GS Retirement & Investment Solutions

Public Pension Quarterly | 1Q 2023

CLAWING BACK

WHAT'S INSIDE

1. QUARTERLY SNAPSHOT

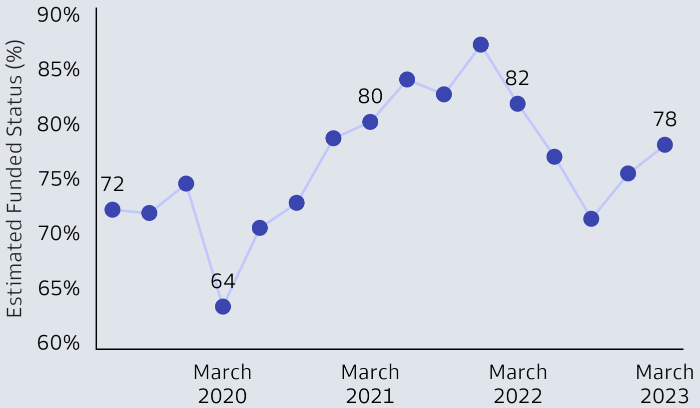
Market Performance[1]

Asset Class/Index	1Q Change	YTD Change
S&P 500	7.5%	7.5%
MSCI EAFE	8.7%	8.7%
MSCI EM	4.0%	4.0%
Bloomberg US Agg	3.0%	3.0%
Real Estate	1.5%	1.5%
Hedge Funds	0.0%	0.0%
10Y Treasury Yield	-41 bps	-41 bps

Source: Goldman Sachs Asset Management. As of March 31, 2023.

- Global equity markets moved higher in the first quarter as the Fed inched closer towards the end of its hiking campaign. Non-US developed market equities outperformed, bolstered by a warmer winter in Europe, earlier-than-expected reopening in China, and weaker US dollar.
- In the US, first quarter earnings proved to be better-than-feared. Specifically, consensus expected a -7% S&P 500 EPS decline, year-over-year, with latest estimates tracking for just a -3% decline. Markets continued to prioritize balance sheet strength amid a tightening credit backdrop.
- Fixed income markets also stabilized as the market softened monetary policy expectations for 2H 2023, especially in response to financial sector stress. Higher starting yield levels drove a rebound in the US Agg.

Historical Aggregate Funded Status[2]



Source: Boston College Center for Retirement Research and Goldman Sachs Asset Management. As of March 31, 2023. Funded status reflects estimated asset returns and liability growth.

- We estimate returns for public pension plans were 4.7% in the first quarter of 2023, which helped to boost the aggregate funded status of the system to 78% as of the end of 1Q 2023. While this represented a 3-percentage point increase during the quarter, it is still below the level from 1Q 2022.

Source: Goldman Sachs Asset Management. As of March 31, 2023. The economic and market forecasts presented herein have been generated by Goldman Sachs Asset Management for informational purposes as of the date of this document. They are based on proprietary models and there can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this document. 1. Figures represent total returns. Real estate performance represented by Dow Jones Global Select Real Estate Index. Hedge fund performance represented by HFRX Global Hedge Fund Index. 2. Sample reflects approximately $3 trillion in total assets across over 130 US state and local plans in the Boston College Center for Retirement Research public pension dataset. **Past performance does not guarantee future results, which may vary.** "Fed Pivot" refers to the end of a hiking cycle, i.e., when the Federal Reserve reaches its peak Fed Funds Rate for the cycle.

2. IN THE NEWS

Pension Industry Updates

NASRA Highlights Continuing Decline in Return Assumptions

- The National Association of State Retirement Administrators (NASRA), in a March 2023 Issue Brief, noted that the average public pension plan investment return assumption declined again in fiscal year 2023 to 6.93%.
- While some corporate pension plans have recently been raising their return assumption in light of higher interest rates and upwardly revised capital market assumptions for many asset classes, public plans have continued to lower their forecasts.
- NASRA's Issue Brief noted that some public pension plans have put in place systematic policies to reduce the return assumption either due to actual results exceeding expectations or simply due to the passage of time. This has likely played a role in the average return assumption continuing to decline.

City of Chicago Makes Voluntary Advance Pension Payment

- In early January, the City of Chicago made a $242 million voluntary pension payment to the City's four pension funds. This follows the City making actuarially determined contributions in 2022.
- Changes to the City's pension contribution policies have played a role in rating agency upgrades and outlook changes over the past year.

Notable Pension Plan Updates

Many public pension plans remain focused on building out their allocation to private market securities. Nonetheless, 2022's financial market volatility has resulted in some plans seeing their actual allocation to these positions exceed strategic targets due to the denominator effect. We highlight below certain recent actions taken by some plans with respect to their allocations to private markets.

- At its January 2023 Board of Trustees meeting, the Ohio Public Employees Retirement System (OPERS) approved a new 1% allocation to Private Credit in conjunction with an overall increase to Alternatives. The increase in the allocation to Alternatives resulted in a decrease to both public equity and fixed income targets.
- In February 2023, the Massachusetts Pension Reserves Investment Management (Mass PRIM) Board increased its target allocation to Private Equity by 1 percentage point. Unlike other institutional investors grappling with actual allocations to private assets in excess of strategic targets given the denominator effect, Mass PRIM's private equity allocation remains within its allowable range which enabled it to effectuate the increase.
- At its February 2023 Investment Committee meeting, the Maryland State Retirement and Pension System discussed its actual weighting to Private Equity of 21.6% being in excess of its policy target of 16%. Consequently, the Committee discussed lowering the pace of annual commitments to this asset class.

Portfolio updates highlighted here represent actions taken by large public plan sponsors that we believe would be of interest to readers.

3. MARKET PERSPECTIVES

In our spring edition of Perspectives, Elizabeth Burton, Client Investment Strategist at Goldman Sachs Asset Management, discusses the various challenges CIOs face in the current volatile investing environment and potential solutions to address these hurdles.

Elizabeth Burton
Client Investment Strategist
Client Solutions Group
Goldman Sachs Asset Management

How big an issue are the numerator and denominator effects for CIOs, and how are they addressing them?

The numerator and denominator effects have been a frustrating recent hurdle in portfolio construction, particularly for investors with tight strategic asset allocation (SAA) policies and narrow tolerance band limits around those policies. We've seen some Limited Partners adjusting their policies to allow for additional leeway, but this has left CIOs with challenges pacing investments into private markets and, in a bind, being forced to raise liquidity—especially for pensions with high payout ratios of 2% or more. The problem is most acute for those with large, mature allocations to private equity and/or low allocations to real assets and private credit. In nearly all cases teams have initially endeavored to work with stakeholders (i.e., boards and consultants) to tackle these short-term constraints by adding wider tolerance bands or by shifting asset allocation targets. Other considerations being discussed include portfolio lines of credit, collateralized financing, portfolio realignment, leverage, and cash flow matching.

How are investors evaluating committing capital to new funds vs. preserving liquidity?

CIOs are taking the intermittent liquidity, which is being returned through redemptions, distributions, or public markets rebounding and recommitting to private markets and, in some instances, liquid alternatives. On the former, we are seeing 50% haircuts to re-ups with existing partners and a rationing of key relationships. From an SAA angle, many CIOs are considering starting a real asset program if one isn't already in place, or alternatively increasing the commitment to real assets as an inflation hedge. We believe it is important for investors to spend more time in foreign markets, given the heightened interest in single-country funds in both public and private markets and the opportunities for alpha ex-US arising from China's reopening, diverging central bank policies, deglobalization and geopolitical tensions.

How are investors thinking about and measuring liquidity, and the spectrum of liquidity? Where do things get uncomfortable?

While most investors have liquidity on hand, they do not tend to think of their public markets portfolios as liquidity providers – potentially because it is difficult to rely on something that can experience 30% drawdowns for liquidity. There has been heightened focus around augmenting efficiency in public markets and allocating to more cash-efficient strategies, but for many stakeholders this is a long educational period resulting in slower implementation.

In an environment like this, where prior experience may not be a perfect guide, what characteristics will help CIOs to successfully navigate their portfolios and teams?

I cannot emphasize enough the value of building a personal board of directors; whether it's through your staff, your internal board, or your external managers, make sure you are seeking out a variety of voices. The synergy that comes from diversity of thought is invaluable. This is like building an athletic team – every recruit should not bring the same strengths to the table, and they should lean into their strengths when investing. If a team is excellent at assessing co-investments in credit, lean into that niche and seek opportunities there. If a portfolio has excellent cash management, leverage that and be nimble. If there is no obvious advantage in any one asset class, then leverage the global partners that do have a sustainable, repeatable edge in those markets.

This is also an ideal environment to leverage external partnerships to outsource talent across a broad spectrum – investment analysis, investment advice, staffing, human resources, logistics, organizational restructuring, general consulting, etc. Now more than ever, it is critical to start and maintain dialogue with investors spanning the globe. Lastly, leveraging technology often requires up-front time, attention, and resources, but has a very high potential return on investment (ROI) and can lead to exponential rewards in the long run.

Source: Goldman Sachs Asset Management. Perspectives. As of April 2023.

4. SUMMARY OF TACTICAL ASSET CLASS VIEWS

		Underweight	Neutral	Overweight
EQUITY	US			●
	Euro Area		●	
	Japan		●	
	UK		●	
	Australia		●	
	Canada		●	
	Emerging Markets		●	
CURRENCY	US Dollar		●	
	Euro		●	
	Japanese Yen		●	
	British Pound		●	
	Australian Dollar		●	
	Canadian Dollar		●	
	Chinese Renminbi		●	
REAL ASSETS	Commodities		●	
	Public Real Estate		●	
	Public Infrastructure		●	
FIXED INCOME (FI)	US Government Fixed Income		●	
	German Government Fixed Income (Bunds)		●	
	Japanese Government Fixed Income		●	
	UK Government Fixed Income (Gilts)		●	
	Australian Government Fixed Income		●	
	Canadian Government Fixed Income		●	
	EM Debt Local (EMDL)		●	
	EM Debt USD		●	
	IG Corporate Bonds		●	
	HY Corporate Bonds		●	

Source: Investment Strategy Group. Asset class views as of May 2023. This material represents the views of the Investment Strategy Group ("ISG") and is part of the Asset & Wealth Management Segment of Goldman Sachs and is not a part of Goldman Sachs Global Investment Research ("GIR"). Information and opinions expressed by individuals other than Goldman Sachs employees do not necessarily reflect the view of Goldman Sachs. Goldman Sachs does not provide accounting, tax or legal advice to its clients. It was not prepared in compliance with applicable provisions of law designed to promote the independence of financial analysis and is not subject to a prohibition on trading following the distribution of financial research. The views and opinions expressed herein may vary significantly from those expressed by Goldman Sachs Asset Management or any other groups at Goldman Sachs. Investors are urged to consult with their financial advisers before buying or selling any securities. The information contained herein should not be relied upon in making an investment decision or be construed as investment advice. Goldman Sachs Asset Management has no obligation to provide any updates or changes.

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We engage with institutional investors, combining our insight and analytics with investment products, to help clients solve complex asset and risk management challenges. Whether evaluating portfolio construction, broader plan design questions or investment strategies, Goldman Sachs Asset Management has the resources and capabilities to help you assess, develop or manage a defined benefit strategy.

Who We Are

We are tenured strategists, investors, former actuaries and counselors that offer unbiased advice and customized solutions for defined benefit plans and defined contribution programs.

Analytics

Investment analytics to help plans monitor and assess plan performance and risk position.

Asset Management

Growth Portfolio Optimization
Guidance on strategies to potentially enhance risk-adjusted returns in growth portfolios

Equity Risk Mitigation
Reshape the distribution of equities designed to provide downside preservation with upside participation

Risk Management
Assist plans in maximizing return on free cash, as well as strategically managing for future cash flow needs

Partnership

Advisory and discretionary offering to help plans with strategic asset allocation, manager research and selection, portfolio monitoring and rebalancing and administrative support.

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6. LIBRARY

GSAM Perspectives
April 20, 2023

Investing in a High-Risk World

Investing in a High-Risk World

GSAM Perspectives
April 20, 2023

All About Alpha: Portfolio Construction in a New Reality

All About Alpha: Portfolio Construction in a New Reality

GSAM Insights
March 22, 2023

Labor and Inflation from Top to Bottom

Labor and Inflation From Top to Bottom

Source: Goldman Sachs Asset Management. Screenshots are for illustrative purposes only.

APPENDIX: TACTICAL ASSET CLASS VIEWS

		Underweight	Neutral	Overweight	
EQUITY	US			●	**Positive.** We recommend remaining fully invested at one's strategic weight in US equities given last year's price correction that at its low matched the median recessionary decline despite an ongoing economic expansion, but we are mindful of risks—particularly a US recession, rising geopolitical tensions, inflation and hawkish central banks. On a sector level, we prefer MLPs in the energy space given ongoing capital discipline and significant cash flow generation at cheap valuations, in addition to overweighting Utilities relative to Commercial and Professional Services given more attractive relative valuations and fundamentals in a below-trend growth environment.
	Euro Area		●		**Neutral.** Although the Eurozone has been more resilient than expected, we expect that the broader global growth slowdown should lead to weak Eurozone EPS growth this year. On the other hand, despite the YTD rally, Eurozone multiples remain meaningfully below their pre-covid levels. Moderate valuations could both limit downside in the near-term and allow for positive returns as Europe economic growth accelerates later this year. At the sector-level, we are Positive on European Energy, which should benefit from still elevated oil prices, low valuations, and double-digit shareholder returns.
	Japan		●		**Neutral.** Attractive valuations, low foreign investors positioning, and slowing but above-trend GDP growth should allow Japanese equities to post positive returns this year. A more rapid or forceful tightening of monetary policy by the Bank of Japan (BoJ) as other central banks reach the end of their tightening cycle represents a key downside risk for Japanese equities.
	UK		●		**Neutral.** We expect UK earnings to contract in 2023 driven by weaker global growth, as well as fading tailwinds relative to 2022 from commodity prices and sterling. The substantial derating of UK equities last year and their resulting low valuations should provide some downside buffer and drive positive returns once economic worries subside.
	Australia		●		**Neutral.** The easing of China's Covid restrictions should provide a tailwind to Australian equities. However, Australian equities' valuations relative to other non-US developed equities remain elevated despite some recent improvements. In addition, the US-China geopolitical tensions remain a headwind.
	Canada		●		**Neutral.** Canadian equities benefited from their high exposure to commodities in 2022 as well as from a weakening Canadian dollar with a third of revenues coming from the US. However, valuation relative to non-US equities remains above-average while the currency benefit is fading.
	Emerging Markets		●		**Neutral.** Doubts about the strength of China's post-reopening recovery, declining commodity prices, and US-China tensions have weighed on EM equities this year, causing them to extend their underperformance relative to DM. We see only modest upside through the end of the year, and as a result continue to recommend a tactically neutral allocation at this time.

Source: Investment Strategy Group. Asset class views as of May 2023. This material represents the views of the Investment Strategy Group ("ISG") and is part of the Asset & Wealth Management Segment of Goldman Sachs and is not a part of Goldman Sachs Global Investment Research ("GIR"). Information and opinions expressed by individuals other than Goldman Sachs employees do not necessarily reflect the view of Goldman Sachs. Goldman Sachs does not provide accounting, tax or legal advice to its clients. It was not prepared in compliance with applicable provisions of law designed to promote the independence of financial analysis and is not subject to a prohibition on trading following the distribution of financial research. The views and opinions expressed herein may vary significantly from those expressed by Goldman Sachs Asset Management or any other groups at Goldman Sachs. Investors are urged to consult with their financial advisers before buying or selling any securities. The information contained herein should not be relied upon in making an investment decision or be construed as investment advice. Goldman Sachs Asset Management has no obligation to provide any updates or changes.

		Underweight	Neutral	Overweight	
CURRENCY	US Dollar		●		**Neutral.** Relative strength of the US economy, an expectation that the Federal Reserve will raise the policy rate to a level that is higher relative to peers, and modest investor positioning should keep the dollar in balance.
	Euro		●		**Neutral.** Euro currency headwinds are beginning to recede as Eurozone activity begins to recover and the ECB tightens monetary policy more rapidly relative to expectations at the beginning of the year.
	Japanese Yen		●		**Neutral.** The risks around the yen are now more balanced after its rapid recovery raises the possibility that market participants will be disappointed by the pace of monetary policy normalization under new BoJ leadership.
	British Pound		●		**Neutral.** The pound will find incremental support from higher-than-expected domestic inflation and activity which may push the BOE to tighten monetary policy more than anticipated.
	Australian Dollar		●		**Neutral.** Demand for the Australian dollar will depend on the durability around China's reopening following the lifting of Covid restrictions. On the other hand, market participants are positioned for further currency weakness which raises the odds that fresh upside surprises push the Australian dollar higher.
	Canadian Dollar		●		**Neutral.** The BoC's recent signaling that it will pause raising borrowing costs is a key headwind for the Canadian dollar. Still, Canada's labor market remains robust which could lead to an eventual higher terminal rate and support for the currency later this year.
	Chinese Renminbi		●		**Neutral.** After recouping some of its previous losses following the end of Zero-Covid, the renminbi has been relatively stable at around 6.90. However, depreciation pressures remain in place: (a) interest rate differentials remain in favor of the US Dollar. (b) export growth is expected to decelerate throughout 2023 as global demand slows, (c) the current account is expected to deteriorate as tourism outflows resume.
REAL ASSETS	Commodities		●		**Neutral.** The oil market continues to face a number of offsetting factors. On the downside, the rebound in COVID cases in China threatens to derail the reopening of the economy and further propagate the virus, while risks of recessions in the US and Europe could also weaken oil demand. On the upside, however, production cuts by OPEC, the tightening of sanctions on Russia, and the tapering of Strategic Petroleum Reserves releases threaten to tip the market back into a supply deficit. As a result, we expect prices to remain rangebound, albeit with somewhat more upside than downside within a $70-$110 range. In other markets, the risks of an industrial recession in Europe and the real estate crisis in China remain a headwind to metal prices.
	Public Real Estate		●		**Neutral.** Slowing demand, potential tenant bankruptcies, and a deteriorating financing environment for the asset class pose challenges. While Real Estate Investment Trust (REIT) valuation is in line with equities, they are attractive relative to fixed income. Consequently, we remain neutral on the sector.
	Public Infrastructure		●		**Neutral, but overweight MLPs.** Overweight midstream due to positive fundamentals and capital discipline. MLPs trade at a valuation one standard deviation below their long-term average, while also producing a 7.0% distribution yield that is well defended by cash flows. It also trades at a 6.5% free cash flow yield post distributions and capex, which is around 3% higher than the S&P 500. We are also overweight C-corporation midstream.

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		Underweight	Neutral	Overweight	
FIXED INCOME (FI)	US Government Fixed Income		●		**Neutral.** With markets pricing a very steep hiking cycle and inflation gradually normalizing, the hurdle is high for significant further increases in yields. Elevated recession odds further support for clients to remain invested at their strategic allocation to high-quality fixed income.
	German Government Fixed Income (Bunds)		●		**Neutral.** We expect the German 10Y to trade within a range. While headline inflation has likely peaked, core inflation remains persistent, which warrants further monetary policy tightening. We expect the ECB to end its hiking cycle at 3.75% in July.
	Japanese Government Fixed Income		●		**Neutral.** The market continues to push 10-year JGB yields to the upper end of the target band at 0.5%. We believe the BoJ is likely to adjust its highly accommodative policy stance, although the timing of this adjustment remains uncertain. The BoJ may end its yield curve control policy in the second half of 2023 and raise the policy rate to 0% from -0.10% at present. A more aggressive tightening of monetary policy seems unlikely as trend inflation is still not firmly at the BoJ's 2% target.
	UK Government Fixed Income (Gilts)		●		**Neutral.** Inflation is likely past its peak. While we expect it to moderate throughout 2023, the deceleration will be gradual with the year-end print still well above 2%. Consequently, the BoE will need to hike rates further into restrictive territory, reaching a terminal rate of 4.75% in the first half of 2023.
	Australian Government Fixed Income		●		**Neutral.** The RBA surprised by hiking the cash target rate by 25bp at the May meeting after pausing in April. The forward guidance was softened slightly but it still indicated that some further tightening of monetary policy may be required. As the RBA continues to see inflation as still too high and unit labor costs rising briskly, we believe it may deliver another 25bp hike before pausing in H2 2023.
	Canadian Government Fixed Income		●		**Neutral.** The BoC has been on hold since raising the policy rate to 4.5% in January. We think it is likely to remain on hold through the end of 2023, but the risks appear to be tilted towards additional tightening as inflation is still elevated and the labor market remains tight. Governor Macklem has pushed back against market pricing of rate cuts later this year.
	EM Debt Local (EMDL)		●		**Neutral.** EM Local Debt could benefit this year as inflation moderates, especially if central banks begin easing cycles and fiscal policies remain prudent, keeping yield curves anchored. Our cautious optimism on EMLD is reflected on our mid-single digit EMLD total return forecast for 2023, which also reflects EMLD's 6.8% yield net of the 1.5% drag we expect from currency depreciation and 0.4% positive contribution from duration.
	EM Debt USD		●		**Neutral.** As the market shifts its focus from high inflation to slower growth in 2023, we believe that spreads are likely to face more pressure than they did last year. The drag from wider spreads this year should be more than offset by EMD's yield and a positive contribution from duration.
	IG Corporate Bonds		●		**Neutral.** We would expect IG corporate bonds to return mid single digit returns in 2023, driven by a moderate decline in treasury yields offset by a slight increase in credit spreads. Spreads at 146 bps are 10 bps wider than long term medians, but we expect only moderate widening in spreads and not a large widening due to healthy starting fundamentals. Since treasuries offer slightly higher returns than IG, we are currently neutral.
	HY Corporate Bonds		●		**Neutral HY Bonds and Leveraged Loans, Prefer HY to Loans.** Although HY spreads at 471 bps (May 11) are about 137 bps tighter than loan spreads at 608 bps, we think that differential is warranted due to several weaker fundamental factors in loans vs. HY – such as more ratings downgrades than upgrades, higher share of loan only issuers and low hedging of interest rate risk by loan issuers. We expect HY to return +6% in 2023 versus +4.0% for bank loans, which is why we prefer high yield bonds to bank loans on the margin.

Source: Investment Strategy Group. The Investment Strategy Group ("ISG") is part of the Consumer and Wealth Management Division of Goldman Sachs and is not a part of Goldman Sachs Global Investment Research or Goldman Sachs Asset Management. Information and opinions expressed by individuals other than Goldman Sachs employees do not necessarily reflect the view of Goldman Sachs. Goldman Sachs does not provide accounting, tax or legal advice to its clients. Asset class views as of May 11, 2023. Views expressed are for informational purposes only and do not constitute a recommendation by Goldman Sachs Asset Management to buy, sell, or hold any security. Views and opinions are current as of the date of this document and may be subject to change, they should not be construed as investment advice. The economic and market forecasts presented herein are for informational purposes as of the date of this document. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this document.

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Equity securities are more volatile than bonds and subject to greater risks. Small and mid-sized company stocks involve greater risks than those customarily associated with larger companies.

Bonds are subject to interest rate, price and credit risks. Prices tend to be inversely affected by changes in interest rates.

High yield fixed income securities are considered speculative, involve greater risk of default, and tend to be more volatile than investment grade fixed income securities.

Investments in foreign securities entail special risks such as currency, political, economic, and market risks. These risks are heightened in emerging markets.

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Bloomberg US Aggregate Bond Index represents an unmanaged diversified portfolio of fixed income securities, including US Treasuries, investment grade corporate bonds, and mortgage backed and asset-backed securities.

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