

Statement of Mark J. Warshawsky  
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For the Joint Hearing of the Departments of Treasury and Labor  
On Certain Issues Relating to Lifetime Income Options for Participants and Beneficiaries  
in Retirement Plans  
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“Products and Strategies for Lifelong Retirement Distributions”

As is well-documented, private sector employers have been moving away from traditional defined benefit pension plans for more than a decade. These plans generally pay benefits to a participant as a life annuity, thereby providing a fixed stream of lifetime income at retirement. Employers have moved toward defined contribution and hybrid plans, that is, individual account plans, which are almost always designed to pay benefits as a lump-sum. There are many reasons for this trend, but the focus of the Departments in your request for information and in this hearing is on the consequences for plan participants in terms of lifelong security during retirement and whether government policy can play a positive role in this particular area. Stated more directly, the operative questions are whether something important is being lost by the steady decline in mandatory annuitization, and if yes, whether there are products or strategies that can replace, in whole or in part, what has been lost. Finally, if such products and strategies are reasonably available, a further question is how the government can encourage their adoption by individual account plan sponsors and participants.

As Towers Watson stated in its April 2010 response to the original RFI, we believe that the desire of all plan participants for flexibility, liquidity, and control, as well as the particular desire of those with impaired longevity for more immediate access to funds, are legitimate considerations for choosing a lump-sum. Indeed, when given the choice, most retirement plan participants take a lump-sum distribution. At the same time, insurance against outliving retirement assets, the simplicity of investment and distribution management for many households, and the peace-of-mind and prudence obtained from a steady income flow, make encouragement, but not the mandate, of annuitization a worthy public policy goal.

In this testimony, I will first describe the features of the insurance product most like the traditional defined benefit pension in its distribution phase – the immediate fixed life annuity—and list some of its advantages and disadvantages. Then I review several other products and strategies – the inflation-indexed immediate annuity, immediate variable annuity, variable annuity with a guaranteed minimum withdrawal benefit, systematic withdrawals from a portfolio of mutual funds, and combinations of immediate fixed life annuity(ies) with systematic withdrawals – and compare their advantages and disadvantages. I also pay attention to the consequences of risks arising from uninsured health and long-term care expenditures for the household.

For the most part, I rely in my statement on past research that co-authors and I have conducted – empirical investigations and stochastic simulation studies modeling the probability distribution of payment streams from these products and strategies given the background risks of uncertain asset returns and interest rates, individual mortality and inflation.<sup>1</sup> We have been careful to get the essential details of product features, including average fee levels, incorporated correctly in this research. The studies generally describe what is available in the retail market, although with the exception of fee levels, many of the features and characteristics carry over to the institutional market. The other members of this panel will focus more on the institutional market, as well as on some other products that are currently available to retirement plan participants.

#### Advantages and Disadvantages of Full Use of Immediate Fixed Life Annuities at Retirement

Research shows that the uncertainty about the remaining length of life during retirement is large and reduces welfare because the household faces a distressing choice – either it should reduce consumption in order to maintain assets to finance a possibly long retirement, or maintain its standard of living and risk having to reduce spending suddenly and significantly if it outlives the average and runs out of money. [1] Things are somewhat better for a couple than an individual because there is some pooling of mortality risk with two members rather just one, but even here risks remain and hard choices must be made. Research shows that full use of an immediate straight life annuity, either for an individual or as a joint-and-survivor payment, at the point of retirement resolves this uncertainty and gives a substantial lift to the welfare of the household. [1]

The full use of fixed annuities also has the virtue of simplicity for investment strategy, where that responsibility and risk falls entirely on the insurer who guarantees the payment flows (which include investment and mortality returns). Simplicity also applies to distribution strategy, where a fixed income flow from an annuity frees the household from having to manage the size of withdrawals from its pool of savings and blocks the opportunity to entertain rash temptations for large, imprudent, expenditures. It is also likely that simplicity is more highly desired and becomes more appropriate as the retired household ages and its cognitive abilities decline.

But this product and simple strategy has several disadvantages as well. A steady fixed flow of income can easily turn into an impediment if a large legitimate need for a significant amount of assets arises suddenly, such as a family emergency, a big uninsured medical or long-term care bill, an uninsured home or auto repair, and so on. A fixed annuity also does not hedge other extant economic risks, in particular inflation and insurer insolvency. If there is inflation, a fixed annuity will produce less and less income in real terms with time, and, more significantly, if inflation picks up suddenly what was originally adequate will unexpectedly shrink in terms of purchasing power. In our research, this inflation risk is found to be significant and can produce real income shortfalls, even though a fixed life annuity gives the highest income flow of all the

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<sup>1</sup> References will be made throughout the text to the published articles listed at the end of the statement.

products and strategies at the point of retirement. [3] In addition, insurer insolvency, although a rare event, could be catastrophic if the relevant state guarantee funds do not cover the losses. An immediate annuity has a shorter horizon (20 or 30 years) than a deferred annuity (which might need to exist for 50 or 60 years through the last payment) and so reduces insolvency risk, but not to zero, even for highly rated issuers.

Two other disadvantages arise from the nature of fixed annuity pricing, which depends mainly on three factors – marketing and administrative expenses, interest rates at the time of issuance, and mortality expectations. Because interest rates are volatile, the prices charged for fixed annuities are also volatile. This can be called timing risk. Two otherwise identical people retiring with the same account balance could receive significantly higher or lower incomes simply because one retired just one year (or even quarter) earlier. For example, my research found that retiring in March 1986 instead of March 1985 would have caused a loss of 27.4 percent of income if the full annuitization strategy were pursued. [2]

With regard to mortality, insurers must price their life annuities based on the expected mortality rates of those who purchase the product. In a voluntary market (as opposed to, say, Social Security and some traditional defined benefit plans, where annuitization is mandatory), those with impaired health and shorter expected longevity are likely to avoid the purchase of annuities. The insurer must therefore consider the resulting downward bias to mortality rates in pricing the annuity. Also annuity purchasers are likely to come from higher socioeconomic groups than non-purchasers, and the wealthy generally have lower mortality. Our research found that the impact of these “adverse selections” add about 10 percent of the annuity price, compared to what would have been charged if the mortality of the general population were to apply. [1] This may be the cause of the complaint sometimes heard that annuities are “expensive.”

### Some Alternative Product and Strategy Solutions

An inflation-indexed immediate annuity reduces the exposure to inflation risk. This product is the same as the fixed annuity except that payments increase with consumer price inflation (although insurers do impose annual caps of 5 or 10%, somewhat limiting the extent of protection). It has the same advantages of hedging longevity risk and simplicity, but suffers from the same disadvantages of illiquidity, the risk of insurer insolvency, timing risk and adverse selection. My research, admittedly based on a small sample, found that the expense load, which includes the cost of adverse selection, on an inflation-indexed annuity was about 5 percentage points higher than on the fixed annuity, perhaps owing to a more limited investment portfolio available to insurers to back inflation-indexed products. [2] To pay for the cost of indexing, the initial and some subsequent payments from an inflation-indexed annuity will pay less than the nominal fixed annuity; if the rate of inflation is lower than expected, a nominal annuity will, after the fact, be a better deal.

An immediate variable annuity delivers variable income for life, with no residual at death. At the time of purchase, the investor selects an assumed interest rate (AIR). This

AIR together with the insurer's mortality guarantee determines how many annuity units the investor gets for his premium. The annual payment to the insured, conditional on surviving, is equal to the number of annuity units multiplied by the value of each unit. The unit value evolves with the net investment performance of underlying funds chosen by the insured, relative to the AIR. The net performance is the gross investment returns net of fund management and insurance fees – these average more than 200 basis points. The payment stream will rise if the net investment return is higher than the AIR. The investor can choose a higher AIR to receive larger payments in the early years of retirement, but then she risks more income volatility later in life and smaller payments if investment performance is poor.

The main advantage of an immediate variable annuity is that it eliminates timing risk – for the same AIR, every investor starts out with the same initial payment. Because it is a life annuity, it also covers mortality risk– payments will continue for life. Depending on the funds chosen, their investment performance and the AIR used, payments might increase, even substantially, over the life of the insured. The disadvantages include lack of liquidity, insurer insolvency risk, and adverse selection; fees can also be significant. There is also some added complexity in the product, which arises from the need to make investment and AIR selections. Finally, by definition, the income flow is uncertain and makes financial planning during retirement more difficult. Our research shows that the volatility of inflation-adjusted income for a variable annuity invested 50/50 in stocks and bonds is among the highest of the products and combinations that we have modeled and the risk of real income shortfalls is higher than for a fixed annuity. [3]

A relatively new product has been developed which adds a guaranteed minimum withdrawal benefit rider to a conventional deferred variable annuity. The deferred variable annuity acts as an investment account while the rider guarantees that, regardless of investment performance and length of life, (nominal) income will not fall below a certain percentage (generally 5%) of the “income base” and could increase if investment performance is good. The income base does not decrease and could increase with the account value. The account value is the actual market value of the invested portfolio that fluctuates with investment performance and may be reduced to zero after subtraction of income payments and fees. With the addition of the fee for the rider to the usual variable annuity fees, total fees come to about 300 basis points, on average.

We have modeled several portfolio choices for this product in our research and here report on the results with a 70/30 stock/bond mix, which may be a sensible choice to maximize the value of the rider without adding too much risk. The advantage of this product is that the account provides liquidity, at least until it (is likely to) runs out if the retiree lives too long. There is no timing risk, and lifelong payments can increase (but will not decrease in nominal terms) with investment performance. The disadvantages include complexity, insurer insolvency risk and fees. Our research shows that the variable annuity with guaranteed minimum withdrawal benefit has a reasonable expectation of a significant account balance, and low volatility around the income flows, but the initial income is relatively modest and is highly likely to fall short of minimum real income targets over the lifetime of the retired person. [3]

A completely non-insured strategy is to take systematic withdrawals from a portfolio of mutual funds. There are many ways in which this can be done; we model in our research the withdrawal of a constant percentage of the mutual fund balance in each period and use the same percentage as is guaranteed by the variable annuity with a guaranteed minimum withdrawal benefit – 5 percent. We assume a 50/50 equity/bond asset allocation – a common balanced fund or target-date fund allocation around retirement – and that investment fees are 120 basis points.

This distribution strategy produces the highest account balances throughout retirement, with a good possibility of a significant residual upon death, according to our research. [3] Hence, liquidity is excellent and there is also no insurer insolvency risk and little timing risk. Although there is some complexity here, some products in the marketplace “automate” the investment and withdrawal functions. The disadvantage of this strategy comes on the income side – it produces the highest probability of not meeting minimum real income targets, and averages the lowest real income flow. [3]

Finally, we have considered some combination strategies using a fixed annuity and systematic withdrawals. The motivation is that the sharp edges of the trade-offs presented above might be smoothed and something more desirable will result. We modeled two combinations – (a) a one-time partial fixed annuity purchase using 30 percent of the value of the retirement accounts while the remainder of the account is distributed through systematic withdrawals from a mix of mutual funds, and (b) a gradual annuitization until age 75 combined with systematic withdrawals from mutual funds, and at age 76 and beyond – full annuitization. For both combinations, we increase the equity share in the mutual fund portfolio because the annuity basically has bond-like investment properties.

The research results do show some nice characteristics for these combinations. The first combination produces quite a bit of liquidity, with account balances nearly as high as those produced by the variable annuity with guaranteed minimum withdrawal benefit, and less volatility. It also gives a higher average real income flow, with some upside potential, than some of the other products and strategies. [3] The second combination, by definition, only provides liquidity for the first 10 years of retirement. Its income characteristics, however, are the best of all the products and strategies that we have modeled. In particular, mean real income flows are the highest, and the risk of shortfalls is the lowest. There is substantial upside potential and the downside is protected. [3] The timing risk of annuitization is hedged by the gradual “laddering” of annuities. Postponing annuitization increases income flows because of the positive impact of the “mortality premium,” that is, the extra return gathered from the pooling of mortality risk becomes greater at older ages. Both combinations have some insurer insolvency risk and higher fees (and the cost of adverse selection), but, by definition, less than the pure annuitization solutions. Because, to my knowledge, these combination strategies have not yet been “automated” in the marketplace, they unfortunately appear to be complex for a household to pursue.

## Particular Consideration of Uninsured Health and Long-term Care Spending Risks

Thus far, I have not paid particular attention to uninsured health and long-term care spending risks beyond a generalized desire for liquidity. In one research article, we did so, explicitly modeling those risks in an analysis of the optimal annuitization and investment strategy for a retiree. We incorporated the results of other empirical research that the mean and variance of uninsured health and long-term care spending increase with age, especially for households with higher wealth and income. The results of our research are that annuitization should begin around the mid 70s for an individual and continue until about the mid 80s for significant annuitization, but still keeping aside about a fifth to a quarter of the original account balance for other liquidity needs. [4] At the initial point of retirement, the investment portfolio should be quite conservative, with only about a third invested in equities; as annuitization starts, however, the optimal equity share rapidly increases, to around 70 percent in the late 70s, whereupon it starts to gradually decline throughout the rest of retirement. [4] The central insight here is that the life annuity, purchased in stages later in life, can serve as a hedge against investment risks and against health and long-term care spending risks, which increase in probability and size with age, in the absence of specific or complete insurance coverage.<sup>2</sup>

## Conclusion

I hope my testimony has depicted part of the rich menu of products and strategies which can be used to provide lifelong income to retirees. They all have advantages and disadvantages, which plan sponsors and retiring participants have to consider and weigh. Some use of life annuities is likely to play a role if income production is a central concern, but it will not be the complete solution. Indeed, much more technical research and market experimentation is needed, and I hope that any guidance coming from the government in this area will be encouraging rather than constraining.

## Research References

[1] Olivia S. Mitchell, James M. Poterba, Mark J. Warshawsky and Jeffrey R. Brown, “New Evidence on the Money’s Worth of Individual Annuities,” *American Economic Review*, December 1999, 89(5), pp. 1299 – 1318.

[2] Mark J. Warshawsky, “Recent Developments in Life Annuity Markets and Products,” *Benefits Quarterly*, Second Quarter 2007, 23(2), pp. 46 – 57.

[3] Gaobo Pang and Mark J. Warshawsky, “Comparing Strategies for Retirement Wealth Management: Mutual Funds and Annuities,” *Journal of Financial Planning*, August 2009, 22(8), pp. 36 – 47.

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<sup>2</sup> As we described in our response to the original RFI, a combination of an immediate life annuity and comprehensive long-term care insurance seems like a promising potential development. See [5].

[4] Gaobo Pang and Mark J. Warshawsky, "Optimizing the equity-bond-annuity portfolio in retirement: The impact of uncertain health expenses," *Insurance: Mathematics and Economics*, 2010, 46, pp. 198 – 209.

[5] Christopher Murtaugh, Brenda Spillman, and Mark Warshawsky, "In sickness and in health: An annuity approach to financing long-term care and retirement income," *Journal of Risk and Insurance*, 2001, 68(2), pp. 225-254.