RETURN REQUIREMENTS FOR DB PLAN PORTFOLIOS

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UNDERSTANDING LIABILITY-RELATIVE RETURN NEEDS

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Return requirements for DB plan portfolios: Understanding liability-relative return needs

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Plan sponsors should understand their plans' liability-relative return requirements to choose the most appropriate strategic asset allocation. Through this exercise, sponsors come to recognize "hurdle rates" that need to be achieved through investment return. Depending on objectives and circumstances, return needs for DB plans can vary significantly – from a fully funded, frozen DB plan needing returns as low as 4% to 5% per year, to an underfunded, open/ongoing plan with return needs in the double digits that are unlikely to be achieved by investment returns alone. That said, return needs should also be balanced with other plan sponsor considerations, such as funding policies and surplus risk management objectives.

In this paper, we break down the liability-relative return components for DB plans and provide a few examples of how these translate into specific DB return needs.

Liability-relative return needs

Interest cost

This is the cost of the passage of time. At the most basic level, liabilities are the present value of expected future benefit payments. As future benefits come closer to being paid, liabilities increase (all else equal) due to the reduced need for discounting. In the short term and for illustrative purposes, the current discount rate can act as a proxy for the return needed to cover interest cost, although this rate will change over time.

Service cost

This is the cost of new benefits. Liabilities increase each year by service cost for current participants that continue to accrue benefits. For a plan closed to new entrants, this amount tends to decrease over time as participants terminate or retire. For a frozen plan (where no current participants are actively accruing benefits), the service cost is zero.[i]

Benefit payment drag

Underfunded plans have a smaller relative asset base to make benefit payments than fully funded plans do. This generally leads to a declining funded status percentage after benefit payments are paid. A simple example is to consider a plan with $3 in assets and $4 in liabilities, which would have a funded ratio of 75%. If this plan paid out $1 in benefits,[ii] assets would be $2 and liabilities would be $3, resulting in a 67% funded ratio, an 8% drop. The opposite effect holds for overfunded plans – paying out benefit payments can *increase* funded ratio. Note that benefit payment drag can have a severe effect on underfunded plans that engage in risk transfer transactions, as a relatively large portion of assets may be paid out all at once, accelerating the loss in funded ratio.

In this paper, we break down the liability-relative return components for DB plans and provide a few examples of how these translate into specific DB return needs.

Expenses

It is common (although not universal) for DB plan sponsors to pay for plan expenses from plan assets. These expenses include Pension Benefit Guaranty Corporation (PBGC) premiums, service provider fees (e.g., actuary, auditor, administrator, etc.) and investment-related fees. PBGC premiums can be significant and can vary depending on the plan's headcount (for flat rate premiums) and funded position (for variable rate premiums).

Uncertainty

DB liabilities are estimates, and every year the plan actuary refines these estimates as part of their actuarial valuation. This valuation leads to actuarial losses or gains (i.e., plan liabilities end up higher or lower than expected). To build in a buffer for this uncertainty, some sponsors plan for an annual liability loss for conservatism. This amount is subjective in nature but may offer a more complete picture for possible return needs.

Funded status improvement

For an underfunded plan, additional return may be needed to improve the funded status percentage over time. The level of this component depends on the current funded position, and the desired time over which to fully fund the plan (e.g., seven years). Note that if the plan liabilities are growing, but the funded status percentage remains the same, then the funding deficit (in dollar terms) will increase.

Contribution offset

The required return (i.e., hurdle rate) for many underfunded plans will be prohibitively high if they depend on asset returns alone. Therefore, we may offset required return needs with contributions expected to be paid (e.g., minimum required contributions).

Exhibit 1 summarizes each liability-relative required return component, its applicability and a typical range for this component. The range is shown in terms of funded ratios in percentage terms, rather than funding deficit in dollar terms.

Exhibit 1 summarizes each liability-relative required return component, its applicability and a typical range.

Exhibit 1: Summary of return components

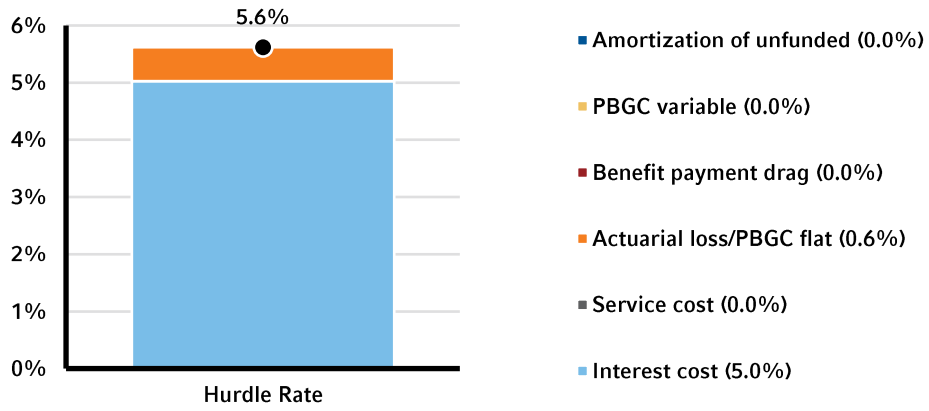
COMPONENT	APPLIES TO	TYPICAL RANGE[iii]
Interest cost	All DB plans	3.0 – 6.0%
Service cost	Non-frozen plans	3.0 – 5.0% (open) 1.0 – 5.0% (closed) 0% (frozen)
Benefit payment drag	Underfunded plans[iv]	0.0 – 2.0%
Expenses	Sponsors that pay expenses out of plan assets	0.0 – 0.5%
Uncertainty	All DB plans	0.0 – 0.5%
Funded ratio improvement	Underfunded plans	0.0 – 5.0%
Contribution offset	Sponsors that pay contributions[v]	Varies

Illustrative examples

Exhibits 2 and 3 provide two examples of liability-relative return decompositions. **Exhibit 2** is for a 100% funded frozen DB plan (assets = liabilities = $100 million) with no contributions being paid. **Exhibit 3** shows an 80% funded open plan (assets = $80 million; liabilities = $100 million) with an ongoing contribution policy.

Example of a fully funded frozen plan

Exhibit 2: 100% funded, frozen DB plan



The risk management objective in this scenario would most likely be to maintain their fully funded position.

The example in **Exhibit 2** – a fully funded frozen DB plan – is straightforward. The plan has no service cost, no PBGC variable rate premium and no return or contribution needed to become fully funded. Most of the required return is for interest cost, plus some additional return for PBGC flat rate premiums and other expenses/uncertainty. This sums up to a 5.6% liability-relative return requirement. Alternatively, the sponsor could choose to pay for expenses outside of plan assets, which would lower the required return amount.

This required return would be higher if the sponsor were trying to achieve an overfunded position, as may be desired for a sponsor hoping to terminate the plan.

In constructing the asset allocation for this example, the required return of 5.6% indicates that only a small portion of return-seeking assets is needed, and most assets (80%+) can be allocated to liability-hedging fixed income to balance return needs with risk management objectives. The risk management objective in this scenario would most likely be to maintain the plan's fully funded position.

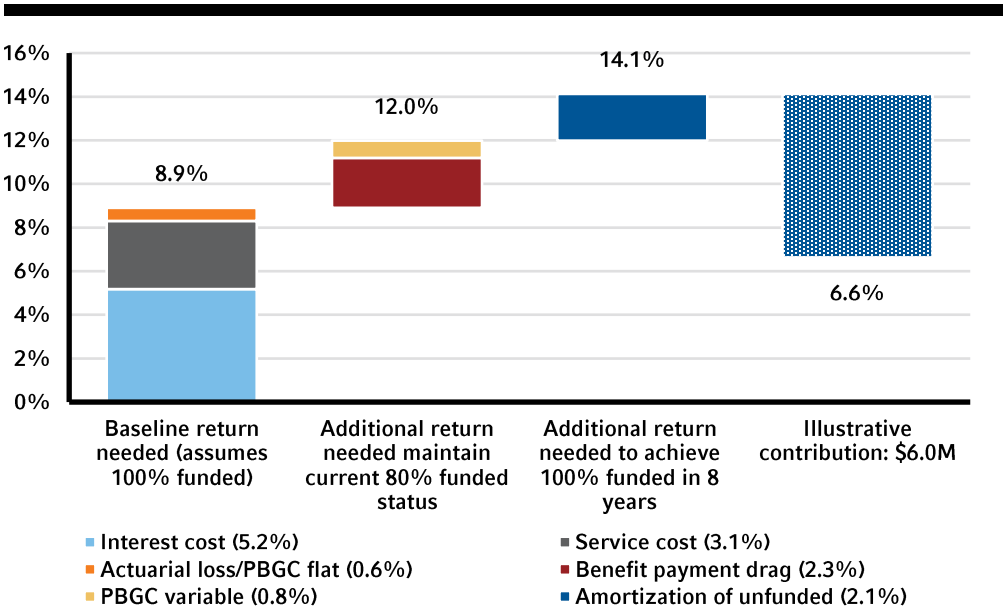
Example of an underfunded open plan

The example shown in **Exhibit 3** is more complex, as the plan offers ongoing benefit accruals and is underfunded. The interest cost is slightly higher since the liabilities are growing with 3% service cost each year (service cost with interest cost must be added on to the liability in the following year).

There are several additional return needs due to the plan being underfunded. First, PBGC variable rate premiums must be paid. There is also benefit payment drag, as the plan pays out about 8% of liabilities in benefit payments each year, which has a detrimental effect on the funded status percentage. In addition, return is needed to bring the plan to a fully funded position. We have assumed a ten-year period between now and a full funding position.

Without accounting for sponsor contributions, the plan would need to earn about 14.1% per year from its assets – an unrealistic objective. Assuming a contribution of $6 million (6% of liabilities and 7.5% of the assets), the return needed drops to a more attainable 6.6% per year. This return need would lead to an asset allocation high in return-seeking assets, which would probably be more than 60% of the portfolio.

Exhibit 3: 80% funded, open DB plan



*The example shown in **Exhibit 3** is more complex, as the plan offers ongoing benefit accruals and is underfunded.*

Final thoughts

Each DB plan is unique, with individual return needs and risk management objectives. For this reason, there is no single, ideal asset allocation. A variety of plan and sponsor-specific objectives and circumstances will dictate the ultimate return needs. Based on this, sponsors and their advisors can evaluate and determine the most appropriate asset allocation.

[i] This presupposes that plan expenses are not added on to service cost, as future expenses are not included in liabilities.
[ii] This assumes that the benefit payments that are paid out are equal to the liabilities "released" (reduction in liabilities when benefits are paid)
[iii] This is shown as a percentage of liabilities. In terms of assets, these values will increase as assets decrease relative to the liabilities. This is why it is so challenging for underfunded DB plans to improve funded status through asset returns alone.
[iv] The effect also applies to overfunded plans but in reverse. In other words, an overfunded plan can become better funded (on a percentage basis) after paying benefit payments.
[v] Plans currently taking advantage of funding relief (i.e., making minimal contributions when they would otherwise be required to) may have minimal contribution offset

QUESTIONS?

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