

The Utility of Illiquidity

Garth A. Bernard

Copyright 2011 by the Society of Actuaries.

All rights reserved by the Society of Actuaries. Permission is granted to make brief excerpts for a published review. Permission is also granted to make limited numbers of copies of items in this monograph for personal, internal, classroom or other instructional use, on condition that the foregoing copyright notice is used so as to give reasonable notice of the Society's copyright. This consent for free limited copying without prior consent of the Society does not extend to making copies for general distribution, for advertising or promotional purposes, for inclusion in new collective works or for resale.

Abstract

It is often assumed that because individuals have a strong emotional desire for control of and access to retirement assets, they have little or no use for illiquidity in retirement, that is, that illiquid vehicles—in particular annuitization—would therefore be a less desirable component of a retirement plan.

This paper debunks this as a result perpetuated due to reasons that have less to do with emotions than with misperceptions and lack of an appropriate context within which to appreciate the value of annuitization. An example is used to demonstrate the value of including annuitization as part of a retirement plan from an analytical perspective, but also from an emotional perspective, suggesting that individuals may have a high, but untapped, utility for illiquidity.

Based on the reasons identified for lack of widespread acceptance of annuitization, the paper suggests several catalysts, most of which are within the control of insurance manufacturers, and some external catalysts, such as economic and tax policy factors that could spark a dramatic reversal of the current situation.

Finally, the paper suggests that some of these catalysts may already be at work and that we may be witnessing the dawn of a new era where annuitization becomes a more commonly exercised option in retirement income solutions alongside other retirement vehicles that are more widely used today.

Liquidity vs. Illiquidity—The Wrong Choice

It is often assumed that individuals have no use for illiquidity, or that illiquidity has low or zero value in retirement planning solutions. However, individuals may have high utility for what is provided in return for illiquidity—a significantly higher income stream, or conversely, “tying up” considerably less assets to produce a given level of income than would be possible with liquid vehicles (Ameriks, Veres, and Warshawsky, 2001). But the “utility of illiquidity” may not be uncovered if the wrong question is asked. For example, which would you prefer, “income with liquidity” or “income without liquidity”? Obviously, you should immediately select the first option in the absence of any quantification of the income referenced in each option. If the choice were instead, “\$100 of monthly income with liquidity” or “\$1,000 of monthly income with no liquidity,” you would not so quickly decide on your preference if you had a high utility for income.

Behavioral Research May Be Flawed

Still, behavioral economists and academics suggest that individuals are unlikely to annuitize a lump sum even if annuitization provides a substantially higher level of income because there are no cash values or death benefits provided (Brown, Kling, Mullainathan, Sendhil, and Wrobel, 2007). Behavioral scientists and academics are not infallible—they may simply be wrong in this case! The behavioral studies typically provide subjects with a choice between a lump sum and the income stream produced by the annuitization of that lump sum and then test for the subject's preferences. It is easy to see why there could be an overwhelming preference for "a lump sum." The preference is often couched in emotional behavioral terms, such as a high preference for control of assets, or access to assets, or other emotional terms. And as further evidence, it is often pointed out that very few individuals annuitize lump sums when given the option to do so. The essence of the result is to suggest that individuals have a very high preference for money available today and place a very high discount rate on money available in the future (Loewenstein and Prelec, 1992). The effect may be particularly pronounced when the lump sum is the entire amount of subjects' investable assets. It is hard to disagree with the conclusions from the empirical evidence when subjects are faced with this choice in a vacuum.

The problem with the choice between the "lump sum" and the "annuitized income stream" is that this is not the actual choice that retirees face when they have retirement expenses they need to offset with income. Sitting on the lump sum is not an option. It must be converted into income. The real choice is thus between "one income stream and access to the remaining asset after the income is withdrawn or distributed from the original asset" and "a significantly higher income stream, but without access to the asset that generates that income stream."

The Pension Analogy

If the choice is framed this way, the *opposite* conclusion may emerge. For example, in the real world, the choice may present itself as, “defined benefit pension” or “401k.” The utility for annuitized income (the defined benefit pension in this case) measured, albeit after the fact, among those who receive annuitized income, may be higher than the utility for income distributions with residual liquidity among those who must rely on withdrawals from a lump sum such as a 401k balance (MetLife, 2002).

Couching the annuitization choice in terms of a “pension” may lead to behavioral results that are quite different than the conventional wisdom may suggest. However, it may not be practically possible to have someone “experience” a defined benefit pension—and thereby be able to measure their utility or preference for annuitized income—unless they actually have such pension benefits as a matter of fact rather than as a matter of choice.

Thus the anecdotal evidence of a different behavioral effect may only be available by comparing the utility for annuitized income among those who were provided a defined benefit pension with the utility for lump sums among those who had a choice and chose a lump sum benefit or had no choice except a lump sum.

The Proper Context for Behavioral Conclusions

Still, once the appropriate choice is identified, a better read may be possible on retiree preferences and utility. However, what is even more important is that the choice be put into the appropriate context. In a retirement planning setting, the individual retiree may have a certain amount of expenses that needs to be offset by income. Thus the amount of income needed is a fixed target, and it is really the amount of assets needed to be deployed that should be articulated in the choice among alternatives.

Let's use a simple example to demonstrate what the appropriate context might look like. Assume that a newly retired 65-year old male wishes to generate \$1,000 of monthly income and leave as much as possible for heirs. Ignore inflation. This will be a consistent assumption for all options so it will not hurt the demonstration. Assume that the retiree is in the 15 percent tax bracket and has only nonqualified funds. The 15 percent tax bracket has been intentionally selected so as to be indifferent to receiving distributions, such as capital gains or taxable income, as far as the simple example is concerned. Assume the retiree has two options for generating retirement income. Option A is a systematic withdrawal program from a balanced portfolio. Option B is annuitization of all or part of the retiree's asset portfolio.

- **Option A:** Assume this retiree is willing to tolerate a risk of not more than 5 percent and the asset portfolio will be depleted before age 95. Assume the portfolio is 50 percent equities and 50 percent bonds, and that the annual expenses are 1 percent for the equity portfolio and 0.75 percent for the bond portfolio. In this case, the maximum initial withdrawal rate that should be taken from this portfolio is around 5.2 percent (based on Monte Carlo analysis.) To net \$1,000 per month after taxes, the amount of assets needed is \$271,493.
- **Option B:** Assume annuitization is available at a rate of 8.10 percent and there is a tax exclusion ratio of 62 percent (based on annuity quotes as of March 2009). This means that for every \$100 annuitized, \$8.10 of annual income will be generated pre-tax and 62 percent of that income is excludable from taxable income. This retiree will need to annuitize \$157,103 of assets in order to generate \$1,000 per month of after-tax income.

The choice is, more specifically: (Option A) utilize \$271,493 of assets to withdraw the income, with full access to any remaining assets for heirs upon death; or (Option B) annuitize \$157,103 (approximately 58 percent) of the asset to generate all of the income needed and retain \$114,390 (approximately 42 percent) of asset for liquidity purposes and invested for future growth to maximize for heirs.

When viewed in this context, Option A isn't the obvious choice for every 65-year old male retiree, even those with a high degree of utility for liquidity. In fact, several other factors are suggested below which could potentially make Option B a much better choice for some 65-year old male retirees:

- ***Access to liquidity under Option A has a significant cost.*** The obvious cost is that substantially more assets are consumed to generate the retirement income. But there is also a hidden and insidious cost. If liquidity is accessed, the \$1,000 of monthly income will no longer be attainable within the retiree's risk requirements, or will be attainable only at substantially higher risk. For example, let's assume the retiree needed just 10 percent of the asset, or \$27,149.30, right at the point of retirement. Under Option A, he would have to settle for \$900 per month to maintain the 5 percent risk of depletion by age 95. Alternatively, he could increase the withdrawal rate to 5.8 percent to maintain the \$1,000 per month objective but this increase in withdrawal rate would subject the retiree to a 12 percent risk of depletion by age 95, or the retiree could bear the desired 5 percent depletion risk, but now only to age 88 at the higher withdrawal rate.
- ***A market decline may be more devastating under Option A than under Option B.***
- For example, if just a 10 percent decline in the market values of the assets occurred just prior to the retirement date, the impact on Option A would be similar to that described above—a significant decline in the standard of living or alternatively, a substantial increase in depletion risk. Under Option B, there would have been no impact on the standard of living. In the example given, Option B could withstand a 42 percent market drop (i.e., elimination of the non-annuitized assets) without an impact on the retiree's standard of living. However, there would be fewer assets available for heirs.
- ***Some forms of liquidity in retirement may be just an illusion!*** If the income supported by vehicles with liquidity represents income that should be offsetting *essential* expenses, such as food, shelter and clothing, then the retiree really should not be accessing that liquidity. Thus, in practice, the liquidity may be in name only. Furthermore, there is the distinct possibility that any liquid assets that are being drawn upon to generate income may be depleted. While Monte Carlo analysis simply describes the "a priori" chance of depletion among all possible scenarios, if the economic path that emerges happens to be among the "bad" scenarios, the chance of depletion will be substantially higher than described by "a priori" Monte Carlo analysis.
- ***Illiquidity has a substantial benefit.*** By accepting some illiquidity under Option B, a high degree of income leverage is experienced, that is, substantially less assets are used to generate the desired level of retirement income, leaving "free assets" not required to produce income, *when compared to Option A*. Such "free assets" could be used to cover the risks of health events, as well as to more efficiently provide bequests via life insurance (assuming the retiree is insurable.) And, because the

illiquid portion of the assets generating the income is “hidden” (annuitization, like a defined benefit pension, is a “hidden asset”), it cannot be spent, lost, stolen or shaken by the markets. Like the hidden illiquid foundation of a house, annuitized income may be a solid foundation for a retirement plan.

- ***Option B has liquidity.*** When applied in context, annuitization is not the all-or-nothing choice and is often misconstrued in opinions and commentary on the subject of annuitization. In fact, the liquidity provided under Option B may potentially be accessed without significantly impacting the income generated or the risk of depletion. The impact of accessing the liquidity under Option B is on the potential bequest, but the result may be no worse than the potential impact to heirs under Option A.
- ***Upside potential for the benefit of heirs.*** Option A solutions are often thought to provide great potential upside on asset values. Option B also has this same characteristic, but even more efficiently. The challenge with Option A is withdrawals from the asset portfolio could severely hamper potential upside performance. However, the liquid asset in Option B is free to grow without the strain of withdrawals, so it could have more substantial upside potential. Option B may thus outperform Option A in terms of upside potential over longer time horizons.
- ***Option B may provide more investment control and flexibility than Option A.*** Option B has no distributions from the liquid portfolio. In addition, it has a 58 percent allocation to a fixed income type vehicle. Thus the other 42 percent could potentially be aggressively invested. Presumably, the residual \$114,390 could even grow to replace the entire original asset of \$271,493 if properly invested and managed. On the other hand, while there could be optimistic scenarios where Option A would generate more assets than Option B, there are constraints on how aggressively the assets could be invested under Option A because of increased risk of depletion. For example, if Option A were invested 100 percent in stocks, the risk of depletion by age 95 would climb from 5 to 13 percent.
- ***Now consider inflation that was previously ignored.*** Under Option A, if withdrawals were adjusted to keep pace with inflation, a lower withdrawal rate would be needed to maintain the desired depletion risk, and thus the impact of inflation would be to increase the amount of assets needed for the solution. For example, with an assumed inflation rate of 3 percent per year, the initial withdrawal rate needed to maintain a 5 percent risk of depletion by age 95 would be 3.6 percent. Thus the amount of assets needed would be \$392,157, or about 44 percent higher than the original example. Under Option B, the annuitization option could be to an inflation-indexed immediate annuity that would cost about 25 percent more than the unadjusted annuity. Thus \$196,379 or 50 percent of Option A assets would be annuitized.

When presented in the appropriate context, it is clearly not the case that Option A, “income with full liquidity and no annuitization,” is automatically preferable to Option B, “same total income including annuitized income but using fewer assets.” It would be safe to venture

that if presented with this type of comparison, perhaps many more individuals would choose to annuitize a portion of their assets. This context also refutes the myth that annuitization and liquidity are mutually exclusive. The paradoxical result is that *annuitization—an illiquid retirement vehicle —enhances liquidity in the retirement solution.*

Note: Results in the examples used are based on the age of the retiree's (or retirees if joint lives), income tax bracket, the portion of qualified and nonqualified assets, annuity rates, individual tolerance for depletion risk, and assumptions regarding the performance and fees associated with equities and bonds.

Why Do So Few Individuals Annuitize Today?

So what explains the observation that few individuals annuitize when given the option? There may be several reasons for this:

- They may not be applying the appropriate context or framework within which to appreciate the value of including annuitization relative to alternatives that exclude annuitization, such as demonstrated in comparisons between Option A and Option B in the examples above.
- They may not at all understand how the annuitization option works or its benefits; that is, they may lack the basic financial literacy required to properly consider exercise of such an option.
- The “lifetime” benefit of annuitization may be over-emphasized while individuals tend to underestimate their potential lifespan (Sondergeld and Greenwald, 2005). There is a common misperception that death almost always occurs before the age of average life expectancy, when in fact, just 50 percent of deaths are actually expected to occur by that time—neutralizing the utility of guaranteed lifetime income.
- They may be lead to view annuitization as a bet or wager that they are unlikely to win. The perception of annuitization as a “bet” is probably more likely to occur when annuitization is viewed outside the context of a financial risk management device.
- They may rely on inaccurate or incomplete sources of information; that is, the sources of information may also lack financial literacy about annuitization.
- They may be unaware of the tax exclusion ratio that applies to the income generated when nonqualified funds are annuitized—a substantial portion of the annuitized income is excluded from current taxable income.
- They may be unaware of the mortality or longevity “credit” included in the annuitized income stream above and beyond investment returns. This mortality credit may be considerably higher than the investment return depending on the age at which the annuitization option is exercised.
- They may be unaware of the actual numerical amounts involved and are thus simply not in a position to make an effective financial decision.
- Their beliefs about alternatives for income generation may be unfounded. For example, they may assume they can generate significantly higher withdrawal rates from their lump sum assets (MetLife, 2008).

- They are not comfortable or equipped to assess how annuitization compares to alternatives as these options may relate to the complex, personal financial puzzle of retirement. They may gravitate to measures of assessment with which they are more comfortable, but which may not be particularly effective for assessing the options. For example, they may simply use degree of liquidity or rates of return to the exclusion of other appropriate measures of efficacy of the retirement income solution.
- They may desire the simplicity of alternative “single product” solutions that appear to broadly address all or most of the retirement needs without the realization that oversimplification may sub-optimize many of the critical outcomes relevant in retirement.
- They may be unaware that solutions that combine annuitization and other financial vehicles may address some or all of their concerns about solutions that use annuitization alone or solutions that exclude annuitization completely.
- The language and marketing methods used to communicate and connect with consumers about the value of annuitization maybe a turnoff to consumers.
- The interest rate environment during which the annuitization option is considered may be low by historical standards, and individuals may fear “locking in low returns” without recognizing that delaying annuitization (Dellinger, 2007), even for a brief time or indefinitely while taking income from alternative sources, may be very unlikely to provide a better result (i.e., they forego the value of all the mortality credits that would have been payable and which may be impossible to recover in the future via other means, including delayed or laddered annuitizations along with potentially higher future interest rates).
- They may be concerned about the long-term financial stability of the insurance company providing the annuity—lifetime annuity payments may have to be paid for many decades.
- Finally, they may truly have an *informed* and complete lack of utility for any illiquidity or its potential benefits.

The Catalysts that Could Change the Status Quo

What is needed to dramatically change the acceptance of annuitization as a valuable component of a sound retirement plan? Based on the variety of reasons suggested for the lack of acceptance, the catalysts are quite clear and can be categorized into microcatalysts that are within the control of manufacturers and macrocatalysts, which are a function of the external environment.

The categories are detailed below:

Microcatalysts

1. **Education:** Consumers need to be educated regarding annuitization; that is, competent sources of financial literacy information about annuitization and its effective use in retirement solutions.
2. **Technical Training and Sales Support Tools:** Advisors need access to the training and tools that would enable them to understand the true value of annuitization and explain that value to clients in a meaningful context.
3. **Context:** The issue of illiquidity must be put in the appropriate context that allows consumers to fully appreciate how illiquidity, where suitable, can be a positive benefit (or “hidden asset”) rather than a liability in a retirement plan.
4. **Marketing:** The language and marketing methods used to communicate with consumers need to be significantly improved.
5. **Emotionomics Training:** Advisors need the training necessary to effectively connect at the emotional level with clients preparing for retirement, while at the same time educating them about a new frame of reference for retirement finances, which may differ significantly from the accumulation and investment frame of reference to which they may be more emotionally and technically accustomed.
6. **Innovation:** Annuity manufacturers need to deliver updated income annuity products, as well as innovate in this area. With few exceptions, annuity manufacturers either offer no income annuity products or, if they do offer any, the products may be years or even decades old. For example, it is possible to design income annuities with some degree of liquidity.
7. **Incentive Structures:** The traditional advisor compensation structures—including upfront commissions and asset trailers—that have worked effectively for accumulation, may not be as effective as compensation structures that have been redesigned specifically for the distribution phase. For example, if there were a component of the commission or advisory fee, based on *the amount of retirement income*, generated by the advice as well as a component driven by the remaining assets, the advisor would clearly have a strong incentive to ensure that the most

income is generated for as long as possible using the least amount of the retiree's assets while growing the remaining assets.

Macrocatalysts

8. Interest Rates: Much of the modern debate about annuitization has occurred in an environment of very low interest rates where fixed income vehicles are at a decidedly competitive disadvantage to equity based vehicles. However, should interest rates increase significantly, or should equity markets experience severe declines, the utility for annuitization (both immediate income annuities and deferred income annuities) may increase significantly for retirees and for preretirees, regardless of the illiquidity tradeoff.

9. Tax Policy: Certainly, if there were a change in tax policy that provided additional tax incentives for the use of annuitization within retirement plans, there would be a potential natural increase in annuitization rates as well as increased interest and emphasis on the part of product manufacturers and distributors who might enjoy higher sales.

10. Lead Users: Despite the lack of information and education regarding annuitization by insurance manufacturers, there are many examples of self-learning, adoption and uptake of annuitization by lead users in the advisor community. Such lead users have articulated these financial devices within the retirement planning processes and offered solutions they have developed and refined on their own.

Conclusion

The value of annuitization and the benefits of illiquidity within retirement plans may potentially be hidden beneath misconstrued behavioral observations and an ineffective context within which to view these financial devices. In addition, there is a host of factors related to communication and innovation (or lack thereof) that appear to hamper the adoption of annuitization. Many of these factors are within the control of manufacturers, have been in place for decades, and may be quite easily addressed, yet few steps have been taken to address them. However, the advisor community appears to be taking a leading role in developing powerful retirement income frameworks and solutions that include annuitization. Finally, there are external factors, such as tax policy and interest rates, which could be major catalysts in spurring the adoption of annuitization.

References

- Ameriks, John, Veres, Robert and Warshawsky, Mark J. (2001). "Making Retirement Income Last a Lifetime," *Journal of Financial Planning* (December 2001).
- Dellinger, Jeffrey K. (2007). "Good News At The Starting Gate: When To Commence Income Annuities," *Retirement Income Solutions Enterprise Whitepaper*.
- Loewenstein, George, and Prelec, Drazen, (1992). "Anomalies in Intertemporal Choice: Evidence and an Interpretation," *The Quarterly Journal of Economics* (May 1992); 573-97.
- MetLife (2002). "MetLife Retirement Crossroads Study: Paving the Way to a Secure Future," *MetLife Research Study*.
- MetLife (2008). "Retirement Income IQ Study," *MetLife Mature Market Institute*.
- Sondergeld, Eric, and Greenwald, Mathew (2005). "Public Misperceptions About Retirement Security," *LIMRA International, Society of Actuaries, and Mathew Greenwald & Associates*.
- Brown, Jeffrey R., Kling, Jeffrey R., Mullainathan, Sendhil, and Wrobel, Marian (2007). "Why Don't People Insure Late Life Consumption? A Framing Explanation of the Under-Annuity Puzzle," *National Bureau of Economic Research Working Paper*.