Why lower risk doesn’t have to mean lower returns

A multi-asset approach to liability-aware investing

October 2016

IN BRIEF

A liability-aware framework differs fundamentally from conventional liability-driven investing approaches. While conventional strategies divide pension plan assets into “hedge” and “growth” buckets, liability-aware considers the return potential and risk contribution of each asset in the context of the total investment portfolio. We believe this framework leads to better plan outcomes by generating portfolios that exhibit lower surplus risk and higher expected returns than conventional pension portfolios.

- Liability-aware diversifies the investment portfolio by extending the opportunity set; it incorporates high yield, real estate and private credit, among other asset classes.
- Liability-aware is flexible and dynamic, allowing for reallocation not only as a plan progresses along a liability-driven glidepath, but also as market conditions and sponsor circumstances change.
- By considering each investment holistically, liability-aware addresses the largest sources of funding risk simultaneously: equity risk and the duration mismatch between a plan’s assets and its liability.
- When warranted, liability-aware can use leverage to further contain risk and add additional value through opportunistic investments and asset allocation tilts.

WE BELIEVE RE-THINKING CONVENTIONAL LIABILITY-DRIVEN INVESTING (LDI) IN A MULTI-ASSET FRAMEWORK CAN ULTIMATELY LEAD TO BETTER PLAN OUTCOMES. This liability-aware investment approach dynamically balances the drivers of surplus risk against the drivers of returns, responding to changing market conditions and plan circumstances in a total portfolio context.

Conventional LDI, by contrast, allocates a portion of plan assets to track and hedge a portion of the pension liability and the balance to a “return-seeking” portfolio for plan growth. As plan funded status improves in a typical glidepath structure, plans reallocate assets from the growth-seeking to the liability-hedging portfolio—trading off the need for downside protection against the need for returns in two distinct portfolios. We recommend an integrated approach that joins the diversification of risk assets with efficient management of the liability hedge to offer protection to the downside without sacrificing growth, rather than mechanistically bucketing assets as either strictly “risk-reducing” or “return-seeking.” Instead, we believe that every investment should be viewed as both risk-reducing and return-seeking.
WHY LOWER RISK DOESN’T HAVE TO MEAN LOWER RETURNS

THE BALANCING ACT

Basic portfolio theory tells us that asset allocation is the largest single driver of returns and that a higher return can be achieved per unit of risk through diversification (as illustrated by an efficient frontier, which plots a path that minimizes projected volatility for a mix of assets across a range of targeted return). Applied to pension portfolios, the theory suggests that plan sponsors evaluate all asset allocation decisions and underlying fund managers in terms of both risk and return characteristics—rather than viewing any investment as either return-enhancing or risk-reducing. This is the essence of the liability-aware approach.

Using a total portfolio framework, the approach seeks to strike a balance between the drivers of return and the primary sources of surplus risk: the total level of equity risk first and, second, the duration mismatch between a fund’s liability and its assets (EXHIBIT 1). The approach extends the pension opportunity set by investing in asset classes that have lower surplus risk than equities and higher expected returns than traditional fixed income. These can include publicly traded high yield and opportunistic credit. Moving beyond the public markets, portfolios may incorporate private credit, real estate and targeted hedge fund exposures that deliver excess returns with a high degree of confidence.

DIVERSIFYING RISK ASSETS

In EXHIBIT 2A, we compare projected returns for the actual average pension allocation as reported in Russell 3000® 10K filings as of December 31, 2015 and projected returns for a Multi-Asset Solutions (MAS) Policy portfolio, based on public market risk and return projections developed in J.P. Morgan Asset Management’s 2016 Long-Term Capital Market Assumptions.

EXHIBIT 1: PORTFOLIO CONSTRUCTION THAT BALANCES RETURNS WITH SURPLUS RISK

Drivers of surplus risk
- Duration mismatch to liability
- Level of equity risk

Drivers of returns
- Asset allocation
- Active risk
- Leverage
- Illiquidity premiums
- Opportunistic investing

Diversifying risk assets allows for higher expected total returns and lower surplus volatility, driven by:
- Reduction of equity risk
- Growth portfolio diversification
- Higher manager alpha expectations in alternative asset classes
- Illiquidity premiums
- Investment in low volatility “cash plus” strategies

EXHIBIT 2A: EXPANDING THE OPPORTUNITY SET TO BUILD OPTIMAL PORTFOLIOS

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>Average pension*</th>
<th>MAS Policy portfolio</th>
<th>MAS Active Flexible portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core fixed income</td>
<td>6.25–7.50</td>
<td>7.00–7.75</td>
<td>8.00–8.75</td>
</tr>
<tr>
<td>Long bond physicals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hedge funds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real estate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private credit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extended credit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private equity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public equity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected volatility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected surplus</td>
<td>8.20</td>
<td>7.41</td>
<td>6.41</td>
</tr>
<tr>
<td>Hedge ratio</td>
<td>36.42</td>
<td>65.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Probability of 3Y funding below 80%</td>
<td>10</td>
<td>5</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

SUMMARY STATISTICS (%)

EXHIBIT 2A: EXPANDING THE OPPORTUNITY SET TO BUILD OPTIMAL PORTFOLIOS

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>Average pension*</th>
<th>MAS Policy portfolio</th>
<th>MAS Active Flexible portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core fixed income</td>
<td>6.25–7.50</td>
<td>7.00–7.75</td>
<td>8.00–8.75</td>
</tr>
<tr>
<td>Long bond physicals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hedge funds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real estate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private credit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extended credit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private equity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public equity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected volatility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected surplus</td>
<td>8.20</td>
<td>7.41</td>
<td>6.41</td>
</tr>
<tr>
<td>Hedge ratio</td>
<td>36.42</td>
<td>65.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Probability of 3Y funding below 80%</td>
<td>10</td>
<td>5</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

*Asset allocation and return data are based on Russell 3000® company 10Ks and data from Bloomberg L.P.; data as of March 31, 2016. Diversified hedge fund data is proxied by HFRI Fund Weighted Composite Index. Real estate returns are estimated based on average one-year rolling REIT returns.

Source: J.P. Morgan Asset Management. Hypothetical model statistics are shown for illustrative purposes only. It should not be assumed that actual managed portfolios will generate similar results. The hypothetical model statistics are based on the 2016 Long-term Capital Market Assumptions.

1 For an explanation of the methodology and assumptions behind Exhibits 2A and 2B, please refer to the Appendix, “Rethinking pension portfolio benchmarks.”
A third portfolio, the MAS Active Flexible portfolio, models a sample target implementation of a liability-aware portfolio with a broader opportunity set. Not only does the Active Flexible portfolio boast a higher expected total return, it benefits from lower surplus and asset volatility. Among other things, this means the Active Flexible portfolio is about one-tenth as likely as the average Russell 3000® pension portfolio to experience a deterioration in funding status from its current 85% to below 80%—a level low enough to trigger plan sponsor contributions—in an adverse market over the next three years and only one-fifth as likely as the Policy portfolio.

EXHIBIT 2B depicts the drivers of risk and return for the Policy and Active Flexible portfolios. The Policy portfolio derives its return from three asset classes: equities, first and foremost; long duration bonds; and high yield. The Active Flexible portfolio more than compensates for the reduced contribution of public equities to its returns by its gains from diversifying into private equity, real estate, hedge funds and private credit.

The diversification advantage shows up even more emphatically in funded status volatility. In both the Policy portfolio and the Active Flexible portfolio, publicly traded fixed income serves to suppress surplus volatility, with leverage in the form of Treasury futures contributing an extra degree of moderation to the Active Flexible portfolio. In short, the goal of reducing equity risk is achieved through the addition of extended asset classes.

EFFICIENTLY MANAGING THE HEDGE

Having reduced the Active Flexible portfolio’s equity risk, our analysis turns to the other major (and more often considered) driver of surplus risk: the duration mismatch of plan assets to the plan’s liability. Exchange-traded Treasury futures targeting a portion of the hedge could reduce the duration mismatch, and do so without sacrificing potential returns. Because futures require only a minimal cash outlay, using them to add duration avoids allocating capital to low-returning fixed income. In other words, futures perform a dual role. Besides trimming the duration mismatch, they free up capital to build a more robust total portfolio.

The use of futures does entail leverage, but leverage in this case is not used to magnify the returns (and increase the volatility) of any asset. It serves rather to manage total portfolio and funded status risk. Applied in this manner, leverage can reduce surplus risk not only by reducing the duration mismatch but also by funding strategies to enhance diversification and reduce equity risk.

As a portfolio construction tool, leverage enables a more flexible and creative implementation of views to budget surplus risk. The Active Flexible portfolio, for instance, could fund a position in diversifying risk assets, such as private credit, from long-duration fixed income on a duration-neutral basis by using leverage. That strategy would amplify surplus risk benefits rather than magnifying expected returns of the asset class on a standalone basis.

Despite its efficiency, leverage can, of course, ultimately add variability to asset returns, even as it moderates surplus risk. In a rising rate environment, this can be particularly costly. So while leverage may fund diversifying investments on a duration-neutral basis, plans can also fund investments in a manner that keeps total portfolio leverage at a constant level. Indeed, if the Active Flexible portfolio has significantly lower projected surplus volatility than the Policy portfolio—thanks to its diversification away from equity risk—it has no need to take on excess leverage to target measured surplus volatility.

EXHIBIT 2B: EXPANDING THE OPPORTUNITY SET ALLOWS FOR HIGHER EXPECTED RETURNS AND LOWER SURPLUS VOLATILITY

Source: J.P. Morgan Asset Management. Hypothetical model statistics are shown for illustrative purposes only. It should not be assumed that actual managed portfolios will generate similar results. The hypothetical model statistics are based on the 2016 Long-term Capital Market Assumptions.
IN CONCLUSION

Treating pension management as an investment challenge—managing the asset portfolio to minimize the effect of a pension's total projected surplus volatility on its funded status, instead of concentrating exclusively on the hedge ratio of the pension's assets—should lead to more durable portfolio construction, superior investment returns within a narrower range of potential results and, ultimately, better plan outcomes. As a useful tool for developing a dynamic de-risking plan, the liability-aware decision framework balances rather than isolates the drivers of funding risk.

The framework stakes out the guideposts of required rates of return and acceptable levels of surplus volatility at each decision point along a dynamic glidepath. Plan sponsors can then re-evaluate returns required along the glidepath against the risk budget and resulting Policy portfolio benchmark they imply. The liability-aware framework thus adapts to changes in plan circumstances, whether arising from shifts in funded status, changes to the liability or external corporate events. By combining risk asset diversification with efficient hedging, the plan can seize on market dislocations throughout the pension lifecycle to generate growth while seeking to protect against downside risks and unexpected contributions.

APPENDIX: RETHINKING PENSION PORTFOLIO BENCHMARKS

A liability-aware framework measures active risk vs. the pension liability at the total portfolio level:

- It takes as its primary benchmark the liability, or a liability proxy, for the total portfolio.

- It defines active risk in terms of surplus volatility—as either funded status volatility against the pension’s liability or as the dollar-weighted tracking error against a comparably diversified index of public market returns.

Based on plan circumstances, the framework can solve for a required return that reaches its end state objectives—in our model, attaining a funded status surplus over a 10- to 15-year horizon. Plan sponsors can then determine a surplus risk budget that minimizes the probability of the negative outcome—whether defined as any decline in funded status, the need to make contributions for underfunded plans or falling below the plan’s surplus for well-funded plans.

In our model we assume that a typical underfunded plan (~85% funded, with an annual projected liability growth of 4.5%) requires an average annual return of 7.25% to achieve a funded surplus over the next 15 years. We define a negative outcome for the plan as simply any required contributions a plan sponsor might have to make—in practical terms, a decline in funded status below 80% over the next three years. If the plan sponsor wants the probability of the negative outcome to be less than 5%, the portfolio would have a maximum surplus risk budget of around 8.5% with which to achieve the 7.25% return.

Under the liability framework, the primary performance benchmark for the total portfolio is the 4.5% annual growth of the liability. In order to target an information ratio around 0.4-0.5 (a generally respectable outcome), the portfolio investment strategy should seek a 2% to 4% excess returns above the growth of the liability, while limiting surplus (or funded status) volatility to between 6% and 8%.

A Policy portfolio invested 60% global equities and 40% long duration fixed income almost meets the requirements, with around 7.0% expected returns and 9.0% surplus volatility, based on J.P. Morgan’s 2016 Long-Term Capital Markets Assumptions. A more diversified portfolio consisting of 58% equity, 12% public credit and 30% long duration fixed income projects a 7.25% return on a risk budget of 8.50% without assuming any additional sources of alpha. For reference, this can serve as the secondary benchmark for the total model portfolio, the Policy portfolio, by combining projected public market returns expected to meet our risk parameters over the long term.
Important disclosures

J.P. Morgan Asset Management Long Term Capital Market Assumptions: Given the complex risk-reward trade-offs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations. Please note that all information shown is based on qualitative analysis. Exclusive reliance on the above is not advised. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise of future performance. Note that these asset class and strategy assumptions are passive only—they do not consider the impact of active management. References to future returns are not promises or even estimates of actual returns a client portfolio may achieve. Assumptions, opinions and estimates are provided for illustrative purposes only. They should not be relied upon as recommendations to buy or sell securities.

NOT FOR RETAIL DISTRIBUTION: This communication has been prepared exclusively for institutional/wholesale/professional clients and qualified investors only as defined by local laws and regulations.

The views contained herein are not to be taken as an advice or a recommendation to buy or sell any investment in any jurisdiction, nor is it a commitment from J.P. Morgan Asset Management or any of its subsidiaries to participate in any of the transactions mentioned herein. Any forecasts, figures, opinions or investment techniques and strategies set out are for information purposes only, based on certain assumptions and current market conditions and are subject to change without prior notice. All information presented herein is considered to be accurate at the time of writing, but no warranty of accuracy is given and no liability in respect of any error or omission is accepted. This material does not contain sufficient information to support an investment decision and it should not be relied upon by you in evaluating the merits of investing in any securities or products. In addition, users should make an independent assessment of the legal, regulatory, tax, credit, and accounting implications and determine, together with their own professional advisers, if any investment mentioned herein is believed to be suitable to their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. It should be noted that investment involves risks, the value of investments and the income from them may fluctuate in accordance with market conditions and taxation agreements and investors may not get back the full amount invested. Both past performance and yield may not be a reliable guide to future performance.

J.P. Morgan Asset Management is the brand for the asset management business of JPMorgan Chase & Co. and its affiliates worldwide. This communication is issued by the following entities: in the United Kingdom by JPMorgan Asset Management (UK) Limited, which is authorized and regulated by the Financial Conduct Authority; in other EU jurisdictions by JPMorgan Asset Management (Europe) S.a.r.l.; in Hong Kong by JF Asset Management Limited, or JPMorgan Funds (Asia) Limited, or JPMorgan Asset Management Real Assets (Asia) Limited; in India by JPMorgan Asset Management India Private Limited; in Singapore by JPMorgan Asset Management (Singapore) Limited, or JPMorgan Asset Management Real Assets (Singapore) Pte Ltd; in Taiwan by JPMorgan Asset Management (Taiwan) Limited; in Japan by JPMorgan Asset Management (Japan) Limited, which is a member of the Investment Trusts Association, Japan, the Japan Investment Advisers Association, Type II Financial Instruments Firms Association and the Japan Securities Dealers Association and is regulated by the Financial Services Agency (registration number “Kanto Local Finance Bureau (Financial Instruments Firm) No. 330”); in Australia to wholesale clients only as defined in section 761A and 761G of the Corporations Act 2001 (Cth) by JPMorgan Asset Management (Australia) Limited (ABN 55143832080) (AFSL 376919); in Brazil by Banco J.P. Morgan S.A.; in Canada by JPMorgan Asset Management (Canada) Inc., and in the United States by JPMorgan Distribution Services Inc. and J.P. Morgan Institutional Investments, Inc., both members of FINRA/SIPC.; and J.P. Morgan Investment Management Inc.

Copyright © 2016 JPMorgan Chase & Co. All rights reserved.