A Close Look at the PIMCO-Met Life Retirement Strategy
A Marriage Made in Investment Heaven?

Michael Edesess

April 5, 2011

Is PIMCO's and Met Life's collaboration on a retirement strategy a perfect May-December marriage? That's the question an article in the March 1st *Retirement Income Journal* asks. The article even shows a photo of a very fetching young woman dancing rapturously with a not-so-fetching much older man.

So who is the hot chick and who is the geezer?

The looker is PIMCO's Real Income Funds, which use a portfolio of TIPS (Treasury Inflation-Protected Securities) to provide inflation-protected income up to a 10-year or 20-year horizon. The geezer is MetLife's Longevity Income Guarantee.

The two products are being co-marketed by PIMCO and MetLife. When you're relatively young (we're talking about 65 here) you use PIMCO's Real Income Funds for stable income in the near term. When you're older (let's say 85, 20 years later) the Longevity Income Guarantee kicks in and takes it from there. You're set with secure income for life.

Let's examine these products more closely and analyze whether they are good deals, either separately or together.

PIMCO Real Income Funds

As of now there are two PIMCO Real Income funds, a 2019 fund and a 2029 fund. Their fees are 0.39% annually for the institutional share classes, which I assume are what fee-only advisors would use. PIMCO's two funds were originally designed to last ten years and 20 years, respectively. Each is intended to produce an roughly level stream of real, inflation-adjusted income from now until the fund's termination date. For example, according to a PIMCO representative quoted in the *Retirement Income Journal* article, $100,000 invested in the 2029 fund will produce real income of roughly an estimated $6,200 a year until 2029, when the fund will close. The 2019 fund will produce real income of about $11,200 until 2019.

The holdings in the portfolios can be readily downloaded, showing that the portfolio is a simple TIPS ladder, as the Real Income brochure states. I ran my own TIPS laddering program to fit a level income stream and got almost exactly the same result as the PIMCO portfolio. This means that they are using standard methodology to ladder their TIPS.

The assets in these funds are modest so far. If all the TIPS income – interest and principal payments – were distributed as they occur from PIMCO's Real Income Fund 2029's assets of $6,381,000 (as of 12/31/2010) the distributions would look like this:

Year	Income
2011	$328,473
2012	$207,239
2013	$369,601
2014	$453,235
2015	$461,227
2016	$456,945
2017	$445,462
2018	$367,243
2019	$516,521
2020	$536,026
2021	$66,483
2022	$66,483
2023	$66,483
2024	$66,483
2025	$507,374
2026	$428,454
2027	$443,317
2028	$693,845
2029	$672,989

(There are also $328,473 in cash equivalents in their portfolio – including T-bills – that mature in 2011.)

The drop-off from 2021-2024 is because no TIPS that were available on 12/31/2010 matured in those years, so the only income in those years is from interest.

What PIMCO must plan to do with this fund in the future is not to distribute all of the early years' income, but to hold some in reserve, reinvesting it in shorter-term TIPS or Treasuries, then distributing in 2021-2024 what has been held back in order to produce a steadily increasing stream of payouts – as shown in the exhibit in their brochure.

I made some additional assumptions (that real distributions increase gradually at a rate of roughly 2.5%/year; that reinvestments realize a real return of 1.11%, same as the real yield-to-maturity of the TIPS portfolio; etc.) in order to calculate approximately what fees would be if they were all paid at the front end. (This is essentially the present value of fees, or how much less it would cost you to buy the same stream of distributions with a TIPS ladder if you didn't have to pay any fees.) The number came out to 3.9% of the portfolio. This has a certain reasonableness to it, since the annual expense ratio is 0.39% and the portfolio winds down to zero by 2029; so it might have about 50% of its starting assets on average.

If the investor's advisor wanted to generate $50,000/year of real income until 2029, the front-end cost would be $34,500 – 69% of the investor's first year's real income. (It would be about half as much at the front-end for the 2019 fund.)

That's a hefty cost for a service that appears to boil down to constructing a buy-and-hold TIPS portfolio. The advisor who recommends the PIMCO Real Income fund is forcing the client to pay this fee, so it would be better for the client if the advisor did the work of laddering and purchasing TIPS herself and took for a fee perhaps one-third of what the PIMCO fund takes.

TIPS laddering requires a standardized mathematical methodology, linear programming, that was invented during World War II. It has a remarkably broad range of practical applications, from planning oil tanker itineraries to military logistics to bond laddering. For TIPS laddering there is basically only one way to apply it; everyone who does it is likely to do it the same way. As I mentioned, my program's result is the same as PIMCO's portfolio.

That's why it's annoying to read the usual marketing hype in PIMCO's brochure claiming that the funds employ "proprietary technology" and "a sophisticated 'patent pending' process to construct the TIPS portfolio." This is nonsense – they construct their TIPS ladder the same way everyone else would.

There is, however, a mystery. One would expect this to be a buy-and-hold TIPS portfolio. To receive the income stream, one need only ladder the TIPS, buy them, hold on to them and receive the income. That would imply negligible portfolio turnover except for TIPS maturations. But PIMCO's Real Income Funds portfolio has, according to both PIMCO's summary prospectus and Morningstar's analysis, a *445%* turnover.

If that figure can be believed, it may mean PIMCO is doing some sort of high-frequency trading trying to capitalize on fleeting TIPS pricing anomalies. If PIMCO is indeed doing this – and I don't know what else they could be doing to cause 445% turnover – it should not be difficult to determine whether PIMCO has been successful in goosing their portfolio return. Just get a snapshot of PIMCO's portfolio at year-end 2009, calculate the rate of return it would have realized if it had been held without any trading for the year 2010, then compare that with the fund's actual return.

An important digression

PIMCO's Real Income brochure displays the following table:

TIPS vs. Equities
(January 31, 1997 - September 30, 2009)

	Equities	TIPS	Inflation
Annualized Return	4.15%	6.60%	2.44%
Anualized Volatility*	16.54%	6.00%	–

Source: S&P 500 Total Return Index, Barclays Capital U.S. TIPS Index, Non-Seasonally Adjusted Consumer Price Index

*Standard deviation of monthly returns

This table – as anyone can plainly see – shows that TIPS performed better than equities over the nearly 13-year period since they were first issued, with much lower volatility.

The naive investor, of course, will assume that this suggests that TIPS *will* perform better than equities. But it suggests just the opposite. TIPS have performed well because their inflation-adjusted yields were higher in the early years after they were first issued than they are now. This history of declining real yields suggests not that they will continue to decline but that they *cannot* continue to decline much further – and may even go up. Either of these events implies future rates of return considerably lower than the historical ones.

Yet PIMCO displays this table in their marketing brochure, cynically knowing that the investor/prospect will take it to mean that TIPS will offer a return superior to equities going forward. It is simply wrong for a marketing presentation to take deliberate advantage of the prospect's naiveté to twist perceptions. It is PIMCO's duty to educate the prospect by explaining, *right in their brochure,* why TIPS experienced superior returns in those years – and why it may not now. Either that or leave the table out of the brochure. Of course PIMCO would do this if the SEC required them to, but they should do it without waiting for such a mandate.

The do-it-yourself alternative

Instead of recommending that a client invest in one of the PIMCO Real Income funds for a 10- or 20-year level stream of inflation-adjusted guaranteed income, an advisor could construct the TIPS ladder for the client herself.

How difficult is this to do? If you're too obsessive-compulsive about it, it can be difficult – but the PIMCO Real Income funds don't get it exactly right either.

There are two problems, one of which the PIMCO funds don't have, and the second of which they get around in the same way an advisor will get around it for an individual client.

Taking the second problem first: Right now there aren't TIPS available that mature in each year between now and 2029. There are none that mature in 2021[*], 2022, 2023, or 2024. Because of that, the result of a TIPS laddering program that tries to produce exactly level

[*] Though there is now a TIPS contract maturing in 2021 that hadn't been issued yet as of 12/31/2010.

income is that it will buy much more TIPS than needed – matching the desired income in years when no TIPS mature, but exceeding it by a lot in years when they do mature.

The way around that – same as PIMCO's way around it – is to buy more TIPS than you need to meet income in the years prior to 2021, then reinvest the extra funds from maturing TIPS, presumably in newly-issued future TIPS, to cover the lean years 2021-2024.

The other problem, which PIMCO doesn't have because it's a large fund divided pro rata among many investors, is that TIPS come in lumpy contracts, each one requiring a purchase generally in excess of $1,000. Your program that ladders TIPS for a small investor, on the other hand, might tell you to buy perhaps $652 of the TIPS contract maturing, say, in 2018 – which you can't do, because one TIPS 2018 contract costs, let's say, $1,243. The solution is simply not to be obsessively meticulous about it and to create an approximate TIPS ladder that produces approximately level income or approximates the income stream needed by the investor.

This can be done at the cost of a TIPS laddering program plus the negligible cost of purchasing the TIPS. Then, if you're not doing high-frequency trading along the way as perhaps PIMCO is doing, you just buy and hold, for 10 or 20 years or even 30 years.

The bottom line

The 0.39% expense ratio is too high for this service, unless PIMCO really can wring sufficient excess income out of the funds through high-frequency trading, which I frankly doubt. As I say, it would be easy to check.

PIMCO also offers non-institutional share classes of these funds with considerably higher expense ratios, and they should be unequivocally avoided.

PIMCO's TIPS laddering would be a valuable service at, say, a third the cost.

MetLife's Longevity Income Guarantee

Now let's look at the other product in this supposed marriage of convenience: the geezer, MetLife's Longevity Income Guarantee (LIG).

According to its brochure, the LIG can be purchased at age 55, 60, or 65 and begins to produce level income – not adjusted for inflation – at age 85. (In a more recent communication from MetLife, it appears the income could also start in either version of the product at age 75.)

The product comes in a "Flexible Access" version and a "Maximum Income" version. In the Maximum Income version, the purchaser receives the maximum possible future income, but it offers no benefit if the purchaser dies before payments begin, and there is little flexibility in the payouts. The only choice is whether to receive a single life annuity or a joint and last survivor life annuity.

In the Flexible Access version, the purchaser's beneficiaries receive a benefit of the purchase price plus a 3% annual increase if the purchaser dies before payments start, and there is more flexibility as to when to begin receiving the annuity. In the Flexible Access version, however, the amounts of the annuity payments are only about 55% of what you receive from the Maximum Income version.

We'll begin with the Maximum Income version and look at the Flexible Access version later. In the Maximum Income version, a purchase of $100,000 at age 65 yields $69,100 annual income starting at age 85 for a man, and $55,540 for a woman (not inflation-adjusted). The payments for women are lower because they have a longer life expectancy.

I looked at the MetLife product and was surprised to find that it's a good deal – actually, a very good deal – especially, for some reason, for women. At least the Maximum Income version is a good deal.

I base this on the expected IRRs – internal rates-of-return – using actuarial tables from the U.S. Social Security Administration's 2006 Period Life Table. The IRR of the Maximum Income version for men is 2.8%, and for women it is 3.6%. This assumes life expectancies won't change over the next 20 years.

In reality, of course, actuaries sometimes shift the survival tables by a number of years to allow for the possibility that survival rates will be higher in the future – that is, that life expectancies will lengthen. I calculated the expected IRR using the current survival rates, a 3-year shift, and a 5-year shift. My guess is that MetLife's actuaries used an assumption of about a 3-year shift and an interest rate of 4.5% – the current rate on 30-year Treasuries – because the IRR seems roughly insensitive to purchase age when you use a 3-year shift. With a 3-year shift, the IRRs come out 4.6% for men and 5.0% for women.

This is quite a good deal to protect against the possibility of running out of money at an advanced age. Remember that, for most insurance products, the rate-of-return is negative. You don't expect to get a positive return on your investment by buying fire or flood insurance for your home; the benefit is that, in exchange for a negative expected return on your investment of cash, you get protection against an insupportable financial risk.

The reason why longevity insurance is a good deal is that makes textbook use of an insurance company's ability to do what you can't do yourself – genuinely diversify risks. Not like an investment manager diversifies risks, which is a paltry diversification by comparison, but it can diversify risks that truly have very low positive or zero or even highly negative correlations.

When an insurance company sells life insurance and also sells longevity insurance, it is taking on two risks that are highly negatively correlated. Hence, its risk is quite low. It can offer a good rate-of-return to a purchaser of longevity insurance and virtually eliminate the purchaser's longevity risk, all at low risk to itself.

This type of longevity insurance is the annuity analog of high-deductible health insurance. With high-deductible health insurance, the purchaser insures only the risk against which the purchaser cannot self-insure – but which an insurance company can insure. The same goes for longevity insurance. A reasonably solvent purchaser of a life annuity can probably self-insure against the risk of running out of money in the next 10 or 20 years, but he or she may not be able to self-insure against the risk of running out of money sometime in the next 40 years. That's where the longevity insurance is needed.

The Flexible Access version

It is not cost-effective to purchase the Flexible Access version for the death benefit instead of the Maximum Income version.

The Flexible Access version allows for a flexible starting time for payments and also, as I mentioned, a death benefit of the original purchase price plus a 3% annual return if the purchaser dies before the payouts begin. It is difficult to quantify the benefit of the flexible starting time, but the value of the death benefit can be quantified.

The same death benefit can be purchased separately in combination with the Maximum Income version by purchasing one-year term life insurance each year for an amount increasing 3% a year. My rough calculations show that a sum of $25,000 invested at age 65 at 3% annually would more than suffice to purchase term life insurance on $100,000 increasing at a rate of 3% annually, as long as the purchaser is living. Hence, the annuity that could be received with a scaled-down Maximum Income version would be 25% less than the Maximum Income version without a death benefit. By comparison, the annuity payments with the Flexible Access version are only about 55% of the annuity payments with the Maximum Income version.

Can you do better with a zero-coupon bond and a SPIA?

Maybe you noticed that you only get an IRR of 1.8% (for a man) on the LIG, or 3.8% if life expectancies lengthen three years, but the payments on the LIG don't start for 20 years.

Why not instead buy a highly-rated muni bond strip yielding 5% that matures in 20 years, then purchase a single premium immediate annuity (SPIA) at that time? What's the point getting only a 1.8% return on money that's just sitting there 20 years?

This question suggests an idea. A lot of muni bond investors are well-off retired people wanting tax-free income. Municipalities need money – and they could raise it with financial arbitrage. They could offer a higher rate to bondholders who agree to receive payments only during their lifetimes. If the bondholder dies, the payments stop – it's like a municipality selling annuities instead of bonds.

Back to the matter at hand: let's consider the option of purchasing a 20-year bond, then using the proceeds to buy a SPIA. With MetLife's LIG, $100,000 at age 65 buys a man a deferred annuity of $69,100 starting at age 85. If, instead of purchasing the LIG, you invest the $100,000 in a bond strip at 5% annually for 20 years, you will have $265,330 at age 85.

According to the web site www.annuityquickquote.com (which tends to understate annuity prices a small amount), it will cost an 85-year-old Massachusetts male $443,264 to buy a SPIA paying $69,100 a year ($5,758/month). (If life expectancies lengthen by the time you're 85, it will cost more.)

The $265,330 you'll accumulate with the bond will be nowhere near enough to purchase the SPIA. The LIG is much better.

So why can MetLife charge a 65-year-old only $100,000 for this annuity starting at age 85? Because the probability the 65-year-old will die before reaching age 85, letting MetLife keep the $100,000, is 67%. MetLife needs to actually use the money to pay the annuity in only 33% of the cases.

The LIG is not like an ordinary 20-year zero coupon muni bond followed by a SPIA; it's like the 20-year muni-bond-annuity hybrid that I described earlier. But you can't get that kind of muni bond as far as I know, making this a great deal.

Do they go together – is it a sound marriage?

No, it is not a sound marriage, and not just because I do not recommend the PIMCO Real Income Funds at their current expense ratio. The main reason to avoid this combination is that the PIMCO income is inflation-protected while the LIG income is not.

This basic disconnect between the two products makes them resemble what I was once told about the original Central American Highway – which may or may not be true, but which proves a point. I was told that because the neighboring countries of Central America couldn't agree on anything, they didn't coordinate the building of their stretches of highway, and as a result the end of one stretch – say in Nicaragua – might be two miles of tangled rainforest away from the beginning of the next stretch, say in Costa Rica. Yes, you can get there that way, but you might be better off taking a boat.

If inflation is your big concern, with MetLife's LIG you'll have to make a guess what inflation will be for the next 20 years – and beyond – and plan for it by sizing your LIG purchase accordingly. Realistically, the LIG should be used to provide for those expenses that are not inflation indexed.

What might make more sense would be for PIMCO's TIPS portfolio to have a big inflation-adjusted balloon payment at the end sufficient to purchase a SPIA at age 85 – perhaps even one that is inflation-adjusted. Then you might have two products that go together well.

But if lifetime income is your overriding concern, then you would be wasting money investing to receive a balloon payment to cover a SPIA that there is a two-thirds chance you would never use.

In short, the mismatch between PIMCO's Real Income Funds and MetLife's Longevity Income Guarantee is indeed akin to marrying someone 60 years your senior – a head-scratching pairing.