

Risk transfer vs risk retention

Michael Kitces | Pinnacle Advisory Group | 20 January 2015

The ongoing decline of defined benefit plans and pensions, and the associated rise of defined contribution plans – around the globe – is leading to a growing body of research around how best to "de-cumulate" a lump sum of assets after they have been accumulated in the first place.

To address the challenge, a wide range of strategies have emerged, some built around a "safety-first" framework of guaranteeing a base of income (e.g. with annuitisation or a pension) and building on top of that, while others have focused on a more "probability-based" portfolio-centric approach that aims to spend down the invested assets while maximising the probability of success along the way.

Yet, the reality is that portfolio-based strategies built around a "conservative enough" safe withdrawal rate effectively are a safety-first approach, while safety-based strategies using annuitisation or pensions can still have at least some risk (as evidenced by the history of insurance/annuity company failures).

Perhaps instead, a better way to recognise the range of retirement income strategies is based on whether retirees trust in insurance and annuity guarantees and choose to transfer the risk, or instead "trust" in markets and the equity risk premium in the long run and choose to retain the risk while seeking appropriate strategies to reduce or avoid the danger of a shortfall along the way.

OPPOSING RETIREMENT PHILOSOPHIES: PROBABILITY-BASED VS SAFETY FIRST

In a recent new retirement white paper entitled "[The Yin And Yang Of Retirement Income Philosophies](#)" (by retirement researcher and professor Wade Pfau, and Jeremy Cooper, chairman of retirement income for Challenger Limited) explore what they have dubbed the "opposing" retirement philosophies of probability-based versus safety-first.

In this framework, "probability-based" planning is about conducting a Monte Carlo analysis to determine that a portfolio is capable of supporting a particular retirement spending goal. The Monte Carlo trials are run, and the plan has a certain "probability" of succeeding based on the percentage of scenarios that achieved the spending without any shortfall (e.g. a 90% probability of success).

In the safety-first approach, by contrast, the idea is typically to ensure that at least some base level of essential spending needs are "safely" funded for life – i.e. on a guaranteed

basis, precisely matching assets to the future spending liabilities, such as with the purchase of a lifetime annuity, using a pension, or perhaps an ultra-long-term bond ladder.

Viewed on this spectrum, Pfau and Cooper then align a wide range of popular retirement income strategies on the basis of whether they tilt more towards a probability-based approach, or a safety-first approach (Figure 1).

Figure 1: Spectrum of retirement strategies



Source: Phau & Cooper, 2014, "The Yin and Yang of Retirement Income Philosophies"

THE PROBABILITY PROBLEM WITH SAFETY FIRST

While Pfau and Cooper's characterisation of which strategies are (and are not) commonly modeled with a probability-based (i.e. Monte Carlo) analysis does reflect common practice today, the problem with such a framework is that ultimately the distinction may be just that – a delineation of common practices today, and not actually a unique and mutually exclusive differentiation in the strategies themselves.

For instance, the whole origin of [Bengen's safe withdrawal rate approach](#) (which Pfau and Cooper place into the probabilistic philosophy) was to determine a spending rate low enough that it would never have failed at any point in [US] history. In other words, the safe withdrawal rate approach – at least in its original form – was actually designed to be a 100% safety approach, where the 4% rule spending level could be aligned to "essential" expenses and any upside from there would cover discretionary spending and legacy goals, in the exact same manner as other safety-first approaches! While some debate remains about whether 4% is the "right" safe withdrawal rate number, or whether it should be lower (or not) in today's environment, the point remains that clearly some spending level is low enough that,

even if "bad stuff" happens, the retiree has still assured the safety of his/her spending simply by making it conservative enough to whether any storm.

In other words, probability-based safe withdrawal rate approaches can easily be safety-first approaches, simply by setting the spending rate low enough to be safe.

Conversely, while strategies like a managed defined-contribution plan are framed as a non-probabilistic safety-first framework, the reality is that they are not universally 100% "safe". In looking at the history of corporate defined benefits plans, the reality is that in the earlier days (the mid-1900s), there were several high-profile defined benefit plans that collapsed, leaving workers without their promised benefits. Even so, pension plans continue to have failures, including large high-profile companies like several airlines.

Similarly, the "safety-first" strategies using various types of bonds (or bond ladders) or annuity products are not entirely "safe" either. Insurance companies do have failures, bonds do default, and not every company has a rating of AAA. In point of fact, data from Moody's and S&P shows that cumulatively, over time, even companies once rated AAA have had some defaults (at least to some extent), and the rate just drifts higher into the AA, A, and lower categories.

Figure 2: Cumulative corporate bond historic default rates

Rating category	Moody's	S&P
Aaa/AAA	0.52%	0.60%
Aa/AA	0.52%	1.50%
A/A	1.29%	2.91%
Baa/BBB	4.64%	10.29%
Ba/BB	19.12%	29.93%
B/B	43.34%	53.72%
Caa-C/CCC-C	69.18%	69.19%
Investment Grade	2.09%	4.14%
Non-Invest Grade	31.37%	42.35%
All	9.70%	12.98%

Source: Moody's & S&P

Granted, while the default rates for highly-rated companies are not high – and, in many cases, have some further backing for annuitants (with limits) from state insurance guaranty

funds – the fact remains that the probability of success is not 100% in the world of most "safety-first" strategies. Especially since not all consumers necessarily purchase from the highest-rated insurance/annuity companies, either.

Similarly, the ongoing discussions about whether government retirement benefits payments may someday have to be trimmed just emphasises the point that promised "safety-first" payments can appear entirely "safe" and stable... right up until they're not!

The key is that just because the risk (and/or the value) of a bond, annuity, or defined benefit plan payment is not continuously adjusted up and down on a daily basis and marked to market doesn't make it unequivocally "safe" either. The odds that everything works out OK using insurance companies and defined benefits may still be highly probable. But that's still a probability that the insurance/annuity company won't default. And, in fact, given that there is at least some probability any random insurance company might have failed in the past century, while a 4% "safe" withdrawal rate has never failed in US history, the dividing lines of "probability" versus "safety" don't appear to be mutually exclusive at all. Either can have a probability of failure if spending is too high to be sustainable... or at least, some probability of a required adjustment to get back on track.

RISK TRANSFER VS RISK RETENTION – THE REAL DIFFERENCE IN RETIREMENT INCOME PHILOSOPHIES

So, if the key distinction between portfolio-based strategies (which "tend" to be probability-based, under Pfau and Cooper) and insurance/annuity-based strategies (which "tend" to be safety-first) is not actually about probabilities versus safety, then what is the distinction?

Given that either can potentially have – or manage – risk, what it really comes down to is how the risks are being managed. In other words, the real distinction is about risk transfer versus risk retention.

In risk transfer strategies, the goal and purpose is to shift at least the bulk of the risks to some other entity. Thus, for instance, where the greatest risk for many retirees is living beyond their life expectancy and not having enough money to cover that "unexpectedly" long time horizon, the purchase of annuities and use of a lifetime pension is an effective transfer of longevity risk. Similarly, retirees may also seek to transfer their exposure to market risk to the annuity company through the purchase of (variable) annuities with retirement income riders (albeit in a much less effective manner due to the difficulties in risk pooling with such guarantees and the danger that risk is actually concentrated).

At the other end of the spectrum are strategies that retain the risk, where the retiree manages it directly instead. For instance, safe withdrawal rates are a strategy where the risk of markets and longevity are maintained, and simply reduced by setting a deliberately conservative spending strategy. Variable spending or income buckets similarly retain the (market and longevity) risk but mitigate it by dynamically adjusting spending or managing

the portfolio in a manner that blunts the exposure. Alternatively, purchasing a bond ladder as a floor seeks to manage at least the market risk by simply avoiding it altogether – although longevity risk still remains, that can at least be reduced by creating a bond ladder with a "conservatively long" time horizon.

Notably, then, even within the context of "risk retention" there are strategies that seek to reduce or mitigate the risk (e.g. dynamic spending or safe withdrawal rates), while others that simply try to avoid the risk (e.g. using bond ladders for an arbitrarily long–past–life–expectancy time horizon). In fact, we can re–graph the spectrum of strategies that Pfau and Cooper examined on this basis, which puts the strategies in substantially different context (Figure 2).

Figure 3: Recasting the spectrum of retirement strategies



Source: Michael Kitces.

As Figure 3 reveals, the real distinction in most retirement income strategies is whether the risks (primarily of the market and of longevity) are retained and either reduced/mitigated or just avoided altogether, or instead are transferred to an insurance company as a means of (at least mostly) avoiding them.

Though as noted earlier, even transferring the risk still ultimately retains some probability that the entity being transferred to will itself not be able to make good on its promises!

RETIREMENT INCOME PHILOSOPHIES – WHO/WHAT DO YOU TRUST, MARKETS OR GUARANTEES?

Given that the key differentiator of retirement income philosophies is really about retaining risk or transferring it, one might say that the distinction really comes down to a matter of who/what you trust more – the returns provided by the markets, or the guarantees offered by third-party providers (insurance companies, pension plans, government).

If you don't trust markets to function effectively and give you reasonable returns in the long run that compensate you for the risk, there's little value to trying to manage it through various spending strategies. In other words, if you don't trust the presence of an equity risk premium, it's better to simply transfer the risk, and makes little sense to retain it. And, as research shows, if you don't trust markets, you probably won't want to invest in them anyway.

Alternatively, if you do have confidence in the capability of markets to ultimately deliver an equity risk premium in the long run, arguably, it makes little sense to transfer the risk when it can be managed through spending strategies while retaining the opportunity to enjoy higher returns and greater wealth in the long run. Especially since in current markets, the spending offered by guarantees (e.g. a lifetime immediate inflation-adjusted annuity) aren't materially different than those implied by conservative spending strategies (e.g. safe withdrawal rates) – both produce lifetime inflation-adjusted spending results in the neighborhood of 3.5% to 4% of the retiree's initial account balance. This isn't entirely surprising, as both individuals and insurance companies are subject to the same capital markets assumptions and, in fact, insurance-based strategies shouldn't produce better results on average or the insurance company itself (and therefore the retiree, too) would be at even greater risk of default!

Of course, the caveat remains that "markets" and the economy in the aggregate may not support this spending level in the long run. Ultimately, that remains a concern of both risk retention and risk transfer strategies, for the simple reason that again both are subject to the same capital markets and the same exogenous shocks and events. The low-interest-rate environment damaging retirees today is damaging insurance companies as well, and the kinds of Great Depression and World War events that have been destructive to safe withdrawal rates throughout history around the globe have been similarly damaging to insurance companies, corporations, and governments. In other words, while both strategies can be managed in a manner to make the risks very very low, the remaining risks that can't be perfectly eliminated are actually highly correlated across both philosophies.

The bottom line, though, is simply this – the real distinction in retirement income philosophies and strategies is not really about which is "safe" and which is not, as any of the strategies can be managed in a manner that is safe or in a manner that is more risky (and at least has a probability of failure). The real distinction is whether (market and longevity) risk is transferred or retained, and if retained how those risks are managed or avoided. For

which, given a world of uncertainty, there are no absolute correct answers about what the future may hold... which is what makes them a matter of retirement income philosophy in the first place!



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