** we expect GDP growth to slow to an above-consensus 0.8% in 2023, reflecting historically elevated energy prices driven by the war in Ukraine and we see a 40% probability that the Euro area enters a recession over the next year. We expect core inflation to fall gradually to 3.3%yoy by the end of 2023 as easing supply chain pressures and indirect pass through from falling energy and food prices are slightly offset by higher wage prices.
- **We expect the ECB** to deliver a 50bp hike in March and 25bp hikes in May and June for a terminal rate of 3.5%, reflecting strong growth, continued labor market resilience, sticky services inflation, and recent hawkish ECB communication. On balance sheet policy, we expect the ECB to stop reinvestments completely after June, when the APP run-off of €15bn per month starting in March ends.
- **In China,** we expect real GDP growth to accelerate to an above-consensus 6.5%yoy in Q4 2023, driven by China's post-reopening recovery and further aided by policymakers' refocus on growth, although uncertainties remain around the path of household consumption and the shape of the property sector recovery this year.
- **WATCH CHINA REOPENING, INFLATION, AND US DEBT LIMIT**. China's bumpy reopening is a key source of upside risk to global growth as well as commodity prices in 2023, which could worsen inflationary pressures elsewhere and make the challenge of taming inflation without a recession even more difficult for central banks. In the US, we believe that raising the debt limit this year could rival the disruptive 2011 debt limit episode, but that Congress will ultimately raise the debt limit before Treasury is forced to delay scheduled repayments, which we would expect in early to mid-August.

*Goldman Sachs Global Investment Research.*

## Growth




*Source: Haver Analytics and Goldman Sachs Global Investment Research.*
*Note: GS CAI is a measure of current growth. For more information on the methodology of the CAI please see "Lessons Learned: Re-engineering Our CAIs in Light of the Pandemic Recession," Global Economics Analyst, Sep. 29, 2020.*

## Forecasts

**Economics**

| GDP growth (%) | 2023 GS (Q4/Q4) | 2023 GS (CY) | 2023 Cons. (CY) | 2024 GS (CY) | 2024 Cons. (CY) |
|---|---|---|---|---|---|
| Global | 2.7 | 2.4 | 2.4 | 2.7 | 2.9 |
| US | 1.2 | 1.7 | 0.7 | 1.6 | 1.2 |
| China | 6.5 | 5.5 | 5.2 | 5.0 | 5.0 |
| Euro area | 0.8 | 0.8 | 0.4 | 1.6 | 1.2 |

| Policy rates (%) | 2023 GS | 2023 Mkt. | 2024 GS | 2024 Mkt. |
|---|---|---|---|---|
| US | 5.38 | 5.23 | 4.63 | 4.35 |
| Euro area | 3.50 | 3.68 | 3.25 | 3.34 |
| China | 2.00 | 1.90 | 2.00 | 2.22 |
| Japan | -0.10 | 0.16 | -0.10 | 0.28 |

**Markets**

| Interest rates 10Yr (%) | Last | E2023 | E2024 |
|---|---|---|---|
| US | 3.93 | 4.20 | 4.00 |
| Germany | 2.47 | 2.75 | 2.25 |
| Japan | 0.51 | 0.90 | 0.75 |
| UK | 3.60 | 4.00 | 3.75 |

| FX | Last | 3m | 12m |
|---|---|---|---|
| EUR/$ | 1.06 | 1.02 | 1.10 |
| GBP/$ | 1.21 | 1.15 | 1.22 |
| $/JPY | 135 | 132 | 125 |
| $/CNY | 6.87 | 6.80 | 6.50 |

| Commodities | Last | 3m | 12m |
|---|---|---|---|
| Crude Oil, Brent ($/bbl) | 81 | 90 | 100 |
| Nat Gas ($/mmBtu) | 2.17 | 3.50 | 3.30 |
| Copper ($/mt) | 9,103 | 9,500 | 11,000 |
| Gold ($/troy oz) | 1,836 | 1,850 | 1,950 |

| Credit (bp) | | Last | 2Q23 | 4Q23 |
|---|---|---|---|---|
| USD | IG | 123 | 117 | 115 |
| | HY | 423 | 400 | 390 |
| EUR | IG | 164 | 150 | 145 |
| | HY | 429 | 415 | 405 |

**Equities**

| S&P 500 | E2023 GS | E2023 Cons. | E2024 GS | E2024 Cons. |
|---|---|---|---|---|
| Price | 4,000 | -- | -- | -- |
| EPS | $224 | $223 | $237 | $246 |
| Growth | 1% | 0% | 5% | 11% |

| Returns (%) | 12m | YTD | E2023 P/E |
|---|---|---|---|
| S&P500 | 0.0 | 5.0 | 18.3x |
| MXAPJ | 19.0 | 3.0 | 13.5x |
| Topix | 11.0 | 4.0 | 13.2x |
| STOXX600 | 3.0 | 9.0 | 13.1x |

| Consumer | 2023 CPI (%, yoy) | 2023 Unemp. Rate | 2024 CPI (%, yoy) | 2024 Unemp. Rate | Wage Tracker 2022 (%) Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|---|---|---|---|
| US | 4.3 | 3.6 | 2.7 | 3.6 | 5.6 | 5.7 | 5.7 | 5.2 |
| Euro area | 5.5 | 6.8 | 2.6 | 6.7 | -- | -- | -- | -- |
| China | 2.2 | -- | 2.2 | -- | -- | -- | -- | -- |

*Source: Bloomberg, Goldman Sachs Global Investment Research. For important disclosures, see the Disclosure Appendix or go to www.gs.com/research/hedge.html.*

**Market pricing as of February 23, 2023.**

# Glossary of GS proprietary indices

## Current Activity Indicator (CAI)

GS CAIs measure the growth signal in a broad range of weekly and monthly indicators, offering an alternative to Gross Domestic Product (GDP). GDP is an imperfect guide to current activity: In most countries, it is only available quarterly and is released with a substantial delay, and its initial estimates are often heavily revised. GDP also ignores important measures of real activity, such as employment and the purchasing managers' indexes (PMIs). All of these problems reduce the effectiveness of GDP for investment and policy decisions. Our CAIs aim to address GDP's shortcomings and provide a timelier read on the pace of growth.

*For more, see our CAI page and Global Economics Analyst: Trackin' All Over the World – Our New Global CAI, 25 February 2017.*

## Dynamic Equilibrium Exchange Rates (DEER)

The GSDEER framework establishes an equilibrium (or "fair") value of the real exchange rate based on relative productivity and terms-of-trade differentials.

*For more, see our GSDEER page, Global Economics Paper No. 227: Finding Fair Value in EM FX, 26 January 2016, and Global Markets Analyst: A Look at Valuation Across G10 FX, 29 June 2017.*

## Financial Conditions Index (FCI)

GS FCIs gauge the "looseness" or "tightness" of financial conditions across the world's major economies, incorporating variables that directly affect spending on domestically produced goods and services. FCIs can provide valuable information about the economic growth outlook and the direct and indirect effects of monetary policy on real economic activity.

FCIs for the G10 economies are calculated as a weighted average of a policy rate, a long-term risk-free bond yield, a corporate credit spread, an equity price variable, and a trade-weighted exchange rate; the Euro area FCI also includes a sovereign credit spread. The weights mirror the effects of the financial variables on real GDP growth in our models over a one-year horizon. FCIs for emerging markets are calculated as a weighted average of a short-term interest rate, a long-term swap rate, a CDS spread, an equity price variable, a trade-weighted exchange rate, and—in economies with large foreign-currency-denominated debt stocks—a debt-weighted exchange rate index.

*For more, see our FCI page, Global Economics Analyst: Our New G10 Financial Conditions Indices, 20 April 2017, and Global Economics Analyst: Tracking EM Financial Conditions – Our New FCIs, 6 October 2017.*

## Goldman Sachs Analyst Index (GSAI)

The US GSAI is based on a monthly survey of GS equity analysts to obtain their assessments of business conditions in the industries they follow. The results provide timely "bottom-up" information about US economic activity to supplement and cross-check our analysis of "top-down" data. Based on analysts' responses, we create a diffusion index for economic activity comparable to the ISM's indexes for activity in the manufacturing and nonmanufacturing sectors.

## Macro-Data Assessment Platform (MAP)

GS MAP scores facilitate rapid interpretation of new data releases for economic indicators worldwide. MAP summarizes the importance of a specific data release (i.e., its historical correlation with GDP) and the degree of surprise relative to the consensus forecast. The sign on the degree of surprise characterizes underperformance with a negative number and outperformance with a positive number. Each of these two components is ranked on a scale from 0 to 5, with the MAP score being the product of the two, i.e., from -25 to +25. For example, a MAP score of +20 (5;+4) would indicate that the data has a very high correlation to GDP (5) and that it came out well above consensus expectations (+4), for a total MAP value of +20.

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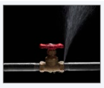

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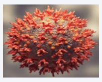

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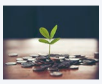

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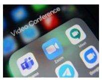

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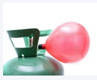

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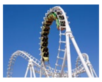

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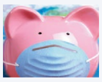

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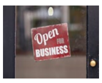

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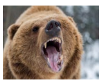

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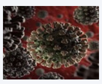

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