SECURITY IN UNCERTAIN TIMES: POLICIES FOR INCREASING
THE POPULARITY OF LIFE ANNUITIES AMONG RETIREES

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ABSTRACT

Life annuities offer retirees an assured income stream for as long as they live. This makes it surprising that they are unpopular in most markets where their purchase is not compelled by government policy. With the numbers of retirees in the population set to increase dramatically, this low take-up rate of life annuities could exacerbate financial insecurity. Consequently, it is in society’s interest to implement non-coercive policies that increase annuitization levels. Although there is research that has focused on the possible causes of low annuitization rates, much of this research falls short of suggesting comprehensive strategies for persuading retirees to annuitize their savings.

This article discusses what mix of policies would increase the attractiveness of life annuities. It does this by determining the salient characteristics of the few markets where life annuities are popular. It then suggests how the correct policy settings could make such characteristics a feature of the mainstream annuity market. It also discusses other policies, including limited tax incentives or subsidies on annuities that might play an important role. It is argued that policy innovations such as these are preferable to making the purchase of annuities compulsory. This is because the one-size-fits-all approach will not be ideal for everyone, and it interferes with freedom of choice, an important right in a capitalist society. An alternative is to make annuity purchases a default choice. But this is effectively compulsion by stealth as it relies on inertia and, therefore, carries some of the disadvantages of mandatory annuitization. The article concludes with a discussion of how the appropriate marketing and innovation of different life annuity products could supplement annuity-maximizing policies and further improve annuitization rates.

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I. INTRODUCTION

Each of life’s phases has advantages and disadvantages. Retirement gives people an opportunity to enjoy comparatively generous amounts of spare time and freedom. On the downside, retirement is typically characterized by a restricted ability to increase wealth. Consequently, how retirees invest and consume their retirement savings can have a major impact on their well-being. The aging of the population means that increasing numbers of people will soon face decisions regarding their retirement savings. Furthermore, such decisions will become
increasingly important if the possibility of Social Security benefits becoming less generous eventuates.¹

An option available to retirees and those facing retirement is to convert part or all of their savings into a life annuity. A life annuity is a very old instrument,² which offers a regular income stream to retirees until death. This provides retirees with a life income that is not dependent on the performance of financial markets. Despite the inherent security of annuities, in most markets, including the mainstream U.S. market, very few retirees choose to annuitize any of their wealth. The lack of annuitization in a world of potentially weak investment markets and uncertain Social Security entitlements will likely contribute to financial insecurity for many retirees.

However, there are some markets where life annuities have a high take-up rate. This article examines these markets and what we can learn from them to improve annuitization rates in the mainstream U.S. market. This article also evaluates the suitability of other policies aimed at increasing mainstream annuitization levels. Specifically, Section II of the article discusses research, which concludes that annuitization rates should be high and compares this to the very different present reality. The disparity between the two is known as the “annuity puzzle.”³

Section III examines the various reasons for widespread low annuitization rates. Some of these reasons are due to inherent characteristics of life annuities and the environment that they operate in and so have limited scope for change. Other factors leading to low annuitization, though, could be mitigated through appropriate policy responses. Section IV examines certain markets that are characterized by high annuitization rates and discusses which characteristics of those markets have led to the high uptake. Section V then makes policy

suggestions for increasing annuitization rates. It does this by proposing policies aimed at replicating important characteristics of high-annuity markets in the mainstream U.S. annuity market. It also critically evaluates the introduction of other policies aimed at increasing community-wide annuitization rates, including the use of limited tax incentives or subsidies. Section VI concludes.

II. LIFE ANNUITIES AND THE ANNUITY PUZZLE

In the simplest sense, life annuities are an entitlement to receive a regular payment for the remainder of one’s life. Some life annuities commence almost instantly after the annuity contract is entered into. Others are deferred, and the annuity payments only commence upon the annuity holder reaching a specified age. Each payment received by the holder of a life annuity is usually a set amount; though, sometimes payments are indexed to inflation or some other figure.4 As an example of a deferred, non-indexed life annuity consider Bob, who is currently sixty-three. Bob pays $100,000 today in exchange for an annuity provider making regular payments amounting to $10,000 a year beginning when Bob turns seventy. Such payments continue for the rest of Bob’s life. The annuity provider pools and invests Bob’s and other annuity holders’ funds and slowly withdraws as payments become due. There are other types of annuities as well. Some life annuities offer a spousal survivor benefit, and some include a minimum payment period so that if the annuity holder dies within that time frame, his heirs will receive annuity payments for that period.5 Other annuities, called variable annuities, have payments based on investment returns.6 Although government Social Security entitlements can be considered one form of a life annuity, this paper focuses on life annuities that are voluntarily purchased. Furthermore, the focus will be on traditional annuities that offer stable returns rather than on variable annuities; though, the issue of variable annuities will be briefly discussed in the context of policies aimed at increasing annuitization rates.

Traditional life annuities offer a secure retirement income that few instruments can match. Their returns are free from investment risk and

4 Since the 1990s, life annuities that are inflation-indexed have also been available in the United States. See Jeffrey R. Brown et al., The Role of Real Annuities and Indexed Bonds in an Individual Accounts Retirement Program 1 (Nat’l Bureau of Econ. Research, Working Paper No. 7005, 1999) [hereinafter Brown, Role of Real Annuities].
5 Annuities with a minimum payment period are, essentially, a combination of term and deferred life annuities.
6 Some variable annuities also have minimum payment or asset value guarantees; though, ultimately, these come at a cost to the annuity holder. See Shi-jie Jiang & Matthew C. Chang, Variable Annuity with Guarantees: Valuation and Simulation, 14 J. MONEY, INV. & BANKING 74 (2010).
longevity risk. Moreover, if they are indexed, they are also free from inflation risk. Previous modeling has found that, in the absence of a bequest motive, it is logical for retirees to fully annuitize their wealth if annuities are available at an actuarially fair price. The reasoning behind this rests on the superior consumption one can achieve with a life annuity compared to other wealth decumulation schemes. Without a life annuity, a retiree could consume his retirement savings under the assumption that he will have average longevity. This would allow him to enjoy the same retirement income as if he had purchased an actuarially fair life annuity for as long as he does not outlive his assumed longevity. However, it will also mean that if he does outlive his expected longevity, he will run out of retirement savings. On the other hand, if such a retiree wanted to self-insure (without a life annuity) against the risk of outliving his expected lifespan, he could use up his wealth under the assumption he will live to an age that he is statistically unlikely to reach, such as one hundred years. Although this will almost ensure that he does not run out of wealth, it will lead to a substantially lower annual income than the actuarially fair life annuity would have provided him. In other words, the benefit of an actuarially fair annuity is that it allows the purchaser, irrespective of actual lifespan, to have the same annual income that he would have had if he had consumed his wealth by the end of his actuarially expected life.

Even when annuities are sold at a price above their actuarially fair value, modeling has indicated that retirees without a bequest motive will generally benefit from annuitizing their wealth. This is because life annuities with a realistic price premium still offer a return superior to

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7 Investment risk is the risk of investments falling in value; whereas, longevity risk is the risk of outliving one’s savings. See Janemarie Mulvey & Patrick Purcell, Cong. Research Serv., R40008, Converting Retirement Savings into Income: Annuities and Periodic Withdrawals 2–4 (2008).


10 Id.

11 Id.

other low-risk investments,\textsuperscript{13} given that a non-annuitizing taxpayer will typically decumulate his wealth in a way that accounts for the risk of living longer than the average life expectancy. Furthermore, according to certain modeling, even the desire to undertake uneven consumption patterns in retirement would still result in retirees benefiting from annuitizing a large portion of their wealth.\textsuperscript{14}

Despite such modeling and data, there is a widespread annuity puzzle, in that life annuities have generally been unpopular in most markets where their purchase is not mandated.\textsuperscript{15} An example is the low uptake of annuities by those receiving distributions from U.S. defined contribution plans, such as 401(k) plans, where those plans feature an annuity option.\textsuperscript{16} The fact that annuitized money cannot be bequeathed might intuitively appear to account for low annuitization rates. However, a bequest motive does not explain why the vast majority of people do not at least partially annuitize their funds, given that most people balance a bequest motive with a desire to maintain a certain standard of living. The next section will discuss this in detail and examine other possible explanations for the existence of the annuity puzzle.

\begin{enumerate}
\item Thomas Davidoff et al., Annuities and Individual Welfare, 95 AM. ECON. REV. 1573, 1576 (2005).
\item Id. at 1587-88.
\item See Shlomo Benartzi et al., Annuity Puzzles, 25 J. Econ. Persp. no. 4, 2011 at 143, 149–50 (discussing the very small size of the individual immediate fixed life annuity market in the United States where annuities are purchased directly from life insurance companies); Jeffrey R. Brown, Financial Education and Annuities, OECD JOURNAL: GENERAL PAPERS, no. 3, 2008 at 181–82 (discussing research that shows low annuitization rates are a feature of many countries); Joachim Inkmann et al., How Deep is the Annuity Market Participation Puzzle? 24 REV. FIN. STUD. 279, 285 (2011) (finding that 5.9\% of people in England voluntarily purchase life annuities); James Poterba et al., Utility Evaluation of Risk in Retirement Saving Accounts 31 (Nat’l Bureau of Econ. Research, Working Paper No. 9892, 2003).
\item See John J. Topoleski, Cong. Research Serv, R40707, 401(k) Plans and Retirement Savings: Issues for Congress 25 (2011) (citing Hewitt Associates surveys that state that typically less than 10\% of 401(k) fund members offered a choice to annuitize will elect to do so); Stacy L. Schaus, Annuities Make a Comeback, 12 J. PENSION BENEFITS, no. 4, 2005 at 34, 35 (finding that in 2005 only 6\% of 401(k) members offered an annuity chose to undertake such an option). Other research indicates that in the case of defined contribution plans that offer annuities, approximately 48\% of working members declare an intention to annuitize. See Jeffrey R. Brown & Mark J. Warshawsky, Longevity-Insured Retirement Distributions from Pension Plans: Market and Regulatory Issues 35 (Nat’l Bureau of Econ. Research, Working Paper No. 8064, 2001). When these participants were contacted again between the ages of fifty-nine and sixty-nine, few had actually followed through with their intention. See Irena Dushi & Anthony Webb, Household Annuitization Decisions: Simulations and Empirical Analyses, 3 J. PENSION ECON. & FIN. 109, 129 (2004).
\end{enumerate}
There are several possible explanations for low annuitization rates. Broadly speaking, they can be split into two categories. First are explanations attributing low demand to the fixed or unchanging characteristics of life annuities and to the environment in which they operate.\(^\text{17}\) Second are explanations attributing low demand to the variable characteristics of annuities. In general, there is little that can be changed about the first category. Individuals, for example, desiring to bequest their wealth or pool risk themselves through a domestic partnership will find that the very nature of annuities inhibits their goals. On the other hand, investors worried about high annuity prices or default by the servicer would reconsider annuity investments if price and default risk were reduced. Below is a more detailed examination of the fixed and unfixed characteristics that influence annuity uptake.

### A. EXPLANATIONS RELATED TO THE FUNDAMENTAL NATURE OF TRADITIONAL LIFE ANNUITIES

#### 1. Pooling of Longevity Risk Through Domestic Partnerships

Marriage and other partnerships result in a pooling of longevity risk. Just as a purchased life annuity can be considered the pooling of longevity risk among the annuity purchasers, marriage and similar partnerships provide a smaller, in-house form of such pooling.\(^\text{18}\) As a result, the purchase of annuities by married couples should be less common than among single people. There is conflicting evidence, however, regarding the extent to which this plays a role in reducing the amount of annuitized retirement wealth. Empirical studies have found that being married makes annuitization less likely;\(^\text{19}\) though this might, to some degree, be due to other reasons such as marriage making a bequest motive more likely. In contrast, a separate study using survey

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\(^\text{17}\) Inflation-indexed life annuities can be considered to fit into this category, despite their income being fixed in after-inflation rather than nominal terms. Such annuities not only insure against investment and longevity risk, but also inflation risk.


\(^\text{19}\) See Jeffrey R. Brown, *Private Pensions, Mortality Risk, and the Decision to Annuitize*, 82 J. PUB. ECON. 29, 59–60 (2001) [hereinafter Brown, *Decision to Annuitize*] (finding this to be the case in the United States); see also, Inkmann et al., supra note 15, at 282 (finding this to be the case in the United Kingdom).
data found that married people were no less likely than single persons to convert part of their Social Security entitlements to a lump sum when hypothetically presented with the opportunity to do so. In addition, the fact that we do not see much annuitization upon the death of one spouse indicates that the pooling of risk among married people might not be a major factor in the lack of voluntary annuitization.

2. Pre-Existing Annuitization

Modeling has indicated that the presence of a pre-existing annuitization in the form of Social Security entitlements, as well as entitlements to defined benefit pensions, discourage further annuitization of retirement wealth. The existence of pre-annuitized wealth is a real part of the landscape in which the annuity market operates.

It is unclear to what extent pre-existing annuities act as a deterrent to the voluntary annuitization of retirement wealth. One study found that a substantial percentage of people were willing to give up half of their Social Security benefits in exchange for a lump sum. The fact that so many were willing to give up a portion of their Social Security entitlements might indicate that current Social Security entitlements are not the main reason for limited annuity demand.

20 Brown, New Evidence, supra note 3, at 10.
23 Although it could be argued that this could to some extent be changed, for instance, by abolishing Social Security, the practical reality is that the presence of pre-annuitized wealth is an inherent feature of the environment in which voluntary annuities exist. Similarly, the existence of bequests and domestic partnerships are factors that can be regarded as relating to the given environment that annuities operate in, even though in theory there is the unlikely possibility that government policy could discourage these. For instance, the government could dissuade bequest motives through high and broad estate taxes.
24 Brown, New Evidence, supra note 3, at 7; see also Inkmann et al., supra note 15, at 9–10 (finding that in the United Kingdom, the presence of a larger private pension—typically the result of mandatory annuitization laws—was correlated with greater voluntary annuitization). However, the authors noted that this does not necessarily mean that the presence of pre-annuitized wealth does not crowd out voluntary annuitization, as both could be correlated to other factors such as financial wealth. Inkmann et al., supra note 15, at 9–10.
3. Bequest Motive

A traditional life annuity involves the taxpayer giving up the option of bequeathing his annuitized wealth. This is because annuities are designed to exhaust one’s wealth entirely by the time of death. However, to some degree, a joint life and survivorship annuity achieves some of the aims of bequeathing wealth to a spouse.

While people generally wish to bequeath a portion of their wealth, it does not mean they wish to bequeath all their wealth; if they did, they would choose to live a life of poverty so as to accumulate as much wealth as possible for their heirs. Thus, partially annuitizing one’s retirement wealth does not conflict with a bequest motive.

Although the data is not determinative, there is evidence that a bequest motive does not play a major role in people choosing not to annuitize. One study, based on surveys of people faced with the option of annuitizing their retirement wealth, found that the value people placed on bequeathing their assets was not a major determinant of their proposed annuitization decisions. Another study based on survey data showed similar findings, where those with a will or testamentary trust were not found to be comparatively more likely to prefer a lump sum over an annuity. These studies, as well as another based on actual annuitization decisions, found that the presence of children did not affect the likelihood of annuitizing retirement savings. Although these two studies did find that being married was correlated with a lower willingness to annuitize, this could be explained by the fact that marriage results in the pooling of longevity risks. In contrast, an internet survey found that people were approximately ten percentage points more likely to choose a life annuity option if premature death hypothetically led to the proceeds being left to children rather than a charity.

Some life annuities have features such as a guaranteed minimum payment period, which, in the event of the annuity holder dying in that period, will pay the annuity payments for the remainder of that period to the annuity holder’s heir. However, as stated earlier in this article, such annuities are not strictly speaking pure life annuities; rather, they are a combination of term annuities and deferred life annuities.

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26 See Davidoff et al., supra note 13, at 1583.
27 Brown, Decision to Annuitize, supra note 19, at 56–58.
28 Brown, New Evidence, supra note 3, at 11. This study was based on surveys asking people whether they would give up part of their social security entitlements in exchange for a lump sum.
29 Id. at 17; Brown, Decision to Annuitize, supra note 19, at 56–58; Inkmann et al., supra note 15, at 292–93.
30 Brown, Decision to Annuitize, supra note 19, at 58–59; Inkmann et al., supra note 15, at 292–93. But see Brown, New Evidence, supra note 3, at 16, finding no correlation between marital status and willingness to prefer an annuity.
31 Brown, Framing, supra note 21, at 13.
this suggests bequest motives may have some influence on the decision to annuitize, on the whole they have not proven to be a primary factor.

4. Superior Investment Opportunities

Since life annuities are one of several possible uses of retirement funds, their low uptake might be due to the availability of superior investment opportunities. Specifically, some modeling has indicated that most retirees are better off investing the bulk of their funds in equities and only purchasing traditional life annuities a few decades after retirement. This modeling is based on the fact that equities offer better potential returns than the underlying instruments in which annuity providers invest annuity capital. In other words, while life annuities offer a superior way to consume one’s income, equity investments can often generate more retirement income. The less actuarially fair the annuity, the more likely this is to be the case.

However, it is possible to challenge the modeling on which this argument is based. First, the extent to which retirees should comparatively prefer equity investments over life annuities is highly dependent on the size of the equity premium. For instance, there is modeling indicating that 80% of most retirees’ wealth should be annuitized when the equity premium is at 2%; whereas only about half the amount should be annuitized when the equity premium is at 7%. Given that historically there is considerable deviation in the size of the equity premium in different decades, the equity premium for future years cannot be predicted. Indeed, the last few years of market performance clearly illustrate that retirement savings heavily invested in shares can suffer a substantial fall in value.

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33 Id.
34 Id.
35 Id. at 61.
Furthermore, the modeling that argues that retirees are better off purchasing shares over annuities for their initial retirement period generally assumes that equity returns follow a normal distribution pattern. However, this assumption has been challenged, meaning that such modeling might be vastly understating the risk that equity investment entails. Thus retirees, who by nature have limited future earning ability and are more likely to be risk averse might be better off purchasing annuities instead of equity.

The available empirical evidence indicates that equity investment opportunities probably don’t play a major role in low annuitization rates. On the one hand, evidence of higher annuitization rates following poor share market performance suggests that equity investment, to some extent, does crowd out annuitization. But in absolute terms, annuitization rates typically remain very low during periods of poor share market performance, suggesting that any such crowding-out effect is limited. Furthermore, the fact that annuitization rates are generally low at all times in most markets indicates that the vast majority of people do not follow the abovementioned pro-equity modeling that advocates initially investing in shares and following up by annuitizing later in retirement. If equity investment opportunities were crowding out annuitization, we might also expect variable annuities, which base their returns in part on equity investment performance, to be quite popular, but they are not. However, such variable annuities typically have very large fees, which might be a partial explanation for their unpopularity.

5. Need to Maintain Cash Reserves

The choice to annuitize, by its nature, leads to a loss of liquidity for the annuity holder. Some retirees perceive liquidity as necessary in case certain risks eventuate, such as medical bills or nursing home fees.

40 See Milevsky, supra note 32.  
42 See Dushi & Webb, supra note 16, at 120 (pointing out that modeling that advocates equity investment over annuitization does not take into account what level of failure risk is acceptable for different levels of risk-aversion).  
44 See Inkmann et al., supra note 15, finding low annuitization rates in the United Kingdom for a very limited sample period which included a year of poor sharemarket performance (2002).  
45 See Davidoff et al., supra note 13, at 1582.  
46 See Brown, Framing, supra note 21, at 1.  
47 FISHER, supra note 38, at 60–65.
Consequently, it is logical that the lack of liquidity offered by annuities acts as a disincentive to annuitize in some cases.48

There is limited empirical data regarding the extent to which liquidity concerns deter people from annuitization. One U.K. survey found that the main reason for not annuitizing was the lack of flexibility that comes with an annuity.49 Data from an extensive U.S. survey found that those who ranked their health poorly were less willing to annuitize than others.50 While this may indicate that those with poor health prefer to keep cash reserves in order to have funds available for medical fees, it may also reflect that they perceive themselves as having a comparatively lower longevity, which means that purchasing a life annuity represents poor value. Despite these findings, the presence of markets with high annuitization rates indicates that liquidity concerns are in many cases not a deterrent for retirees annuitizing a substantial portion of their wealth.51 Still, liquidity concerns stem from the fundamental nature of annuities and will, therefore, be difficult to address through policy reform alone.

B. FACTORS WHOSE IMPACT CAN BE LESSENED BY POLICY CHANGE

While annuities will always have some unchanging characteristics, such as illiquidity, other factors deterring annuitization can be significantly mitigated with policy reform. For example, high annuity prices and public perception of annuities are manageable concerns if addressed properly. The following subsections discuss these and similar factors in detail.

1. High Annuity Prices

Annuities are usually not actuarially fair in that the annuity’s purchase price exceeds the present value of its expected future cash flow.52 One reason for this is that annuity providers have to cover their

50 Brown, Decision to Annuitize, supra note 19, at 53–55.
51 See discussion of markets with high annuitization rates infra Part IV.A.
52 See, e.g., Brown, Role of Real Annuities, supra note 4, at 58; Amy Finkelstein & James Poterba, Selection Effects in the United Kingdom Individual Annuities Market, 112 ECON. J. 28, 46 (2002) [hereinafter Finkelstein & Poterba, Selection Effects] (finding that this was the case when the expected present value of annuity payments received by an annuitant who is a member of the general population was compared to the purchase price of annuities). However,
administrative costs, and commercial annuity providers will seek to make a profit margin. Another factor contributing to the actuarial unfairness of annuities is the annuity providers’ need to hedge against certain risks, most notably systematic longevity risk. By charging actuarially unfair prices, annuity providers build a reserve of capital in case such risks eventuate.

Adverse selection also plays a role in inflating the price of life annuities. This is a phenomenon in which asymmetric information leads to suboptimal outcomes. For example, in the life annuity market, those who perceive themselves as having above-average longevity are more likely to purchase annuities. This drives up prices, which further deters those who perceive themselves as having inadequate longevity from purchasing life annuities. The result spirals into even higher prices and purchasers with above-average longevity disproportionately populate the market. A major study empirically examining the life annuity market in the United Kingdom found evidence of adverse selection. It has been some modeling has found that annuities are relatively good value when the expected present value of annuity payment calculation takes into account the relatively high lifespan of the typical annuity purchaser. Babbel & Merrill, supra note 37.


George A. Akerlof et al., The Market for “Lemons”: Quality Uncertainty and the Market Mechanism, 84 Q.J. ECON. 488 (1970). This was a pioneering article that discussed the potentially negative effects of asymmetrical information.

Finkelstein & Poterba, Selection Effects, supra note 52, at 29–30.

See Peter Siegelman, Adverse Selection in Insurance Markets: An Exaggerated Threat, 113 YALE L.J. 1223, 1258 (2004) (stating that in some markets such an effect will end up with a ‘death spiral’ that destroys the whole market). However, the author acknowledges that death spirals are unusual rather than common occurrences. Id.

Finkelstein & Poterba, Selection Effects, supra note 52; see also Amy Finkelstein & James Poterba, Adverse Selection in Insurance Markets: Policyholder Evidence from the U.K. Annuity Market, 112 J. POL. ECON. 183 (2004) (finding the presence of adverse selection amongst different annuity markets. Specifically, this study found that annuities that were more advantageous to those with greater longevity were more likely to be purchased by long-living individuals and, conversely, annuities that gave payments to an estate upon the holder’s early death were more likely to be bought by those with lower longevity. However, the authors did acknowledge there was some possibility this was due to reasons other than adverse selection. Specifically,
estimated that adverse selection is responsible for about half the amount that the price of annuities exceeds the expected present value of their payments.\textsuperscript{59}

While life-cycling economic modes have shown that, under some assumptions, annuities represent good value despite being actuarially unfair,\textsuperscript{60} there is also clear evidence that the demand for annuities shows some direct price sensitivity.\textsuperscript{61} Section IV of this article will discuss how higher annuity prices might deter annuitization through more indirect means.

2. Default Risk

Beyond the deterrence of high prices, annuity holders are, short of a government guarantee, at risk of the provider defaulting on the annuity payments. While all states offer some level of guarantee for annuity payments, each state has its own coverage limits, the minimum being $100,000.\textsuperscript{62}

Although there is a lack of extensive research on this issue, certain modeling indicates that the presence of a default risk leads to a substantial reduction in life annuity demand.\textsuperscript{63} However, this modeling also found that the presence of a $100,000 guarantee (which would provide full protection for some annuity recipients, but only partial protections to those whose annuity receipts have an expected value of more than that amount) results in the default risk generally leading to only a relatively mild drop in default rates.\textsuperscript{64}

While there is a lack of empirical data regarding the extent to which default risk deters annuitization, the human tendency towards loss-aversion\textsuperscript{65} as well as the tendency to overweigh small risks\textsuperscript{66} might mean that default risk is a greater deterrent to annuitization than the abovementioned modeling suggests.

\textsuperscript{59} Mitchell et al., supra note 12, at 1310 (using 1995 data).
\textsuperscript{60} Id.
\textsuperscript{61} Section IV of this article will discuss the evidence relating to the price elasticity of annuity demand.
\textsuperscript{62} For a table that lists the coverage limit of each state, consult Babbel & Merrill, supra note 37, at 31.
\textsuperscript{63} Id. at 32.
\textsuperscript{64} Id. at 21–22.
\textsuperscript{65} See infra Part III.B.3.
\textsuperscript{66} See infra Part III.B.4.
3. Loss Aversion

Next, people generally have a tendency towards loss aversion, meaning they care more about not losing their wealth than they do about increasing it. By not taking loss aversion into account, expected utility models, which traditionally predict high annuitization rates, might be neglecting an important variable. In other words, even though annuities present an opportunity to increase wealth, the fact that premature death could cause a loss might be what is actually deterring annuity purchases.

Specifically, annuitization does offer potential gains to the retiree, and the longer the lifespan of an annuity holder, the more he will financially benefit from his decision to annuitize. On the other hand, holding a life annuity presents potential losses. One is the risk of dying early. The result is reduced retirement consumption and fewer assets being willed to heirs than might otherwise have been. Furthermore, there is another similar but subtly different potential loss: the risk that after annuitization the annuity holder will prematurely suffer from a terminal disease and consciously regret the purchase of the annuity.

Another potential loss associated with annuitization is that, as discussed earlier, annuity providers might default on their payments. Even if this risk is small, it could dissuade a retiree who has little or no earning potential from annuitizing.

Moreover, another potential negative outcome is a health shock or similar event that necessitates payment from liquid cash reserves. While such an event would not lead to a loss of annuity income, if the retiree regrets locking his money in an annuity it could still be considered a loss in the wider sense of the word.

Modeling that takes into account retirees’ loss-aversion tendencies regarding some of these risks has found that, from a behavioral perspective, annuities can represent poor value.

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68 Wei-Yin Hu & Jason S. Scott, *Behavioral Obstacles in the Annuity Market*, 63 FIN. ANALYSTS J., no. 6, 2007, at 71, 76. Expected utility models have been used in works that find that high levels of annuitization maximize utility. See, e.g., Yaari, supra note 8. Some research suggests that the reason why such modeling deviates from real world annuitization rates is due to such modeling not taking behavioral considerations into account. Davidoff et al., supra note 13, at 1589.


70 See Hu & Scott, supra note 68, at 76. This modeling takes into account the potential losses from an early death but not the potential of other losses such as default.
In addition to the human tendency to be loss-averse, there is a tendency to weigh risks disproportionally to the size of those risks. Specifically, people will often overweight smaller risks and underweigh larger risks.\footnote{Kahneman & Tversky, supra note 67, at 280–84; Amos Tversky & Daniel Kahneman, Advances in Prospect Theory: Cumulative Representation of Uncertainty, 5 J. RISK & UNCERTAINTY 297, 312–13 (1992).} In the context of life annuities, this means that people tend to over-emphasize some relatively small risks. These would include the above-stated relatively minor risks of premature death and annuity provider default.\footnote{Hu & Scott, supra note 68, at 76 (discussing the overweighing of the risk of an early death). In addition to the general overweighing of small risks, there is also a human tendency to be more influenced by the difference between outcomes that are 100% certain and those that are 98% certain, as compared to the difference between those that do not involve complete certainties. This principle is relevant when evaluating the difference in desirability between annuities that are covered by a 100% guarantee and those that are not. See Maurice Allais, Le Comportement de l’Homme Rationnel devant le Risque: Critique des Postulats et Axiomes de l’École Américaine, 21 ECONOMETRICA 503, 529 (1953).} Fear of default in particular would be exacerbated by the global financial crisis and waning trust that the public has in financial institutions.\footnote{See generally Betsey Stevenson & Justin Wolfers, Trust in Public Institutions over the Business Cycle, 101 AM. ECON. REV. (PAPERS & PROC.) 281 (2011).} Paradoxically, this tendency to weigh risks disproportionately also means that in limited instances, people might overvalue deferred annuities because they underweigh the substantial risk of dying before reaching a comparatively old age.\footnote{Hu & Scott, supra note 68, at 76.}

Modeling has indicated that the tendency to overweigh relatively minor risks exacerbates loss aversion and makes immediate life annuities poor value for most people.\footnote{Id. This modeling takes into account the potential of early death but not the potential of other losses such as the annuity provider defaulting on their payments.} On a related note, the tendency of people to prefer precise over ambiguous risks\footnote{See generally Daniel Ellsberg, Risk, Ambiguity, and the Savage Axioms, 75 Q. J. ECON. 643 (1961).} might also play a role in the low popularity of annuities. This is because people’s predictions about their mortality are not usually predictions they feel can be based on precise probabilities. Similarly, the tendency of people to overweigh the probability of an event that might occur from a wide variety of causes might also be partly responsible for low annuitization rates. For example, people can imagine dying in many more ways than they can imagine living longer and, therefore, perceive death to be a greater risk than it
actually is. The fact that pre-retirees seem particularly risk-averse would reinforce these tendencies.

5. Framing

Ancient Greek philosopher Epictetus once noted that “[m]en are disturbed not by things, but by the views which they take of things.” It is likely that the way one views a life annuity influences the extent to which one annuitizes wealth. If a life annuity is viewed as an investment, it is understandable that many will find annuitization unattractive, especially in light of the inherent risks and actuarially unfair returns that annuities typically bear.

On the other hand, if annuitization is viewed as a way of maximizing consumption, it is much easier to see it as an attractive option. This is because without an annuity people’s limited resources combined with uncertain longevity leave only sub-optimal consumption choices. Specifically, these choices would involve a trade-off between (1) under-consuming one’s retirement assets so as to self-insure against the risk of high longevity, and (2) consuming one’s assets while assuming average longevity, but risking wealth depletion if death comes later than expected.

Although research in this area is limited, there is some evidence that the way an annuity is viewed has a powerful bearing on people’s decisions to annuitize. One online survey, which presented annuities as either a potential investment or a consumption retirement vehicle, found that respondents indicated a dramatically stronger preference for annuitizing when the annuity was framed as a consumption vehicle.

The framing effect can also apply to dichotomies other than the investment-versus-consumption tradeoff. For instance, annuities can be viewed as a way of maximizing retirement income by pooling risk among annuity holders for their collective benefit, or annuities can be

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77 Hu & Scott, supra note 68, at 78 (relating low annuitization rates to the conjunction fallacy); see generally Daniel Kahneman & Amos Tversky, Extensional Versus Intuitive Reasoning: The Conjunction Fallacy in Probability Judgment, 90 PSYCHOL. REV. 293 (1983).
80 Brown, Framing, supra note 21, at 3–4.
81 Brown, Rational and Behavioral Perspectives, supra note 9, at 4–6, 35.
82 Brown, Framing, supra note 21, at 7–9.
viewed as an unfair gamble sold by insurance companies. The former is likely to lead to a higher uptake than the latter.

Another way in which the framing effect can influence annuitization decisions rests on how regular member benefit statements are presented. Specifically, a retirement savings plan that offers the choice of both annuities and a lump sum could issue statements that express the benefits in terms of a lump sum, expected annuity entitlement, or both. If the statement communicates the entitlement in terms of both, then more emphasis might be placed on one over the other. It makes sense that potential benefits presented in the form of an annuity, or with greater emphasis placed on the annuity rather than the lump sum, make it more likely that annuitization will be seen as the natural retirement choice. A study found that a sample of defined benefit plans, which present benefits in terms of income stream entitlements, have annuitization rates of seventeen percentage points higher than a sample of hybrid plans, which have benefits presented in the form of account balances but otherwise share many attributes with defined benefit plans.

85 See Benartzi et al., supra note 15, at 155 (noting that defined benefit plans have statements in terms of income entitlements).
86 Monika Bütler et al., The Role of the Annuity’s Value on the Decision (Not) to Annuitize: Evidence from a Large Policy Change 8 (Centre for Econ. Pol’y Res., Discussion Paper No. DP6930, 2008) (explaining that most Swiss Pension funds show both lump sum and expected annuity entitlements on annual statements, but devote more space to the expected annuity entitlements).
87 Some authors have stated that benefits presented in terms of expected income streams are likely to promote a consumptions frame, and that benefits presented in terms of lump sum entitlements are likely to promote an investment frame; however, they not provide empirical evidence indicating that how benefits are presented is correlated with whether members are more likely to view annuitization from a consumption or investment frame. See, e.g., id; Benartzi et al., supra note 15, at 155–56.
88 Benartzi et al., supra note 15, at 155–56. One important similarity between the two types of plans is that the investment risk is borne by the employer. Id. at 155.
Interestingly, there is some limited evidence that although women are more likely to annuitize than men, women are also less likely to be influenced by certain measures that frame an annuity in an attractive manner.89

6. Other Reasons

There are other reasons that contribute to low annuity demand. For instance, low financial holdings among those of retirement age likely factor into low annuitization rates. However, as average retirement account balances are forecasted to increase dramatically in the future, this factor will become less of an impediment to annuitization.

A lack of formal school and college education can also deter annuitization. However, there is conflicting evidence on the effect that financial knowledge has on the choice to annuitize.94

C. RELATIVE IMPORTANCE OF EXPLANATIONS FOR LOW ANNUITY DEMAND

The precise extent to which many of the abovementioned explanations cause low annuitization rates is mostly unknown. In reality, it is likely that many of the reasons operate inter-connectedly. While research has attempted to shed light on the issue, there is often a gap between the findings of such research and real-world observations. For instance, one study that utilized modeling found that a combination of high annuity prices, pooling of risks through marriage, and the existence of pre-annuitized wealth result in annuitization being a worse choice for

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90 See James Poterba et al., The Composition and Drawdown of Wealth in Retirement, 25 J. ECON. PERSP., no. 4, 2011, at 95, 96 (finding that half of 65 to 69 years olds in 2008 had average financial balances of less than $52,000).
91 See Monika Bütler & Federica Teppa, Should You Take a Lump-Sum or Annuitize? Results from Swiss Pension Funds 18 (Ctr. for Econ. Pol’y Res., Discussion Paper No. 2005-20, 2005) [hereinafter Bütler & Teppa, Swiss Pension Funds] (finding that amongst Swiss retirees, a small capital stock is correlated with an increase in chance of taking retirement savings in the form of a lump sum).
92 See James Poterba et al., The Shift from Defined Benefit Pensions to 401(k) Plans and the Pension Assets of the Baby Boom Cohort, 104 PROC. NATL. ACAD. SCI. 13238 (2007).
93 Inkmann et al., supra note 15, at 291; Brown, New Evidence, supra note 3, at 10.
94 See id. at 13–14 (finding that people who demonstrated higher levels of financial knowledge indicated a greater willingness to annuitize). But see Agnew, supra note 89, at 421–22 (finding that financial knowledge led to a lower preference to annuitize).
the majority of people. Specifically, this modeling found that retirees were often better off maximizing their incomes by investing and consuming their savings despite having to personally bear some longevity risk. However, this modeling does not perfectly mirror real world observations. For example, according to this modeling, single women often want to annuitize, yet this is not usually reflected in actual annuitization rates.

Overall, while there is some evidence regarding the causes of low annuitization rates, much remains to be studied. The next part of this paper will examine high annuitization markets and try to explain how some of the abovementioned causes of low annuitization are less applicable in these markets.

IV. THE POPULARITY OF LIFE ANNUITIES IN CERTAIN MARKETS

Despite the fact that most markets have low annuitization rates, in some markets the opposite is seen. Ascertaining which characteristics have led to these high-annuity markets could be useful in formulating policies to increase annuitization rates in the United States.

A. MARKETS WHERE LIFE ANNUITIES ARE POPULAR

The Oregon Public Employees Retirement System is one fund that has high annuitization rates. Its workers are able to choose between belonging to a defined contribution, defined benefit, or hybrid defined contribution defined benefit fund, with most choosing the defined contribution fund. Irrespective of the type of fund members are in, upon retirement, they have a choice of receiving their benefits as a full annuity or a partial annuity with a lump sum. There was previously a limited period where their choice also included an option to receive benefits in the form of a full lump sum with no annuity. Approximately 85% of members over the researched period chose a full annuity. During that period this fund had no default option, and according to some calculations, this fund’s annuities had a present value greater than their lump sum equivalent.
The market involving Swiss retirement fund members also exhibits very high annuitization rates. The Swiss retirement system is a mandatory scheme funded through contributions of which at least half are paid by the employer. A study that examined a number of Swiss retirement funds found that just over 61% of members, upon retirement, chose to fully receive their benefits in the form of an annuity. The funds examined in this study included both defined benefit funds and defined contribution funds. Most Swiss annuities represent excellent value for money on an actuarial basis. All but one of the studied funds had an annuity as their default option.

Members of U.S. defined benefit plans are another group of people who typically have a high annuity uptake. Although different studies report varying annuitization rates for such plans (which is understandable given the large number of plans), it appears that they usually have annuitization rates of over 50%. Such plans historically

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104 Bütler & Teppa, Swiss Pension Funds, supra note 91, at 6.
105 Id. at 27.
106 Id. While the annuitization rates for the defined benefit funds were consistently very high, the average annuitization rates for the defined contribution funds were also high, although, on average, not as high as those of the defined benefit funds. Furthermore, the bundle of defined contribution funds had greater variation in annuitization rates compared to the bundle of defined benefit funds. Id.
107 Id. at 25 (calculating that for the period relevant to the study, in many cases the annuities were better than actuarially fair, though this was not the case for single men). However, this was partially accomplished by the running down of fund reserves. Monika Bütler & Federica Teppa, The Choice Between an Annuity and a Lump Sum: Results from Swiss Pension Funds, 91 J. PUB ECON. 1944, 1957 (2007) [hereinafter Bütler & Teppa, Annuity and a Lump Sum].
108 Bütler & Teppa, Swiss Pension Funds, supra note 91, at 27. But see Benartzi et al., supra note 15, at 152 (stating that had the default been the lump sum for the funds where the opposite was the case, it would have led to lower annuitization rates). As only one of the funds studied had a lump sum as the default, it remains unclear to what extent the Swiss system’s annuitization rates are due to many of its funds having the annuity as the default.
109 Alessandro Previtero, Why Do People (Not) Annuitize?, ANDERSON SCHOOL OF MANAGEMENT, UNIVERSITY OF CALIFORNIA, 12 (Nov 2008), http://www.anderson.ucla.edu/Documents/areas/fac/finance/whyannV9.pdf. Previtero finds that such funds, typically, have annuitization rates of 70%. But see Benartzi et al., supra note 15, at 151–53, for an examination of previous studies using their own evidence, finding that defined benefit plans had annuitization rates of between 27% and 88%. However, the authors did state that not all the data can be regarded as 100% accurate. Specifically, one of the studies relied upon used self-reported data rather than archival data. Furthermore, the authors’ own data excluded younger participants (under fifty), had smaller balances (less than $5,000), or had less than five years of job tenure. The authors point out that in the case of some plans, the $5,000 balance minimum made a substantial
tended to offer only an annuity option, but in the 1990s they began to add a lump sum option as well.\textsuperscript{110} However, the number of employers in the private sector offering defined benefit plans has been declining for a number of years, meaning that a large percentage of current employees are unable to participate in such plans.\textsuperscript{111} There is some evidence that U.S. defined benefit plans offer better value annuities than most defined contribution funds.\textsuperscript{112}

B. HOW THESE FACTORS LEAD TO HIGH ANNUITY DEMAND

Earlier in this paper, a description was given of factors that have contributed to low annuitization rates in most markets. The next section discusses how these factors have been minimized in markets with high annuitization rates.

1. Cheaper Annuities

Of the U.S. defined benefit, Swiss, and Oregon high-annuity markets, at least the latter two are characterized as having relatively cheap annuities.\textsuperscript{113} However, the evidence discussed below regarding the price elasticity of annuities suggests that any direct increase in demand due to cheap price is a relatively minor factor in annuity uptake rates.

Although the exact price elasticity of annuities is unclear,\textsuperscript{114} empirical research does give us some idea as to its approximate magnitude. One study examined the change in uptake of life annuities in Switzerland after an increase in price. The study found that a 23.5\% increase in annuity prices led to a thirteen percentage point drop in annuitization.\textsuperscript{115} Another study, based on surveys taken in the United
States, found that when an annuity’s price was 25% more expensive than its actuarially fair equivalent, it led to an eleven percentage point drop in demand.116 Even assuming that most annuities are around 25% more expensive than those in the markets where annuities are popular, these figures suggest that annuity demand should be approximately eleven to fourteen percentage points lower in most markets than in high-annuity markets. It should be noted that the 25% price difference appears to be an outer limit, and there is a good chance that the real life price variation is lower.117 However, in reality, annuitization rates in most markets are dramatically lower than those in high-annuity markets—much more than the eleven to fourteen percentage point difference that would be expected due to a 25% higher price (a generous pricing difference assumption).118 This strongly suggests that factors beyond price contribute to low annuitization rates.

However, an examination of the indirect consequences flowing from the availability of cheap annuities helps explain why the availability of annuities at a good price possibly plays a wider role in increasing annuitization levels. For example, lower annuity prices mitigate the adverse selection effect. The adverse selection effect involves those equivalent to the annuity price rising by \(\frac{1}{0.81} = 1.2345\), which is a price rise of 23.5%. \textit{Id.}, at 13.

116 Brown, \textit{New Evidence}, supra note 3, at 8. In this survey, people were asked whether they would give up their social security benefits in exchange for a lump sum; 59% answered in the affirmative when the trade-off was actuarially fair, compared to 70% answering in the affirmative when the lump sum option was increased by 25%. \textit{Id.} at 6–7.

117 \textit{See generally} Brown, \textit{Role of Real Annuities}, supra note 4, at 58 (estimating based on 1998 data that the expected present value as a percentage of the life annuity price in the United States, for someone with an average life-expectancy, was 86% for males and 89% for females); Finkelstein & Poterba, \textit{Selection Effects}, supra note 52, at 46 (using 1998 U.K. data found that the respective rates were 87% for males and 86% for females); Amandha Ganegoda, \textit{Explaining the Demand for Life Annuities in the Australian Market} 25–26 (Centre for Pensions and Superannuation, Discussion Paper No. 05/2007, 2007) (showing that in Australia, another country that has low annuitization rates, in 2006 the figure was 76% for males and 78% for females, and notes that these figures represented a sharp decline from a previous survey that had used year 2000 data). Thus, if it is assumed that high annuitization rate markets have actuarially fair annuities, most markets are likely to have annuities that are no more than 25% more expensive than those of such markets. However, even if some of the high annuitization rate markets have annuities that are dramatically cheaper than actuarially fair annuities, and it is assumed that the price disparity between annuities of typical markets and high annuitization rate markets varies by more than 25%, the direct price impact still only goes a short way to explaining the lower annuity demand in most markets.

118 In most mainstream markets annuitization rates do not exceed single-digit percentages. \textit{See Section II, supra}. 

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\[\frac{1}{0.81} = 1.2345\]
viewing themselves as having below-average longevity being less likely to buy annuities. This leads to a spiral of higher annuity prices and a further skewing of annuity purchasers. It follows that the impact of this cycle is likely to be less extreme where annuities are cheaper in the first place.119 Thus, reducing the adverse selection effect may reduce annuity prices and indirectly benefit annuitization levels.

2. Minimized Loss-Aversion and Risk Perception

As previously discussed, the widespread lack of annuitization is likely due in part to the phenomenon that people tend to overweigh the potential for loss. Specifically, the risks of loss arising from premature death following annuitization and from provider default are generally both overweighed and altogether avoided by individuals who choose not to annuitize.

However, the model by which annuities are offered in high-annuitization markets could lessen the effects of loss aversion and risk perception. In high-annuitization markets, annuities are frequently offered by a retirement plan in which the employee has been a member during their most recent employment—that is, the annuity is offered by an organization they have dealt with for many years. However, in other markets this is typically not the case. Usually, retirees have not had long-term dealings with their life insurance company when they consider purchasing an annuity. Even when a defined contribution plan offers an annuity option, such a plan acts only as an intermediary between the retiree and the annuity provider rather than as a direct provider.120 It is also important to note that the vast majority of defined contribution plans do not offer their members an annuity option in the first place.121

A few interrelated reasons explain why offering annuities directly through a retirement plan reduces fears of annuity-related losses. First, potential annuitants are dealing with a party they are more likely to trust.122 Second, given the relationship among the potential annuitant, the retirement plan, and other plan members, it is realistic to expect that potential annuitants perceive annuitization as a collective arrangement that exists to benefit themselves and their coworkers rather than an

119 See GENTRY & ROTHSCHILD, supra note 83, at 43–44 (discussing the positive feedback loop involving lower annuity prices and higher annuitization rates).
120 Previtero, supra note 109, at 13.
121 In 2003, only 17% of 401(k) plans offered annuities. Brown, Rational and Behavioral Perspectives, supra note 9, at 8. In 2009, practically no 401(k) plans offered an annuity option. Benartzi et al., supra note 15, at 149.
122 See Wouter Poortinga & Nick F. Pidgeon, Trust, the Asymmetry Principle, and the Role of Prior Beliefs, 24 RISK ANALYSIS 1475, 1475 (2004) (discussing research that indicates that trust is built over time when dealings are positive, whereas it can be destroyed quickly and easily through negative dealings).
insurance executive. In other words, potential annuitants are more likely to view the possibility of a premature death following annuitization as the loss of a fair bet, with the winners being other retirees. In normal low-annuitization markets, however, annuitants are more likely to view themselves as the financial victims in a premature death situation, with the provider’s shareholders and executives as the winners. The fact that annuity purchases in low-annuity markets are often worse bargains than purchases in high-annuity markets likely reinforces this perception.

This reasoning is consistent with psychological studies showing that people often prefer lose/lose outcomes over win/win outcomes if they feel the latter does not give them a sufficient portion of the gain. Applied to potential annuitants, this could mean that despite the benefits of annuitization, some will hesitate to annuitize if they see themselves receiving an unfair deal from annuity providers. This is more likely to be the case where the annuity has not been directly offered by a familiar body such as the provider of the retirement plan.

Similarly, a retirement plan that directly offers annuities could diminish fear of payment default. People are more likely to trust parties with whom they have had long-term positive dealings. Thus, those who buy annuities directly from the provider of their retirement plans may be more likely to believe the payments will be honored. Of course, having insurance against provider default (an arrangement that exists in some high-annuity markets) does not hurt either.

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123 See Shaun P. Hargreaves Heap & Daniel John Zizzo, The Value of Groups, 99 AM. ECON. REV. 295, 295–96 (2009) (summarizing the literature that indicates that people generally act in a more cooperative and less self-interested manner towards other persons they consider as part of their group).

124 Indeed, the annuitant may perceive the loss as a bequest or gift to former friends and co-workers under that same plan.

125 See GENTRY & ROTHSCHILD, supra note 83, at 63 (raising the possibility of consumers perceiving annuities as unfair gambles).

126 The Ultimatum Game involves two players, where one player splits a fixed amount of money between themselves and the second player. However, if the second player is unhappy with the split then both parties end up with nil. Studies have generally shown that the second player rejects low offers. See, e.g., Kenneth Binmore et al., Testing Noncooperative Bargaining Theory: A Preliminary Study, 75 AM. ECON. REV. 1178 (1985); Werner Güth et al., An Experimental Analysis of Ultimatum Bargaining, 3 J. ECON. BEHAV. ORG. (1982).

127 Poortinga & Pidgeon, supra note 122, at 1475.

128 See Benjamin Avanzi, What is it that Makes the Swiss Annuitise? A Description of the Swiss Retirement System, 16 AUSTL. ACTUARIAL J. 135, 151 (2011) (discussing the comprehensive Security Fund that protects Swiss annuity receipts); see also Jeffrey R. Brown, Guaranteed Trouble: The Economic Effects
3. Framing Effect

The popularity of annuities in certain markets may also be explained by the framing effect: the idea that marketing and customer perceptions influence individuals’ decisions to annuitize. The framing effect manifests itself in a number of ways. First, in high-annuity markets annuities are more likely to be viewed as a collective pooling of risk rather than an unfair gamble with an annuity provider. Thus, annuitants may perceive their purchase as more attractive than would otherwise be the case.

Another likely way that the framing effect leads to greater annuitization relates to the presentation of benefit statements sent to retirement plan members (who have generally yet to make annuitization decisions). For instance, the Swiss retirement plan statements, which are regularly sent to individual members, devote substantially more space displaying annuity entitlements than lump sum entitlements. In defined benefit plans in the United States, statements usually show entitlements in the form of an income stream. The framing of benefits as an income stream makes potential annuitants comparatively more likely to annuitize. This is possibly attributable to the endowment effect, which is the tendency for people to value items they perceive as
already possessing more highly than items they lack. Due to the endowment effect, recipients of statements that frame benefits as a lump sum are more likely to view annuitization as the loss of a lump sum; whereas those that receive benefit statements in the form of entitlement to an income stream are less likely to do so.133

4. Other Reasons

There are other reasons for the popularity of annuities in certain markets. For instance, many participants in high-annuitization markets have large balances in their retirement plans,134 and there is evidence that, up to a point, larger retirement plan balances are correlated with higher annuity demand.135 In the case of the Oregon Public Employees’ Retirement System, the fact that public sector workers may be inherently more likely to annuitize could explain part of the high demand.136 Furthermore, people may be influenced by their peers, which would reinforce both the unpopularity and popularity of annuities in their respective markets.137

The next part of this paper will draw on the factors of success in high-annuity markets to propose policies aimed at increasing annuitization in mainstream annuity markets. Various other policies that potentially increase annuitization rates will also be discussed.

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133 Benartzi et al., supra note 15, at 157.
134 See Bütler et al., supra note 86, at 31 (discussing Swiss retirement accounts); Chalmers & Reuter, supra note 43, at 36–37 (discussing the Oregon Public Employees’ Retirement System).
135 Bütler & Teppa, Swiss Pension Funds, supra note 91, at 14.
137 See generally Esther Duflo & Emmanuel Saez, Participation and Investment Decisions in a Retirement Plan: The Influence of Colleagues’ Choices, 85 J. PUB. ECON., 121 (2002) (describing how the peer effect influences whether workers sign up for a retirement plan, as well as their choice of fund if they choose to sign up); John M.R. Chalmers et al., Who Determines When You Retire? Peer Effects and Retirement, 5–6 (Nat’l Bureau of Econ. Research, Working Paper No. NB08-13, 2008) (describing how the peer effect influences retirement age). But see John Beshears et al., The Effect of Providing Peer Information on Retirement Savings Decisions, 1–2 (Nat’l Bureau of Econ. Research, Working Paper No. 17345, 2011) (finding that a study examining the reaction of employees to positive peer information regarding retirement plan enrollment had an oppositional impact on their enrollment decisions as compared to a control group that was not given such information).
V. POSSIBLE INITIATIVES FOR INCREASING THE POPULARITY OF LIFE ANNUITIES

The phenomenon of low annuitization rates despite the marked benefits of annuitization raises an issue as to whether there are grounds for introducing policies to encourage annuitization. Such policies could be justified on the basis that low annuitization rates are, at least partially, caused by imperfect markets. Specifically, adverse selection, which is the result of asymmetric information, can lead to market malfunctions. Policies that encourage annuitization can help reverse the negative feedback loop that is the adverse selection effect.

Other reasons for low annuitization rates are behavioral in nature and also justify the introduction of pro-annuitization policies. In 2004, the Health and Retirement Study (HRS) found that 41% of roughly 1,000 retirement-age participants when offered the chance would not convert part of their Social Security entitlements to an actuarially equivalent lump sum. This finding supports the fact that in most markets, there is a material level of under-annuitization. This is because the 41% of members of the segment that would not give up their Social Security entitlements are theoretically either happy with their current level of annuitization (from receipts of Social Security and any defined benefit pension entitlements) or wish to have higher levels of annuitization. But they do not wish for less annuitization; otherwise, they would have given up at least a portion of their entitlements for a lump sum. However, it would be a miraculous coincidence if ideal annuitization levels were equivalent to people’s receipts of social security and defined benefit pensions. Consequently, it follows that a material proportion of the ones who would choose the lump sum option desire to have higher levels of annuitization.

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138 Akerlof, supra note 55.
139 As discussed below, certain policy initiatives can lessen the adverse selection effect by breaking its negative feedback cycle by making annuities more popular.
140 See Charles Wolf, Jr., A Theory of Nonmarket Failure: Framework for Implementation Analysis, 22 J. L. & Econ. 107, 107 (1979) (making the point that the existence of inadequate market outcomes is a necessary but insufficient condition for policy intervention). To determine the desirability of a policy aimed at correcting a market failure, the outcomes of its implementation need to be compared with the failure it is trying to alleviate. Id.
141 Brown, New Evidence, supra note 3, at 7. Another possible interpretation is that due to market failures, people in some cases do not perceive annuitization as being as beneficial as it actually is. Id. The study is likely to be representative of the general population of older workers because the subsample of 1,000 individuals used for this study was representative of the HRS cohort, and the HRS is a “nationally representative longitudinal study of older individuals.” Id. at 5–6. Of note, the median age of participants was nearly 58 years old. Id. at 24.
142 Hu & Scott, supra note 68, at 71.
markets only a very small percentage of people annuitize their wealth. However, given that 59% of people in the same study would trade part of their Social Security entitlements for an actuarially fair lump sum indicates that the majority of people might still prefer lump sums to actuarially fair annuities.\textsuperscript{143} Consequently, it is important that policies aimed at encouraging annuitization do not result in over-annuitization.\textsuperscript{144}

Yet, on the whole, there is a case for increasing annuitization levels. The following subsections will examine specific policies that aim to do just that. Some policy suggestions are based on adopting important traits that have contributed to annuity popularity in high-annuity markets. Others are based on theory and independent research.

\textit{A. Directly Offer Life Annuities in Retirement Plans}

Since one of the common characteristics of high-annuity markets is that annuities are offered directly by retirement plans, replicating this feature is an important step to achieving higher annuitization. As noted, most U.S. defined contribution plans do not offer an annuity option, and those that do tend to act only as intermediaries. Consequently, policies could be enacted that encourage or mandate defined contribution plans to offer life annuities. Defined contribution plans could do so by reselling group annuities purchased from life insurance companies. However, policies geared in this direction would have to be formulated with the aim of inducing defined contribution plan sponsors to offer annuitization as a genuinely attractive option. One could envisage a situation where defined contribution plan providers grudgingly offer annuities. As a result, the annuity option would not be positively communicated and might be offered at an unattractive price.

Instead, policies that encourage defined contribution plans to directly offer annuities should not be viewed in isolation. Ideally, they would operate alongside other policy initiatives suggested in this paper, such as framing annuities in an attractive manner and creating a comprehensive annuity guarantee system. Such policies would operate synergistically to

\textsuperscript{143} See Brown, \textit{New Evidence, supra} note 3, at 20 (arguing that the result might mean that compulsory annuitization does not enhance welfare to the extent suggested by standard life-cycle theory). Another explanation for the results is perception by consumers that annuitization is not welfare enhancing. \textit{Id.}

\textsuperscript{144} A household is over-annuitized when its desired consumption path is either less than its annuity income (due to a bequest motive), or constrained by its annuity income (for instance, due to the household desiring liquidity so as to buffer against a potential unexpected economic shock). See Jeffrey R. Brown, \textit{Are the Elderly Really Over-Annuitized? New Evidence on Life Insurance and Bequests, in Themes in the Economics of Aging} 91, 94–95 (David A. Wise ed., 2001) (discussing over-annuitization in the context of Social Security recipients).
increase annuitization through the availability of well-priced annuities, which are perceived by retirees as a fair way of pooling longevity risk with other retirees.

Certain regulatory changes would also be desirable to ensure that defined contribution plans effectively offer annuities. One of the legal changes relevant to the availability of deferred annuities would involve modifying the Required Minimum Distributions rules. These rules, which apply to some retirement accounts, mandate that retirees over a certain age withdraw a minimum annual percentage of their account balance. In their current form, such laws could, potentially, result in a portion of the deferred annuity purchase price being taxed during the retirement deferral stage as if it were being distributed, even though distribution might not occur. To some limited extent, recently

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145 A large number of people annuitizing would, to some extent, lessen the adverse selection effect, as it would help reverse the negative feedback loop of adverse selection. GENTRY & ROTHSCHILD, supra note 83, at 43–44; see also Estelle James et al., The Payout Stage in Chile: Who Annuitizes and Why?, 5 J. PENSION ECON. & FIN. 121, 135, 151–52 (2007) (finding that the Chilean annuity market, which has high annuitization rates but only permits retirement fund distributions to take the form of annuities or phased withdrawal products, has a limited adverse selection effect and offers annuities which have an expected return which is close to actuarially fair).

146 See generally Part V.H, infra.


148 Retirees must annually withdraw a percentage of the balance of their retirement plans (for some types of funds): I.R.C. §§ 401(a)(9)(A), 403(b)(10), 408(a)(6), 408(b)(3), 457(d)(2) (2012); Treas. Reg §§ 1.401(a)(9)-1 (2009), 1.403(b)-3 (2007), 1.408-8 (2004). The required percentage to be withdrawn increases with the age of the retiree. Treas. Reg §§ 1.401(a)(9)-5, Q&A(4) (2004), 1.401(a)(9)-9, Q&A(2) (2002). In the case of many plans, the requirements commence the year after the later of when the retiree reaches 70.5 or when they retire, but in the case of some plans, they commence the year after the retiree has reached age 70.5: I.R.C. § 401(a)(9)(C). The aim of these laws is to make the retirement account funds used by the retiree (and possibly their spouse) rather than others, given that those funds have had the benefit of tax incentives. Jay A. Soled & Bruce A. Wolk, The Minimum Distribution Rules and Their Critical Role in Controlling the Floodgates of Qualified Plan Wealth, 2000 BYU L. REV. 587, 588–89 (2000). In general, immediate annuities from defined benefit plans (Treas. Reg § 1.401(a)(9)-6, Q&A (1) (2004)) and defined contribution plans (Treas. Reg §§ 1.401(a)(9)-5, Q&A (1)(e) (2004) & 1.401(a)(9)-6, Q&A (4) (2004)) are not regarded as part of the balance that is subject to annual minimum distributions. However, deferred annuities for the period that payments have not commenced are not exempt from these provisions: Treas. Reg §§ 1.401(a)(9)-5, Q&A (1)(e) (2004) & 1.401(a)(9)-6, Q&A (4) (2004).

149 GALE ET AL., supra note 147, at 140.
proposed regulations prevent the Required Minimum Distributions rules from applying to certain deferred annuities.¹⁵⁰ Allowing defined contribution plans to offer deferred annuities without adverse tax outcomes would in this respect give them an advantage over defined benefit plans, since defined benefit plan annuity payments typically start at age sixty-five.¹⁵¹ This is because some of the reasons for not purchasing immediate annuities are less applicable to deferred annuities.¹⁵²

Another relevant issue concerns the simplification of fiduciary requirements that apply to fund sponsors as they choose annuity providers.¹⁵³ Currently, fulfilling the requirements of safe harbor provisions allows the fiduciary that chooses an annuity provider to satisfy the duty of adequate care, skill, prudence, and diligence.¹⁵⁴ However, these provisions have not proven popular due to their vagueness.¹⁵⁵ A system that makes it clear which annuities would enable a plan sponsor to utilize the safe harbor provisions would decrease the cost of providing certain annuities. Information about qualifying sponsors could also be combined with an electronic quotation system that easily enables a comparison of annuity prices. A comparison tool of this nature could facilitate competition among low-liability sponsors and help maximize the value of annuities.¹⁵⁶

Although these suggested changes would enable defined contribution plans to offer annuities more easily, there is no guarantee they would actually offer annuities. Additional rules may be needed that

¹⁵⁰ See, e.g., Longevity Annuity Contracts, 77 Fed. Reg. 5443 (proposed Feb. 3, 2012) (to be codified at 26 C.F.R. pt. 1). One of the major limitations of these proposed regulations is that they only apply up to a limit of 25% of the retirement account balance, meaning that if the retiree wishes to purchase a deferred annuity with more than 25% of their retirement funds then they will not be fully protected by such provisions. See id.

¹⁵¹ See id. at 5449 (stating that these proposed regulations will not apply to defined benefit plans since such plans already give members the option of annuities that provide longevity protection).

¹⁵² See infra Part V.H.

¹⁵³ GALE ET AL., supra note 147, at 141.


¹⁵⁵ Benartzi et al., supra note 15, at 160. The regulations include vague and broad requirements, such as requiring that the fiduciary consider and act on information regarding the ability of annuity providers to be financially able to make annuity payments and that the fiduciary consider the costs of the annuity and decide whether they are reasonable as compared to the benefits and services of the annuity contract. See 29 C.F.R. § 2550.404(a)(4) (2013).

¹⁵⁶ See Craig Thorburn et al., An Analysis of Money's Worth Ratios in Chile, 6 J. PENSION ECON. & FIN. 287, 302 (2007) (discussing how the introduction of such a comparison tool in Chile appears to be associated with annuities having lower commissions).
either require such plans to offer annuities or provide stronger incentives for them to do so. The advantages of mandating an annuity option need to be balanced against the inherently coercive nature of such policies. If, on balance, encouragement rather than coercion is the preferable policy stance, decision-makers could continue to reward employers for utilizing certain policies aimed at increasing retirement plan participation. 157 They also might consider an incentive that not only rewards the offering of annuities but also the achievement of certain annuitization rates among plan retirees.

B. FRAME ANNUITIZATION OPTION AS AN ATTRACTIVE OPTION

Policies carefully utilizing the framing effect can also make annuities more attractive. Retirement plans that directly offer reasonably-priced annuities are likely to be bolstered if regular benefit statements sent to its members frame member entitlements as an estimated annuity equivalent. If incentives exist that reward defined contribution plans for achieving certain annuitization rates, it will be in the plans’ interests to frame annuities in an attractive manner. In this way, they may include the benefits as an estimated annuity equivalent in regular members’ statements. Additionally, framing annuities as consumption rather than investment vehicles, may be desirable given the aforementioned research indicating that annuitization is more likely with the former. 158 Alternatively, if policies mandating or encouraging plans to offer annuities are not based on attaining set annuitization levels, requiring benefit statements to include an estimated annuity equivalent could be considered a form of disclosure that would help to increase annuitization levels. 159

C. OFFER GOVERNMENT GUARANTEE

Evidence exists that the risk of an annuity provider defaulting discourages annuitization, especially given the ordinary planholder’s aversion to losses and tendency to overweigh small risks. 160 Older persons, who typically have limited ability to earn income, are even more hesitant at the prospect of provider default. A guarantee that enables retirees to feel secure about their annuity receipts would alleviate such fears and likely contribute to a rise in annuitization rates.

157 Benartzi et al., supra note 15, at 160. Specifically, this reward exempts them from certain anti-discrimination regulations that limit the benefits available to the highest paid workers of the firm. Id.
158 However, there is no evidence that high annuitization rate markets actively do this.
159 See, e.g., Lifetime Income Disclosure Act, S. 2832, 111th Cong. (2009) (proposing that some regular statements include the annuity equivalent of entitlements).
160 Default risk may discourage annuitization. See Section III, supra.
Although the United States has various state-level guarantees for annuity providers, these guarantees are often limited in coverage, and different states offer varying levels of coverage.\(^{161}\) Given these factors, the current system might not withstand a broad economic shock that affects a large number of insurers.\(^{162}\)

A comprehensive federal scheme to guarantee annuity payments would do much to give potential annuitants incentives to annuitize at least part of their retirement wealth. Such a scheme could follow the Federal Deposit Insurance Corporation model of guaranteeing bank deposits. For instance, an agency could guarantee annuity payments up to a maximum of $500,000.\(^{163}\) Although such an insurance scheme would represent an increased cost to annuity providers and, like most increased costs, could be passed on to consumers, such guarantees would go a long way towards giving retirees the option of purchasing a secure income stream.\(^{164}\)

\section*{D. PROVIDE TAX INCENTIVES}

Just as the above three suggestions would promote annuitization in the U.S. market, the addition of a tax concession or subsidy on life annuities would also encourage higher annuitization rates. This could be implemented by applying the capital gains tax rate to all or part of annuity distributions. Alternatively, part of the annuity payments could be exempt from income tax.\(^{165}\) However, taxing non-annuitized retirement plan distributions in a disproportionately high manner resembles an indirect form of coercion, not an incentive to annuitize.

Nevertheless, offering tax incentives on life annuities can be justified on several grounds. For example, such incentives may be necessary to spare society the cost of retirees who outlive their retirement savings and subsequently rely on government assistance.\(^{166}\) However, there is no evidence to suggest that such savings would recoup the fiscal costs of such incentives or subsidies.

Still, concessions or subsidies counteract psychological factors such as risk perception that often prevent people from annuitizing. Providing preferential tax treatment for annuities would also offset the adverse selection effect.\(^{167}\) These incentives would enable cheaper annuities,

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\(^{161}\) Babbel & Merrill, \textit{supra} note 37, at 31.
\(^{162}\) Benartzi et al., \textit{supra} note 15, at 160–61.
\(^{163}\) \textit{GALE ET AL.}, \textit{supra} note 147, at 142–43.
\(^{164}\) \textit{See} Benartzi et al., \textit{supra} note 15, at 160–61 (noting that a guarantee system is an alternative to workable safe harbor provisions).
\(^{165}\) Brown & Warshawsky, \textit{supra} note 16, at 41.
\(^{166}\) \textit{GENTRY & ROTHSCILD}, \textit{supra} note 83, at 16.
\(^{167}\) \textit{Id.} at 17–20.
which would then feed into a cycle of greater uptake by those with average longevity. This would reduce prices, leading to an even greater uptake. Additionally, the demonstrated ability of subsidies to alleviate adverse selection in health insurance markets suggests that subsidies would likely have a similar impact on annuity markets. 

However, government subsidization raises equity issues. This is because comparatively wealthier people have a greater ability to annuitize, meaning that they would on average receive a greater subsidy than those less able to do so. Furthermore, if policymakers decide that enhancing retiree well-being is a desirable policy, there may be more useful ways to spend taxpayer money than subsidizing the annuity markets. Finally, such subsidies would likely be paid for by higher tax burdens on other parts of the economy, which, given the nature of taxes, could lead to other market distortions.

Overall, it would appear that using government money to increase annuitization through concessions or subsidies is not an ideal policy stance. If emulating features of markets that have high annuitization rates could lead to markedly increased annuitization rates without government subsidies, tax concessions become very difficult to justify. If, on the other hand, such features would not result in a marked rise in annuitization levels, policymakers should consider an additional policy of tax concessions or subsidies on annuitized income.

E. MANDATE LIFE ANNUITIES

A number of countries already mandate that retirees annuitize a portion of their retirement savings. Such a policy has advantages and disadvantages.

First, one of the advantages is that mandatory annuitization would help reduce the adverse selection effect. This is because adverse

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168 Id. at 43–44.
170 Those higher taxes might be in the present or future. To the extent such incentives or subsidies are funded by a higher fiscal deficit, they will be paid for by higher taxes in the future.
171 Brown & Warshawsky, supra note 16, at 42.
172 Orszag, supra note 39, at 13.
selection is dependent upon those who perceive themselves as having comparatively shorter longevity choosing not to annuitize.\footnote{See Finkelstein & Poterba, Selection Effects, supra note 52, at 42–43 (finding that the adverse selection effect is about twice as pronounced in the U.K. compulsory annuity market compared to the U.K. voluntary annuity market).}

Second, to the extent that behavioral explanations like loss aversion and risk perception result in under-annuitization, one could argue that the government has an interest in mandating behaviors that will maximize the long-term well-being of retirees and society. After all, the government already interferes to promote well-being in a number of areas. For instance, laws regarding the mandatory use of vehicle seatbelts help prevent injuries and deaths to individuals, as well as reduce the costs that society pays for such events.\footnote{Alma Cohen & Liran Einav, The Effects of Mandatory Seat Belt Laws on Driving Behavior and Traffic Fatalities, 86 REV. ECON. STAT. 828, 828 (2003), found that mandatory seat belt laws do save lives and concluded that the evidence does not support past claims that such laws lead to significant negative changes in driving behavior. There is also evidence that motor vehicle accident related health care (which like all health costs, is partially borne by the public) is reduced through seat belt use. See Shane Allen et al., A Comprehensive Statewide Analysis of Seatbelt Non-use with Injury and Hospital Admissions: New Data, Old Problem, 13 ACAD. EMERGENCY MED. 427, 432 (2006).} Similarly, laws aimed at cutting tobacco consumption are not only beneficial to individuals whose consumption is prevented or reduced,\footnote{Jonathan Gruber & Botond Kőszegi, Is Addiction ‘Rational’? Theory and Evidence, 116 Q. J. ECON. 1261 (2001) (showing that the justification for excise on cigarettes is mainly due to their addictive nature and the resulting harm they cause the individual).} but they also reduce second-hand smoke and are beneficial to society.\footnote{See id. (stating that the cost of externalities such as these, while real, are substantially smaller as compared to the cost of the harm that tobacco smoking directly causes smokers).}

However, strong counter-arguments discourage mandated annuitization. People’s freedom of choice, while not an absolute right, is of inherent value.\footnote{Daniel B. Klein, Statist Quo Bias, 1 ECON. J. WATCH 260, 263–64 (2004), discusses the main virtues of liberty as well as the major works describing these virtues.} Reducing people’s ability to spend and invest their retirement savings at will is an abrogation of such rights. Not surprisingly, the forced annuitization that occurs in certain jurisdictions has provoked anger among citizens who feel that life annuities provide poor returns while increasing the profitability of insurance companies.\footnote{Orszag, supra note 39, at 2.} 

Furthermore, forced annuitization disproportionately harms those who can reasonably expect to have below-average longevity. The
existence of adverse selection reflects the fact that persons can often judge their own mortality better than annuity providers. The injustice of forced annuitization could be abated by more comprehensive underwriting, resulting in fairer priced annuities to retirees. However, there are likely limits as to the extent underwriting could solve this problem.

Another related issue is that although market imperfections cause under-annuitization, it does not necessarily follow that the majority of people would benefit from annuitization. Given that the ideal rate of annuitization is unknown and that some research suggests most people do not desire an actuarially fair annuity, mandating annuities could, in fact, not be in the majority’s interests. Also, while Social Security is a mandatory government scheme that results in some measure of forced annuitization, the aims of Social Security differ from private annuity markets. Therefore, the justifications for the mandatory nature of Social Security might not apply to the private compulsory annuitization of retirement wealth.

179 Finkelstein & Poterba, Selection Effects, supra note 52, at 30, argue that the adverse selection effect is dependent on information asymmetry. Theoretically, if annuity providers knew as much as the annuitant did about the annuitant’s longevity, then they could price the annuity at a price catered for that particular annuitant. Id. This would then prevent the spiraling adverse selection effect which is dependent on those with below average longevity not annuitizing due to them perceiving annuities as poorly priced for them. Id.


181 See Id. at 9–11, for a discussion of some of the legal constraints regarding the use of some criteria for the underwriting of annuities in the United States and Canada. Furthermore, insurance underwriting is based on objectively measurable attributes being correlated with different measures of risk, meaning that factors that cannot be readily objectively measured cannot be properly taken account of. Id. For instance, it would be difficult to take into account the number of friends one has for the purpose of predicting longevity, despite the fact that the number of friends one has in their social network is correlated with longevity. See Lynne C. Giles et al., Effect of Social Networks on 10 Year Survival in Very Old Australians: The Australian Longitudinal Study of Aging, 59 J. EPIDEMIOLOGY & COMMUNITY HEALTH 574, 577 (2005).

182 See Brown, New Evidence, supra note 3 (finding in a survey that 59% of people would be willing to lose part of their Social Security benefits in exchange for an actuarially fair lump sum).

183 See John H. Langbein, Social Security and the Private Pension System, in IN SEARCH OF RETIREMENT SECURITY 109, 109–13 (Teresa Ghilarducci et al. eds., 2005) (arguing that the goals of Social Security differ from the private pension system in that Social Security is aimed at preventing elderly people from being destitute and also, unlike the private system, plays an important redistributive role).
Overall, while the case for mandating annuitization has merit, forced annuitization might not be the ideal step in maximizing overall utility. This is especially so given the examples of high annuitization rates in some markets without compulsion. Allowing individuals to voluntarily annuitize is a much more elegant solution than mandating that everyone do so “for their own good.”

**F. USE SOFT COMPULSION**

But perhaps there is a middle ground. “Soft compulsion” is one way of encouraging people to purchase life annuities that, while falling short of mandatory annuitization, relies on people’s inertia and can be considered a mild form of coercion. Specifically, there is evidence that the use of a default option is a powerful tool in influencing people’s choices regarding retirement savings.\(^{184}\) Policies could be implemented that result in defined contribution plans offering annuitization as the default choice for distributions. Clearly, such a policy could only be feasible if combined with regulatory and other policies, such as those discussed above, which aim to dramatically increase the number of defined contribution plans that offer a life annuity option. Another method of utilizing the default bias could be to give those entering retirement the default choice of a trial annuity, which would automatically convert to a life annuity after two years.\(^{185}\) Under this idea, the retiree could opt out of ever receiving the trial annuity in the first place or out of receiving a life annuity within the two-year trial period.\(^{186}\) Yet another method for utilizing the default effect would be to allocate a portion of retirement plan contributions (during the accumulation phase) for the purchase of deferred life annuities.\(^{187}\)

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184 Brigitte C. Madrian & Dennis F. Shea, *The Power of Suggestion: Inertia in 401k Participation and Savings Behavior*, 116 Q. J. Econ. 1149, 1150 (2001) (giving evidence of the power of a default option in increasing 401(k) fund participation rates, as well as in setting people’s contribution rate and fund allocations); John Beshears et al., *The Importance of Default Options for Retirement Saving Outcomes: Evidence from the United States* (Nat’l Bureau of Econ. Research, Working Paper No. 12009, 2006) (summarizing the evidence regarding the power that a default option has in influencing choices made at various stages of the retirement life-cycle). It has also been shown that participation rates in 401(k) plans were substantially higher when new employees were asked to make a decision as to whether they wanted to participate, as opposed to a standard opt-in regime. Gabriel Carroll et al., *Optimal Defaults and Active Decisions*, 124 Q. J. Econ. 1639, 1639 (2009) (stating that though being presented with making an active decision that does not involve a default option is very different from being presented with an annuitization default and having to opt-out to avoid annuitization).

185 GALE, supra note 147, at 132–39.

186 Id.

187 Id. at 154–58.
The justifications for using the default option, like those for mandating annuitization, are to alleviate adverse selection and behavioral biases. But unlike a mandatory purchase requirement, the use of default options for influencing retirement savings outcomes is a form of “libertarian paternalism” and does not directly infringe on people’s personal liberty. Such techniques encourage annuitization while preserving people’s freedom of choice. On the other hand, the reality is that people’s freedom in many contexts is a matter of degree, and the use of the default effect utilizes people’s behavioral biases to make certain outcomes more likely. Therefore, it does have some impact on people’s freedom. Consequently, while use of the default effect might be justified, the issue is whether, keeping in mind the inherent importance of freedom, a strong enough case can be made for its use in influencing annuitization decisions. In deciding this, it is important to consider that the ideal amount of annuitization is relatively unknown, as is the precise quantitative impact of many market imperfections that cause under-annuitization. Thus, it is difficult to make a compelling argument for mandating that annuitization be the default option for retirement plan savings. Further, while it might be argued that not having annuitization as a default limits freedom by discouraging people from annuitizing, there is a marked difference between biasing people towards the irrevocable decision of annuitizing and biasing them towards not immediately doing so (which allows them to make future financial decisions).

G. ISSUE GOVERNMENT LONGEVITY BONDS

One of the risks annuity providers face is an unexpected increase in the average life expectancy of annuitants. The difficulty of hedging against such systematic longevity risk leads to higher-priced annuities.

188 Id. at 124.
191 See Thaler & Sunstein, supra note 189, at 178–79 (discussing a variety of policies that incorporate different degrees of paternalism but still, at a literal level, allow people a freedom of choice).
192 Klein, supra note 177, at 263–64.
193 Clearly very few would argue that every decision that involves behavioral biases should be subject to some form of government paternalism.
One way to counter this is for the government to issue longevity bonds, which assist annuity providers in hedging against systematic longevity risk.\textsuperscript{195} While the private sector could issue similar financial instruments,\textsuperscript{196} a previous attempt was unsuccessful.\textsuperscript{197} However, more recent developments have raised hope of a future private sector solution.\textsuperscript{198}

The advantage of the government issuing longevity bonds is that it should lead to cheaper annuities.\textsuperscript{199} Through direct and indirect means, cheaper annuities would likely lead to higher annuitization rates.\textsuperscript{200} Longevity bonds could also contribute to higher annuitization levels through lessening the risk of annuity provider default.\textsuperscript{201}

On the other hand, issuing such bonds would subject the government to systematic longevity risk.\textsuperscript{202} This is on top of the longevity risk that the government already experiences due to age-related spending, such as Social Security and subsidized health care. However, one justification for the government taking on such risk (which would be borne by later generations)\textsuperscript{203} is that any unexpected increase in community longevity would have a comparatively greater benefit on later generations.\textsuperscript{204} This is because such an advancement would likely have a greater impact on

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\textsuperscript{195} See David Blake & William Burrows, Survivor Bonds: Helping to Hedge Mortality Risk 68 J. RISK INS. 339, 344–46 (2001) (referring to such bonds as survivor bonds, where such bonds have a payout that corresponds to the longevity of a pre-determined cohort of the population).

\textsuperscript{196} See Friedberg & Webb, supra note 194, at 2.

\textsuperscript{197} David Blake et al., Living with Mortality: Longevity Bonds and other Mortality-Linked Securities, 12 BRIT. ACTUARIAL J. 153, 162 (2006).

\textsuperscript{198} David Blake et al., The Birth of the Life Market (The Pension Inst., City Univ., London, Discussion Paper No. PI-0807, 2008); Enrico Biffis & David Blake, Mortality-Linked Securities and Derivatives (The Pension Inst., City Univ., London, Discussion Paper No. PI-0901, 2009); Blake & Burrows, supra note 195, at 345 (arguing that even if the private sector were able to issue such instruments, the government issue of longevity bonds would still provide a relative advantage in that government instruments require lower yields).

\textsuperscript{199} Compare Jeffrey R. Brown & Peter R. Orszag, The Political Economy of Government-Issued Longevity Bonds, 73 J. RISK INS. 611, 621 (2006) (maintaining that the lack of the ability to hedge against systematic longevity risk raises annuity prices by less than five percentage points), with Blake & Burrows, supra note 195, at 347 (describing the possible price reductions from being able to hedge against such risk as “substantial”).

\textsuperscript{200} See supra Part IV.B.2–3.

\textsuperscript{201} Friedberg & Webb, supra note 194.

\textsuperscript{202} Blake & Burrows, supra note 195, at 345.

\textsuperscript{203} Id.

\textsuperscript{204} Id.
the working lives (and possibly lifespans) of those belonging to younger generations when the advancement was made, as compared to its impact on the working lives of those who would already be at or approaching retirement.\textsuperscript{205} In other words, as younger generations have more to gain financially from higher longevity, it follows that they should also shoulder the financial downside of such an event. The counter-argument is that government might shift the risks too much and over-burden future generations.\textsuperscript{206}

On balance, given that the government is already highly subject to longevity risk and a pre-existing deficit, the issuing of government longevity bonds might not be the ideal solution. Rather, the private sector should be left to find a solution through the utilization of financial instruments, even though it is uncertain when it will satisfactorily be able to do so. The government might try to do its part in assisting the private sector, though, by setting up a longevity index, which would predict the probability of and degree to which actual life expectancy deviates from the official forecast.\textsuperscript{207} However, because the systematic longevity risk is unknown and difficult to model,\textsuperscript{208} such an index is likely to be of limited assistance. In the meantime, annuity providers should consider relying heavily on life annuities that allow lower payouts if widespread longevity increases more than expected.\textsuperscript{209}

\textbf{H. Offer Different Types of Annuities}

So far this paper has argued that offering annuities through familiar retirement plans, together with other policies, could lead to materially higher annuitization rates. But those involved in issuing annuities could also spur annuitization by offering existing subtypes of life annuities more cheaply or in a more targeted manner. Issuers could also innovate new types of life annuities. However, this needs to be balanced against the fact that too much choice can overwhelm people and result in inaction.\textsuperscript{210}

\begin{flushright}
\textsuperscript{205} Id.
\textsuperscript{206} Id. at 627.
\textsuperscript{208} See Sherris & Evans, supra note 53, at 17–24.
\textsuperscript{209} Brown & Orszag, supra note 199, at 619.
\end{flushright}
Deferred life annuities that commence payment only once the holder reaches a relatively old age are already available. However, annuity providers may want to consider why such annuities are potentially attractive for some retirees who might otherwise shun immediate life annuities. This is because some factors that deter annuitization generally are less applicable to deferred annuities. Specifically, deferred annuities that commence at a later age increase annuitant welfare more than immediate life annuities.211 Such deferred annuities target the portion of retirement where the annuitant’s remaining life expectancy is uncertain; whereas, immediate annuities tend to cover the annuitant’s full retirement period. Consequently, a deferred annuity requires less wealth, minimizing the amount of money lost when purchasing an annuity at an actuarially unfair price.212 For instance, a sixty-five-year-old would need to spend less money on a deferred annuity than on an immediate annuity, meaning that less money would be lost to the costs (and possibly profit) of the annuity provider.

Another advantage of deferred annuities relates to the behavioral bias in which individuals underweigh large risks and overweigh small risks. This bias, which makes an immediate annuity taken at age sixty-five comparatively unattractive,213 can operate in the opposite manner for deferred annuities making them relatively attractive. This is because underestimating the chance of premature death leads to an overestimation of the payments one will receive from such an annuity.214 This behavioral bias will also make an immediate annuity with a guaranteed minimum payment period comparatively attractive to the younger buyer, since such an annuity is essentially the bundling of a term annuity and a deferred annuity.215

The widespread availability of variable life annuities at a reasonable price might also increase annuitization rates. Variable annuities offer an opportunity for the annuitant to obtain returns based on a variety of

212 Benartzi et al., supra note 15, at 157.
213 This is due to the overweighing of the small risk of an early death.
214 See Hu & Scott, supra note 68, at 76. Specifically, if the deferred annuity is set to commence at a late enough age, then the “underweighing of large risk” bias leads to the annuity being comparatively attractive. In cases where the deferral age is not late enough for this to be the case, there is still some lessening of the “overweighing of small risk” bias that makes an immediate annuity comparatively unattractive. Id.
investment options. Modeling has shown that the availability of variable annuities should increase annuitization in the earlier part of retirement. However, there is also evidence that in the real world variable life annuities are plagued by high fees. Thus, an important step in increasing the popularity of variable annuities is to offer them at a reduced price. While it is likely that more people would annuitize if well-priced variable annuities were widely available, it is unclear to what extent this would be the case, given that the availability of equity investment does not appear to be a major reason for low annuitization.

The availability of annuities that include liquidity features might also play a role in increasing annuitization rates. Despite being speculative, the proposal to increase or even mimic liquidity in annuities is intriguing. It has been suggested that offering annuities bundled with long-term health insurance might encourage annuitization, as one of the reasons people desire liquidity is to self-insure against health shocks. It has also been proposed that refundable annuities could partly rectify liquidity concerns.

VI. CONCLUSION

Life annuities give retirees an opportunity to enjoy an income stream that is free from investment and longevity risk. Furthermore, they...
typically offer a higher retirement income as compared to other investment techniques that avoid such risks. The opportunity for retirees to purchase a life annuity at a reasonable price enables many of them to enjoy income security at a time of their lives when it is most needed. And while full annuitization of retirement wealth might be unsuitable for most retirees, many of them would benefit from partially annuitizing their savings. Despite this, the vast majority of retirees choose not to annuitize their retirement funds. Because low annuitization is due in part to market imperfections, policies that increase the attractiveness of annuities should be enacted to give retirees a greater chance of experiencing a secure income stream in retirement.

Specifically, policies should promote (1) the opportunity for retirees to directly purchase annuities from their retirement plans, (2) the presence of a comprehensive guarantee for life annuity payments, and (3) the inclusion of entitlements displayed as income streams in plan benefit statements. Such measures would help create a positive feedback loop of higher annuitization rates and lower annuity prices. Additional policies, such as implementing a system that easily allows consumers to compare annuity prices would encourage competition and contribute to this goal. It is also possible that a tax incentive on annuity income might be an important and unavoidable ingredient in this positive feedback loop. However, the most elegant set of pro-annuitization policies would be as non-coercive as possible.