

PIMCO DC Dialogue™

The path less traveled...

In this PIMCO DC Dialogue, we talk with Charles Stunkard and Matt Radgowski of Wilshire Associates about advancements in defined contribution plan management and focus on why plan sponsors should consider retirement income needs as they manage their plans. We also discuss the importance of increasing participant contribution rates, emphasizing that asset allocation alone may not be sufficient to reach retirement income goals. Then, we explore the need to tailor investment asset allocation on a participant-by-participant level. Finally, Stunkard and Radgowski conclude that, despite advancements in DC design, they cannot overemphasize the need for participant education.

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This issue's featured interview is with Charles Stunkard, CFA, and Matt Radgowski of Wilshire Associates

*Moderated by
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Defined Contribution Strategist*

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DC Dialogue: *Charles and Matt, thank you for joining us. Wilshire Associates has been at the forefront of asset-liability modeling for retirement plans as far back as 1971. In this time, you've both seen the DC market evolve quite a bit. How does today's environment differ from previous periods?*



Wilshire: During the last 30 years, we have certainly learned a lot about what works and what doesn't work with retirement funding. In fact, much of what we, as an industry, have learned, particularly with respect to DC plans, is reflected in the Pension Protection Act of 2006 (PPA).

For many reasons, today is the most exciting time we've seen in the DC arena since the arrival of the 401(k) plan in the early '80s. The main reason is that DC plans must now play a much more prominent role in funding employee retirement. As a result, plan sponsors are beginning to look at the plans and investment structures with a greater focus on meeting the individual participants' retirement goals.

This shift in focus has made more plan sponsors look beyond the asset-only approach to managing DC plans and move toward incorporating individual retirement income needs as sponsors design plan investment lineup and asset allocation support.

As plan sponsors and consultants focus on how to better manage DC plan investments, we're seeing more focus on adding assets such as inflation-protection securities that improve diversification and provide a better fit to participants' retirement needs.

It's clearly time to start thinking about ways we can improve the variety of asset classes made available within a DC plan fund lineup. We also should evaluate the best ways to utilize those investments in light of the incredibly heightened future role that DC plans are expected to play in funding individuals' retirement.

DCD: *What improvements do you see in plan investment design and what improvements do we still need?*

Wilshire: Certainly, companies are dedicating significant resources to evaluating DC plan investment options. We've seen a shift away from adding many new investment choices to now reducing the number of options. This shift is positive as many plans offer redundant investments, which can create confusion for participants.

While plan sponsors and consultants often reduce the number of investment choices, the ultimate offering to participants is a broader set of asset classes. Some of the asset classes we see more of include treasury inflation-protected securities (TIPS), as well as real estate, and even commodities. In addition, some plan sponsors are evaluating the benefits of even less-traditional strategies, such as hedge funds.

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This reduction in redundancy while broadening asset-class coverage has occurred quickly. Now, we need to see an improvement in how choices are blended or asset allocation mixes are created. That's beginning to happen, especially as plan sponsors look at risk in different ways.

DCD: *How have plan sponsors and consultants traditionally evaluated or considered risks within DC plans?*

Wilshire: Risk is primarily presented to individuals in terms of the volatility of investment options, versus how investment options may be combined to enhance returns based on individuals' risk tolerances and objectives.

For instance, we've all seen a spectrum of investment options organized by risk level, starting from the low end with money market funds, and peaking with the higher-risk emerging-market funds. Risk in this spectrum is shown based on the volatility of each individual investment offering.

DCD: *When you say that they are organized by "risk," or volatility, what does that really mean?*

Wilshire: We mean "return" volatility. To date, measuring risk in DC plans is usually done using a traditional "mean variance" analysis in an asset-only framework. So, plan sponsors and consultants focus on the fluctuations, or variance of returns, of the investment choices or asset classes. They look at this fluctuation around an average or "mean" return for each choice or asset class.

While thoughtful, this traditional "mean variance" approach — looking only at the assets — may not fully capture all the risk elements that are becoming more critical as we manage DC plans for retirement funding. As we mentioned, the movement now is away from an asset-only framework and more toward an individual participant's retirement income goals.

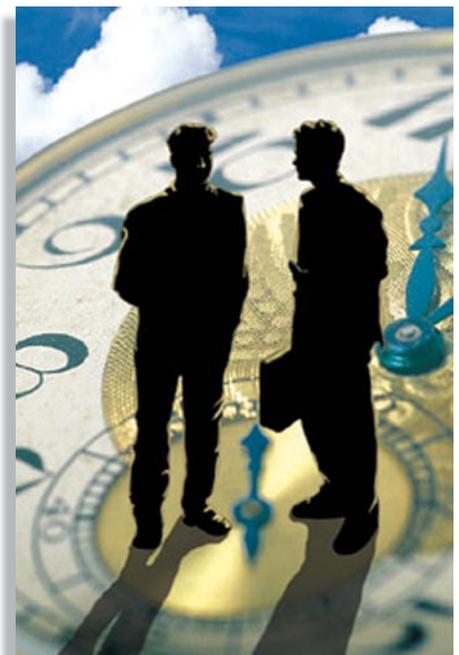
DCD: *What you're saying is that, traditionally, DC plan investment lineups have been determined using a mean variance optimization or what many of us call an "efficient frontier analysis." Is this correct?*

Wilshire: Yes. The market uses this variance optimization approach to determine if a specific asset class is beneficial in improving a plan's level of asset diversification. So, for instance, if an emerging markets fund is added to the plan, one might ask, "Will the expected return increase or risk decrease?"

This type of analysis is part of an "asset-only" framework as it fails to consider another significant factor in efficient investing — the participant's liabilities.

Much of the institutional marketplace is abandoning the asset-only approach and replacing it with an optimization approach, which is more broadly based and includes liabilities. In DC plan optimization, the objective function needs to change, so that it shows the likelihood of assets succeeding in what they are intended to do — fund a participant's retirement income.

"The traditional mean variance approach may not fully capture all the risk elements that are becoming more critical as we manage DC plans for retirement funding."



DC models should optimize the ability to actually fund retirement income. The trade-off, then, is how much money it takes to be successful in reaching that objective. That's a different question and a different optimization objective than one which intends to maximize portfolio return relative to its variance.

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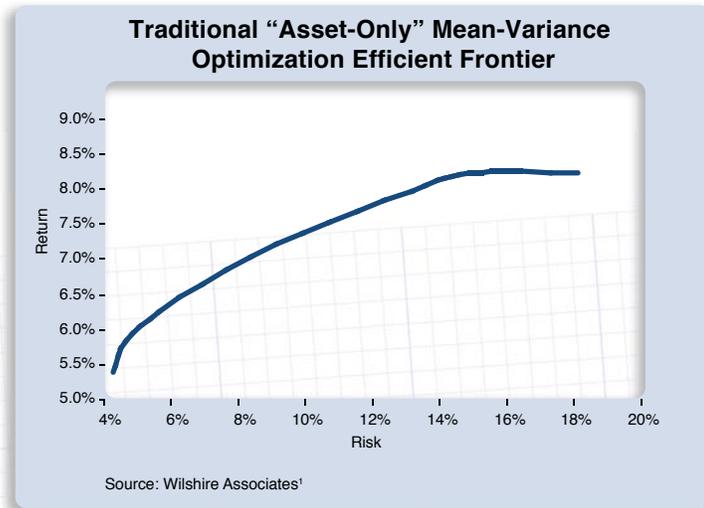


Chart 1

DCD: *What are some of the differences you notice between an asset-only framework relative to the retirement-income needs-based optimization you suggest?*

Wilshire: The traditional asset-only, mean-variance framework provides us a set of asset classes that have low-correlation-generated incremental return for the risk they offer. This framework suggests adding diversifying asset classes to the plan, such as emerging markets and REITs. Then, investment options are selected to fill those boxes.

With a needs-based optimization, the main shift in investment lineups is the addition of asset classes that have both an attractive correlation between risk and return, and liability-hedging characteristics.

In essence, needs-based optimization goes a step beyond asset-only optimization. So, in terms of investment selection dynamics, it's not simply about finding asset classes that have low correlations to one another. The focus is now on finding asset classes that have attractive correlation characteristics to the liabilities that individuals likely will face.

As we change the evaluation criteria for asset classes, the ultimate investment lineup provided within the plan naturally changes as well.

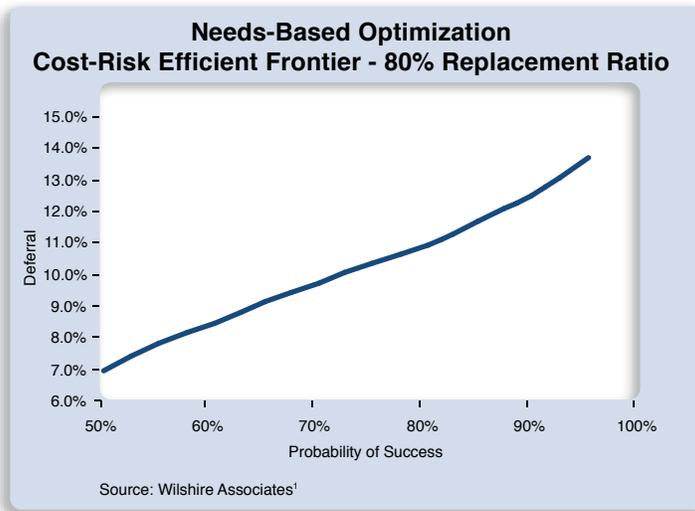


Chart 2

DCD: *Plan sponsors need to look at risk in a different way. They need to focus on the objective for DC plans, which is creating retirement income for their employees.*

Wilshire: That's correct.

DCD: *Tell us more about the type of analysis you suggest for a DC plan with a retirement-income focus. For instance, if a plan sponsor wants to help an employee replace 80 percent of income after retirement, how could the sponsor structure the DC investments? How can we increase the likelihood of individuals reaching that goal?*

Wilshire: To find the optimal investment structure to meet an 80 percent income replacement, first we identify potential income sources to meet that need. For instance, we assume social security, and then we determine whether the participant has an existing pension or other income source.

We must understand how these income sources relate to the income that we're trying to provide during retirement. Specifically, do the income sources adjust for inflation? Social security does. Company pensions typically do not.

We take all of this information — the desired retirement income and funding sources — then run an optimization with the various investment choices within the plan. This process generates asset mixes that give us the highest probability of funding the designated replacement ratio at various cost levels. Alternatively stated, this process provides asset mixes that minimize the cost of funding the designated replacement ratio at various levels of probability.

¹ The above frontier illustrations use the same available asset classes and Wilshire's 2007 capital market forecasts. The Cost-Risk Frontier was calculated using the depicted deferral rates and asset allocations constructed through Wilshire RetirePathSM with sample participant data. The initial asset allocation is expected to change and yield different results through time. These projections should not be viewed as guarantees because actual results will vary.

“Our needs-based optimization creates a new efficient frontier of portfolio choices or asset allocations that account for both assets and liabilities.”

As you know, what sponsors traditionally do is a mean-variance optimization on the assets, possibly followed by Monte Carlo simulations to estimate what may be optimal. What's missing from this analysis is the inclusion of liability and existing funding sources.

DCD: *What roles do liability and funding sources play in the optimization process?*

Wilshire: By including these critical factors in the optimization, we create a series of asset allocations that seeks to maximize the probability of successfully funding an individual's retirement. Our needs-based optimization creates a new efficient frontier of portfolio choices or asset allocations that account for both assets and liabilities.

DCD: *In running your needs-based optimization, what are some differences you see in the results, compared to the traditional optimization approach?*

Wilshire: We focus on maximizing the probability of achieving a given replacement ratio of income in retirement. And we say a "given" replacement ratio, as different people have different opinions with respect to what income replacement percentage is adequate. But that's just a parameter in the optimization process that's easily changed as needed.

That said, the solutions generated from this optimization process are driven, in part, by a built-in risk-aversion model; the resulting asset allocation solutions only incorporate as much risk as necessary to meet the specific objective. Depending on the income replacement goal and existing funding, a needs-based optimization may propose a more conservative asset allocation than one suggested by a traditional asset-only optimization.

DCD: *Can you illustrate this point?*

Wilshire: Sure. Let's assume we have two participants with everything about them identical, except one has accumulated substantially more assets for funding his retirement than the other. The needs-based optimization may suggest for the participant who is better funded to take on far less portfolio risk than the participant with lower funding.

We believe a participant or plan should take on only as much financial-market risk as is needed to achieve the investment objectives. If you're well funded, our models suggest that you take less financial-market risk and find assets that are much more closely aligned or "highly correlated" with the income need that you're trying to fund in retirement.

On the other hand, we can find examples of participants who are already so well funded for retirement via "traditional" sources that equity assets offer these individuals enhanced diversification benefits for their DC assets.

For example, take a participant who expects to have a long tenure of service and coverage from a generous pension fund. When combined with

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social security, those funding sources may give the participant a replacement ratio that's fairly substantial. The participant effectively has assets that will ultimately deliver something close to his retirement-income need. If we think about it from that perspective, the individual effectively has much of his retirement income need already immunized.

The needs-based optimization engine knows all of this. In this situation, with everything else equal, the model leans toward equities, to a degree, because of the greater inherent diversification capabilities. Since the participant's liability is already well covered through pension and social security income, our model suggests he can benefit by the diversification offered from equities.

We're talking about a broader framework that is more concerned with finding assets that are appropriate, relative to the ultimate objective – for instance, funding retirement income rather than looking at just assets by themselves. It's a complete asset-and-liability-framework.

DCD: *Fascinating. If you apply this needs-based approach to a plan's population, rather than on an individual basis, what might you find?*

Wilshire: The type of asset/liability evaluation and technology we've been talking about can be applied at any degree of granularity. It can be applied at the individual participant level where it is most customized, yet it also can be used at a plan level to determine the glide path for target strategies. What's important is that the plan sponsor gains the greatest ability to customize whether at the individual participant or plan level.

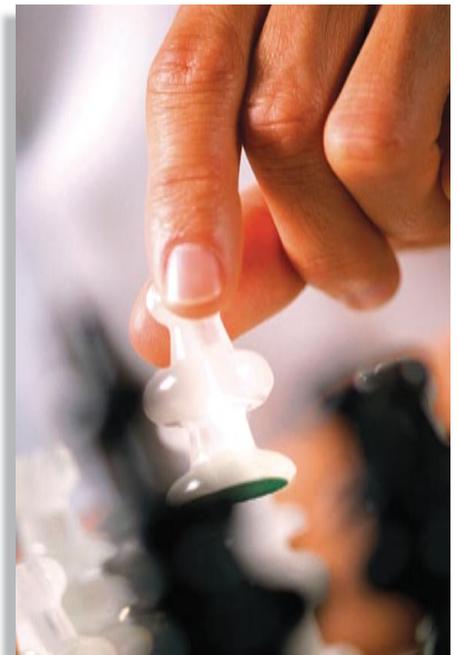
DCD: *Often, equities are called "inflation hedges." Do you agree with that characterization?*

Wilshire: Absolutely. This is especially the case when the investor has a long time horizon for investing. When an individual has a significant time horizon ahead of them and the ability to diversify away a lot of the risk, it may make sense to allocate significantly to equities. As a person moves closer toward retirement, it's prudent to shift away from equities and more toward less volatile securities that still act as an inflation hedge, such as TIPS, real estate and commodities.

When we're trying to determine the amount of income that is needed in retirement, we derive it as a replacement ratio to ending salary, which is very inflation-sensitive throughout one's career. The model prefers diversifying assets and especially seeks assets with the ability to provide protection from unanticipated changes in inflation, such as TIPS.

As individuals approach retirement, they will need to make sure that their allocations are aligned with asset classes that will manage inflation risk. While inflation risk is present throughout the investment horizon, it can be managed using different approaches.

"What's important is that the plan sponsor gains the greatest ability to customize whether at the individual participant or plan level."



DCD: *As you know, Prof. Zvi Bodie of Boston University has written extensively about the use and importance of inflation hedging, specifically through investing in TIPS. He suggests that participants consider investing in only TIPS until they've met their retirement savings need. What's your reaction to that?*

Wilshire: It would certainly provide an enormous amount of inflationary protection. Yet, it may also greatly increase the cost of providing for retirement funding. Based on Prof. Bodie's theory, we believe that contribution levels to the DC plan would need to be substantially higher to generate adequate retirement income. We believe TIPS are an important asset class, yet we strongly believe in broad asset diversification.

With that said, we emphasize that asset allocation is just one lever in determining retirement income. Participants' contribution or deferral rates are additional levers that must be included into the optimization framework and are substantial determinants with respect to probabilities of success.

A participant's contribution rate provides a fairly substantial constant for additional growth in the DC portfolio. This savings rate helps diversify some of the financial-market or asset-class risk that might be inherent in a portfolio. As a steadier and more certain path to reaching their retirement goals, participants should consider contributing more to their DC plans and reducing the amount of portfolio risk they accept.

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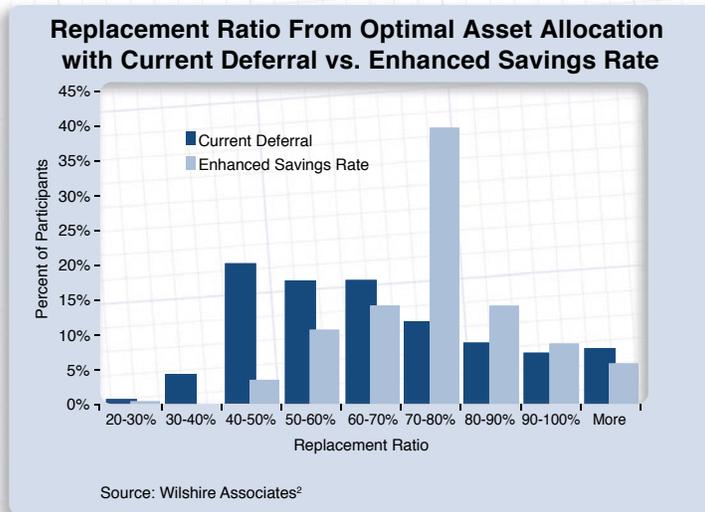


Chart 3

² The chart illustrates the hypothetical differences in retirement income when the current deferral rate is maintained with improved asset allocation, and when the asset allocations and the deferral rate are both improved through Wilshire's Needs-Based Optimization. These projections were calculated using the initial deferral rates and asset allocations constructed through Wilshire RetirePathSM along with sample data, Wilshire's 2007 Capital Market Assumptions, and various savings rates. The initial investment allocation is expected to change and yield different results through time. These projections should not be viewed as guarantees because actual results will vary.

DCD: *Clearly the contribution rate is critical. How do we communicate this to participants?*

Wilshire: Frankly, we could all do a better job in communicating the impact of contribution rates on retirement income. The way that we communicate with participants needs to change. We can no longer limit our participant communications to the asset allocation impact on their retirement outcomes. We also must help them understand the impact of changing their deferral rates.

Retirement-income adequacy is all about asset allocation **and funding**. Those two inputs are absolutely interrelated and need to be communicated to participants. So, we need to present risk, not only in terms of financial market risk, but also show the risk of not funding a retirement need at a sufficient level.

It's no longer just about shifting your asset mix along that risk and return spectrum. It's about improving the probability of funding your complete retirement income – again, the savings rate is a big part of that.

DCD: *With your needs-based analysis, plans or participants may be advised to dial the risk level down and focus on meeting the real liability. You also suggest that, rather than taking on additional market risk, participants should increase their contribution levels.*

As you know, with the Pension Protection Act's auto-enrollment safe harbor, many companies have decided to default people into the plan at 3 percent, escalate up to 6 percent and then stop. What's your view on the appropriate contribution rate to help most Americans achieve a sufficient retirement income-replacement level?

Wilshire: While current deferral rates are all over the map, trying to calculate a required deferral rate depends on a multitude of other potential funding sources and factors.

Participant data shows there are a significant number of people who are not contributing enough. Appropriate asset allocation will very often improve their situations. But it's just not enough. One of the benefits of this optimization process is that it allows us to create a contribution level tailored to the individual or group of participants.

DCD: *What can a plan sponsor do to encourage higher deferral rates?*

Wilshire: Targeted communication at the participant level needs to change dramatically. We need to help participants understand the inter-relationship between funding and investment decisions. Illustrating this inter-relationship helps them understand the impact that each of these decisions will have on funding their retirements. If communicated effectively, this better understanding may produce higher deferral rates, as needed.

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“There are times when custom solutions are a better fit for participants.”

DCD: *That sounds great. As companies consider auto-enrollment and the investment default, what do you suggest?*

Wilshire: There are times when custom solutions are a better fit for participants. For example, if employees have access to a generous DB plan or earn above-average income levels, they may need more customized investment solutions.

DCD: *Plan sponsors should have a custom asset allocation for their default investment strategies or, better yet, base asset allocation on individual participants’ funding and circumstances. Yet, what we hear in the market is, even when those tools and resources are provided to individuals, people don’t use them. What is your reaction to that?*

Wilshire: If the asset-allocation process is time-consuming and involved, it’s less likely that the participants will become engaged and complete the process. So it needs to be very user-friendly. The tools and resources provided need to accommodate the full spectrum of participant engagement, from the “do it for me” mindset, to those deeply engaged in the investment planning process. Even participant communication now needs to address the differences in participant behavior. Today, tools and resources are finally moving in that direction.

DCD: *A plan sponsor may decide that it wants to create its own custom target strategies as a default. But, also, the sponsor may want to offer the ability for participants to engage in deeper planning and analysis. The sponsor also may want to offer access to discretionary asset management or managed accounts, allowing an investment advisor to take control of the participant’s asset allocation.*

Can all three of these approaches live together in one plan?

Wilshire: Absolutely. You’ll find that most plans have fairly diverse participant populations with varying levels of interest in managing DC plan assets. By offering support in a multitude of ways, you help all participants benefit from the advanced analytical capability – that is, the needs-based optimization – regardless of the desire and degree to which they choose to engage in the plan.

To take that a step further, it might be the same participants at various points of their careers. Early on, you may have a participant who defaults into a target-date option along with an escalated savings rate. Then at some point during his or her career, the participant may decide, “I’d like to take it to the next level.” At that point, the participant can get more granular and create a more customized, tailored solution through a managed-account offering.

DCD: *That's an interesting approach allowing for needs-based optimization to be applied on a plan or individual level. Your needs-based work seems similar to what's going on in the DB world as more companies match their assets and liabilities in an effort to immunize and reduce risk – often referred to as liability-driven investing (LDI).*

Do you have any comments on the similarities between the LDI approach for DB plans and the needs-based methodology for DC plans?

Wilshire: They're very similar. We're taking DB optimization technology and applying it to DC plans and participants, whether in the form of target-maturity or managed-account solutions. You're exactly right. There are strong similarities between what we refer to as the "commitment-driven investing" approach used for DB plans and the "needs-based optimization" process used in the DC arena.

DCD: *Is there anything else that we should know about this area?*

Wilshire: We can't emphasize enough the need to consider the required level of retirement income as plan sponsors and participants manage their DC assets. Also, communication is a very important component. A needs-based-optimization approach, coupled with targeted communication, will help participants succeed.

DCD: *Thank you, Charles and Matt, for sharing your methodologies and suggestions with us.*

Wilshire: Thank you very much.



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