Rocaton

INSIGHTS

Examining Completion Management for Pension Plans

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EXECUTIVE SUMMARY

* As plan sponsors have increasingly adopted an LDI framework, many have considered the merits of hiring a completion manager.
* Completion management is not easily defined given that completion mandates vary widely in their scope and objectives.
* The funded status of the plan, duration of the liability, status of the plan (open, closed or frozen), and the resources that a sponsor can devote to its pension plan are all important inputs that inform whether or not a completion manager is necessary. If it is deemed to be necessary, these factors may help to determine what the objectives of the mandate ought to be, and in turn, what services are required.
* In Rocaton's view, completion management is most valuable to plan sponsors requiring assistance effectively moving along their glide path, or to those plans with fairly limited liability-hedging assets that intend to target a certain dollar duration or interest rate hedge ratio in a capital efficient manner.
* Completion managers can play an important role for plan sponsors. However, sponsors should evaluate the benefits of retaining a completion manager relative to the incremental costs that may be incurred.

Introduction

The term "Completion Manager" has become part of the pension lexicon for plan sponsors and long duration asset managers over the past several years. However, the term is not easily defined given that completion mandates vary widely in terms of their scope and objectives.

This Insight piece will seek to:

1. Define completion management and discuss the potential role(s) a completion manager can play.
2. Evaluate the appropriateness/usefulness of a completion mandate relative to the incremental cost and complexity.
3. Identify characteristics necessary to execute completion services effectively.

Defining Completion Management

As we have outlined, defining completion management can be difficult. In our view, completion managers should be defined by the potential roles they can fulfill for pension funds. Typically, a completion manager will be tasked with performing at least one of the following functions 1) target an interest rate hedge ratio, 2) perform key rate duration ("KRD") matching and/or minimize tracking error to liability 3) perform glide path monitoring. Completion managers will often use both physical and synthetic exposures to meet these objectives. We further expand upon each of these roles on the next page.

* **Target an interest rate hedge ratio ("hedge ratio").** Hedge ratio[1] is a term that informs sponsors what percentage of interest rate risk in the plan's liability is being hedged. For example, a plan sponsor may wish to target an interest rate hedge ratio of 75%. A completion manager could potentially help meet this objective. Often a completion manager will purchase a mix of derivatives, nominal Treasuries/STRIPS, and long duration corporate bonds to meet this objective. Generally, a completion manager would examine the interest rate duration of the benchmarks of the plan's fixed income managers, rather than the actual portfolio duration, for the purposes of targeting an interest rate hedge ratio. The rationale for this is that the completion manager's role is to help target a hedge ratio based on the underlying betas, not to negate active management decisions. The completion manager will likely have to work with the sponsor's actuary or consultant to calculate the duration of the liability and then make (typically modest) adjustments to the completion portfolio on a fairly frequent basis (e.g. monthly).

  Key Rate Duration ("KRD") Matching and/or Minimization of Tracking Error to Liability. A completion manager might also be tasked with improving the plan's KRD match[2]. To illustrate this point, a hypothetical scenario is useful. Pension plan XYZ is frozen, has 90% of its assets in a liability-hedging program and has an interest rate hedge ratio target of 100%. However, the plan is underexposed to interest rates at the 30-year point and overexposed at the 10-year point of the yield curve. A completion manager could use the derivative market to improve the KRD match. For example, the completion manager might buy Ultra T-Bond Futures to increase exposure to the 30-year point and sell Ultra 10-Year Treasury Note Futures to reduce exposure to the 10-year point. For plan sponsors that are at or near the "end-state" of their glide path, a completion manager can create a customized liability hedging portfolio that seeks to lower the tracking error of the asset portfolio relative to the liability. Working within this framework, a completion manager could monitor and manage to the plan's targeted interest rate and credit spread hedge ratios and better match KRD exposures.

* **Glide Path Monitoring/LDI Quarterback.** A completion manager can also monitor glide path triggers and initiate rebalancing when glide path triggers are met. Triggers are typically based on funded status and/or yields on public benchmarks. The complexity of these assignments varies considerably. For example, the mandate might require the completion manager to simply monitor the glide path and adjust exposures to ensure target exposures are met. However, completion managers also may be tasked with fulfilling more comprehensive mandates. For example, a plan sponsor may have the completion manager adjust the plan's interest rate, credit spread and equity exposures synthetically as the pension fund moves along the glide path. Importantly, in this scenario, only the completion manager's portfolio needs to be adjusted as the plan progresses along its glide path, leaving other long bond portfolios undisturbed.

1 Hedge ratio is defined as the dollar duration of assets divided by the dollar duration of pension liabilities. Dollar duration measures the dollar change in a bond portfolio's value for a given change in interest rates.

2 Key Rate Duration is a measure of interest rate sensitivity at various points along the Treasury yield curve.

Evaluating the appropriateness of a completion mandate

The appeal of a completion mandate to a plan sponsor will largely depend on what objectives the plan sponsor is seeking to achieve. Of course, the merit of a completion mandate should always be considered in the context of the incremental fee and complexity a plan sponsor may incur by hiring a completion manager. Note that a completion manager will typically require that it manages a portion of the assets, which could cause a conflict should the plan become dissatisfied with the manager's investment capabilities. Given the disparate nature of each completion mandate, we have organized the table below by three roles that a completion manager might fulfill.

Figure 1: Characteristics of plans that are more/less likely to use a completion manager

Completion Manager Service / Metric	More likely to use a completion manager	Less likely to use a completion manager
Interest Rate Overlay		
Size of Plan Assets	Large	Small
Duration of Liability	Long	Short
Allocation to Long Bonds	Small	Large
KRD Match and/or Tracking Error Minimization		
Allocation to Long Bonds	Large	Small
Glide Path Monitoring/LDI Quarterback		
Plan Sponsor Resources	Limited	Significant
Complexity of Portfolio	Complex	Simple

Interest Rate Overlay: Plan sponsors that have some combination of the following characteristics may be more inclined to consider a completion manager that improves the interest rate hedge ratio of the plan: 1) Large plan assets (loosely defined as plans with more than $500 million in total plan assets) 2) A liability that has a longer duration than peers 3) Lower overall allocation to fixed income. The intuition is fairly straight forward for all three factors. First, small plans may not meet the minimum account size or it may be cost prohibitive to hire a completion manager via a separate account. Further, targeting a certain interest rate hedge ratio is more challenging via the cash markets when the duration of the liability is longer. Finally, plan sponsors with a small allocation to long bonds, in percentage terms, may benefit from using a completion manager. Through their use of derivatives and STRIPS, a completion manager can achieve a stated interest rate hedge ratio target in a capital efficient manner.

Key Rate Duration Matching and/or Minimization of Tracking Error to Liability: For most pension plans, equities represent one of the largest sources of funded status risk, as liabilities are not explicitly exposed to equity markets. Given this fact, any KRD mismatch between the assets and liabilities contributes relatively little to funded status risk for plans with any meaningful exposure to equity assets. Additionally, any equity risk within a plan mitigates the need to hedge the spread component of the liability discount rate[3] as equities provide a significant amount of implicit exposure to changes in credit spreads. Therefore, for most

3 Liabilities are generally discounted based on high quality corporate bond yields

plans, the incremental benefits of completion management as it relates to improving the KRD match or credit spread hedge ratio is likely minimal. For plans that have a significant allocation to a liability-hedging portfolio and are interested in minimizing funded status volatility, a completion manager may be able to fill in any "gaps." In addition, the completion mandate can evolve as the liability shortens, particularly in the case of a frozen plan. Plan sponsors that are at the end of their glide path and are considering completion management should seek to understand what the potential volatility reduction is and what the incremental costs are.

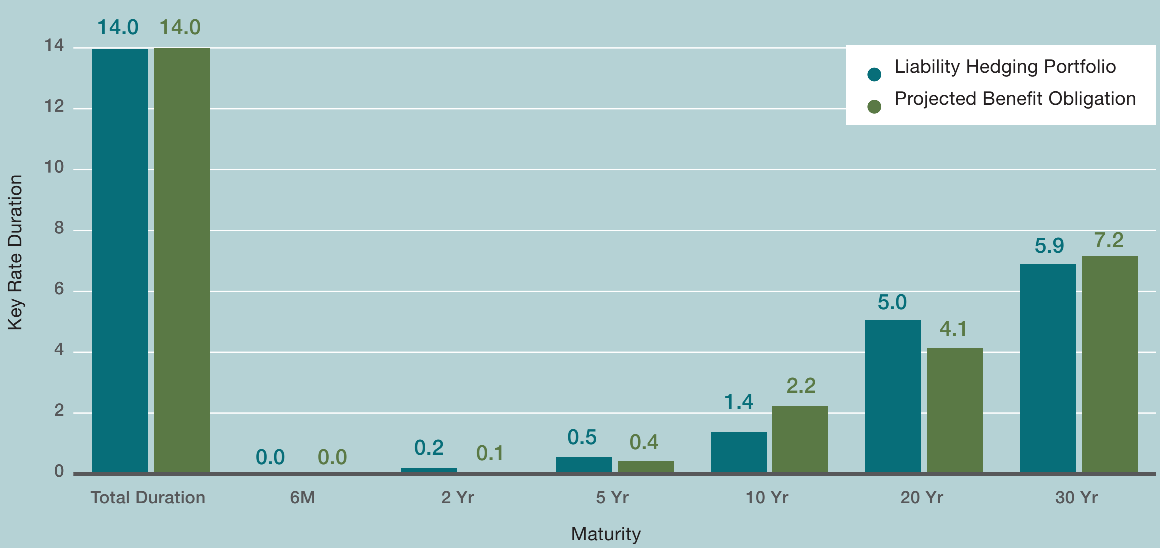
In many cases, it is possible that a plan sponsor / consultant can construct an asset portfolio without the use of a completion manager which will achieve the targeted funded status volatility. As evidenced in the figure below, for a sample plan a liability hedging portfolio can be constructed using the physical bond market that matches the characteristics of the liability quite well. In order to justify utilizing completion management, a plan must extract incremental benefits (e.g. funded status volatility reduction) that offset the costs and complexities. It should be noted that the sample plan used in this illustration has a higher funded status ratio than many plans and a very significant percentage of its assets dedicated to the liability hedging portfolio.

Figure 2:
Key Rate Duration Matching Example: 110% Funded Plan with 90% in Liability Hedging Assets

	Liability Hedging Portfolio	Projected Benefit Obligation
Effective Duration	14.0	14.0
Convexity	3.0	3.0

Liability Hedging Portfolio - Asset Mix

Long STRIPS	Long Government	Long Corporate	Intermediate Corporate
10.0%	15.0%	60.0%	15.0%



Glide Path Monitoring/LDI Quarterback: Plan sponsors that have limited resources but wish to monitor the funded status of the plan on a fairly regular basis (monthly or even daily) in order to facilitate asset allocation shifts in accordance with a glide path may benefit from a completion mandate. The complexity of a plan's glide path and the number of managers may also be an input in determining if a completion manager might be additive. Apart from funded status triggers, a plan may have schedules tied to market benchmarks that will dictate a sponsor's allocation to long bonds or require a shift in the credit/government composition of the fixed income allocation. Monitoring these inputs and executing portfolio changes may be challenging for a plan sponsor to accomplish on a timely basis.

Evaluating Completion Managers

Evaluating completion managers is, in some ways, more challenging than evaluating long only active managers; however, a plan sponsor should attempt to identify a completion manager that has most of the following attributes:

* An ability to clearly communicate how success is both defined and measured.
* Strong knowledge of liabilities and actuarial capabilities. The manager should have the systems in place to calculate the liability and the various hedges that it is targeting on a daily basis.
* Extensive experience trading and managing the risks across OTC and exchange-traded derivatives.
* Willingness to be flexible in its approach given that each sponsor has a unique set of objectives.
* Strong fixed income portfolio management capabilities, as most managers will require that they also manage a portion of the plan's assets in addition to providing completion services.
* Competitive and transparent fees. Fees vary significantly depending on the scope of the mandate. Importantly, if a completion manager is also considered to be the anchor manager[4] it may include completion services as part of the standard long duration fee. Unfortunately, this also makes fee comparisons more challenging.

Conclusion

Plan sponsors have increasingly asked, "Do I need a completion manager?" As with many questions, the answer is "it depends." In Rocaton's view, completion management is most valuable to plan sponsors requiring assistance effectively moving along their respective glide path, or those plans with fairly limited liability-hedging assets that intend to target a certain dollar duration or interest rate hedge ratio in a capital efficient manner. For plans with minimal liability hedging assets, we caution against utilizing a completion manager that attempts to match key rate duration and credit spread hedge ratios, as this tends to create a false sense of precision. Further, we would submit that plans that have significant exposure to liability hedging assets and are attempting to match key rate duration and/or target a credit spread hedge ratio should first ask themselves if they can meet these objectives exclusively via the physical bond market before they consider hiring a completion manager. In all cases, the cost and complexity of completion services should be considered relative to the expected benefits.

4 The term anchor manager is often used in the context of a multi-manager long duration program. The anchor manager will typically manage a significant portion of the long duration assets.

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