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On the design of annuity trial periods

Abstract

Consumers' reluctance to annuitize retirement wealth has been attributed to a range of economic as well as behavioral considerations, one of which is the fear of making an irreversible commitment with a large sum of money. This fear may be enhanced by the lack of familiarity with annuity products and the complexity of the annuitization decision. Some have suggested that consumer education about longevity risks and the structure of annuity products might increase annuitization. Others have proposed allowing annuitants to withdraw from annuity contracts for some period of time after purchase as a way to increase annuity take-up.

In 2017, TIAA, a large retirement plan provider to the education and nonprofit sectors, introduced a program called *Income Test Drive* (ITD) that was designed to enhance understanding of annuity-style payouts. For two years after signing up, ITD participants receive an income stream that matches what they would have received if they had purchased an annuity. Afterwards, the participant chooses between stopping or continuing the monthly payments in the form of a lifetime annuity. In this sense, it is a behavioral intervention that promotes understanding of the benefits of regular monthly income, rather than a product innovation that completes an otherwise missing market. We discuss several design issues about the structure of ITD programs, the way in which insurers could structure annuity on-ramps for retirees, and how risk-sharing is affected under different arrangements. We also provide descriptive data about participant behavior in the program, although we do not make any causal inferences because the program was rolled out as a choice to all TIAA participants at the same time and thus, there is no randomly assigned "control group" To use for comparison purposes.

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1. Introduction

Longevity risk is a key factor in the late-life financial planning of households that rely on accumulated assets to support retirement consumption. This risk can be insured by purchasing an annuity contract, but few households do this either in qualified plans or in the retail market.

In the United States, the SECURE 2.0 Act, which was enacted in 2022, removed some impediments to employers offering annuities in their retirement plans, including by limiting employer liability if an annuity provider encounters financial difficulty before benefits are fully paid. This has sparked an increase in interest among defined contribution (DC) plan sponsors in offering in-plan annuity products. Even if the changing policy and regulatory landscape leads to more income options within plans, it remains an open question whether more participants will choose the annuity options at retirement.

There are many possible reasons that individuals do not choose to annuitize, even though many surveys suggest that households would value a stable income stream in retirement. Some explanations fit neatly within a classical lifecycle framework: a desire to leave a bequest, as in Lockwood (2018); high annuity prices due to adverse selection, as in Mitchell, Poterba, Warshawsky, and Brown (1999); risk-sharing within families, as in Kotlikoff and Spivak (1981) and Brown and Poterba (2000); and the lack of inflation protection in many annuities, noted in Brown, Mitchell, and Poterba (2001). If limited take-up of annuities is rooted exclusively in some combination of these rational considerations, an annuity trial period is unlikely to raise demand because it does not address these issues.

Other explanations, however, do not fit neatly within the rational paradigm but instead draw from a behavioral economics framework. These include survival pessimism, as in O'Dea and Sturrock (2023); decision complexity, as in Brown, Kapteyn, Luttmer, Mitchell, and Samek (2021); and the fear of losing control over one's wealth. For at least some of these explanations, behavioral interventions could affect demand. Indeed, motivated by precisely such behavioral concerns, Gale, Iwry, John, and Walker (2008) suggested automatically paying individuals who were ready to tap their retirement saving accounts a monthly income for a trial period of two years and then for defaulting them into an annuity contract unless they opted out. They argued that:

> "giving retirees an opportunity to 'test drive' a lifetime income product … would help overcome existing biases, reframe their view of lifetime income products, and improve their ability to evaluate their retirement distribution option." (Gale et al., 2008, p. 3)

Although nearly two decades have elapsed since this proposal was advanced, it has generated limited marketplace interest.

Insurers have tried other ways to assuage potential buyers' reluctance to annuitize. For example, many insurers offer "years certain" annuities that promise to make payments to the annuitant or to the annuitant's beneficiary for a certain number of years after the purchase date even if the annuitant dies during this period. Many also offer "refund" annuities that promise to return the nominal annuity premium to the annuitant's estate or another designated beneficiary if cumulative benefits on the date of the beneficiary's death fall short of the annuity purchase price. It is often assumed that these features are designed to address bequest motives, although it is not obvious what form of bequest motive would lead to these particular structures being optimal. Whatever the motivation, Brown, Poterba, and Richardson (2025) report that among TIAA participants, annuities with a "years certain" provision are much more popular than those without one.

Some consumers may be concerned about the irreversibility of the annuity decisions. An annuity is a long-term contract, and a buyer may worry about coming to regret this commitment later as individual or economic circumstances change. Although it is sometimes possible to "undo" an annuity contract, such options tend to be extremely limited. For example, state insurance regulations often require insurers to offer annuity buyers "free-look" periods, typically less than one month, during which they can cancel their purchase and receive their money back. Beyond that window, it can be very expensive to reverse an annuitization decision. There is a secondary market for annuities in which buyers pay cash for the rights to future annuity payouts, but most annuities sold in this market are the result of structured settlements in legal cases or annual payouts such as state lottery winnings, not self-purchased retirement income annuities. Anecdotal evidence suggests the price annuity sellers receive often falls well below the plausibly calculated present discounted value of future payments.

Offering annuity buyers an option to reverse their purchase after a longer period exposes insurers to selection risk. Annuitants who learn that they have a longevity-reducing health condition are more likely to reverse their purchase, leaving insurers with longer-lived, and costlier to serve, annuitants. This translates into a lower payout for annuity buyers.

In 2017, the Teachers Insurance and Annuity Association of America (TIAA), a large national insurance company that provides retirement plan services to the educational and nonprofit sectors in the United States, introduced Income Test Drive (ITD) to promote annuity demand.[1] ITD enables a potential annuity buyer to experience annuity-like payouts for up to two years before making an irreversible annuitization decision. This product is only available in conjunction with variable annuities, and this combination offers several advantages that we will discuss below. ITD is not so much a new product offering that changes the possible university of consumption choices as it is a change in the framing of the annuitization choice and description of the annuity product. In this regard, it is a behavioral intervention resembling automatic enrollment in 401(k) plans.

This paper describes the structure of ITD and summarizes TIAA's early experience with take-up of the option. It is divided into four sections. The first describes the ITD product offered by TIAA. The second explains some of the challenges that arise when offering annuity trial periods for fixed annuities, and how TIAA's restriction to variable annuities overcame them. The third section summarizes the attributes of the TIAA participants who selected ITD. It also reports that roughly half of the participants chose to follow the default path and annuitize after two years. A brief conclusion discusses the feasibility of trial annuities and describes the type of research that could determine whether ITD raises the demand for lifetime income products.

2. Income Test Drive at TIAA

The Income Test Drive (ITD) program was introduced in 2017 to allow TIAA participants who held variable annuity contracts to choose whether to experience the regular cadence of payments associated with annuitization. It is described on the TIAA website,[2] but it has not been widely marketed to participants. The brief summary reads:

> "Ever wish you could experience the benefits of a variable annuity without the long-term commitment? Now you can! If eligible, you can 'test-drive' monthly payments from your CREF or TIAA variable annuity."

ITD combines two behavioral interventions: an opportunity to experience a predictable flow of income payments, and something close to an annuitization default after two years. Those who sign up for ITD receive periodic payouts for up to two years equal to the amount they would have received if they had purchased an annuity. This experiential intervention may educate consumers about the pros and cons of having a stable monthly income stream versus consuming out of a fixed stock of wealth. Then, after two years, their remaining balance is annuitized if they fill out the required documents. The need for them to fill out documents means this is not a pure default option that automatically kicks in even if the participant does nothing. We note below that, due to regulatory concerns, a pure default option is more difficult in the annuitization setting than in other settings such as automatic 401(k) contributions, portfolio selections, or portfolio rebalancing.

2.1 How Income Test Drive works

Participants holding any variable annuity in a qualified plan account at TIAA—a 401(a), 401(k), 403(b) plan, or an Individual Retirement Account—are eligible for ITD unless it is inconsistent with a provision of their sponsoring employer's retirement plan. The relevant variable annuities include eight College Retirement Equities Fund (CREF) accounts, the TIAA Real Estate account, and the TIAA Access Lifecycle Retirement Income Fund. ITD adopters can transfer assets between accounts during the two-year test drive—for example, rebalancing from CREF Total Global Stock Account to the CREF Responsible Balanced Account.[3]

Eligibility is restricted to those who are at least 59½ years of age, although those who retire after age 55 (50 for public safety officers) may enroll in ITD but only with the balances in their employer-sponsored retirement plans. This group may not enroll with funds from an IRA until they turn 59½. The maximum eligibility age is 88 because TIAA does not offer new life annuities to those over the age of 90. The minimum ITD purchase is the lesser of $10,000 or 100% of a contract's accumulation. ITD adopters can choose monthly, quarterly, semi-annual, or annual payments, and they can select a variety of tax withholding options, including a default 10% federal tax withholding, a higher level of withholding, or no withholding. Payouts from the variable annuity account are not eligible for rollover to another qualified retirement account.

Participants who elect an ITD must choose the type of annuity they want to test-drive because withdrawals are set to match the chosen life annuity option. Both single- and joint-life annuity options are available. A single-life annuity provides income for the life of the annuitant, and a joint-life annuity provides income payments as long as either of the two annuitants, typically a retiree and the retiree's partner, remain alive. The annuitant can also select a guarantee period of 10, 15, or 20 years, with the guarantee period

1 TIAA manages a mature defined contribution pension system for more than four million participants. Brown et al., (2025) provide details on the TIAA participant base.

2 The webpage with further details may be found here: https://www.tiaa.org/public/retire/financial-products/annuities/retirement-plan-annuities/income-test-drive

3 The CREF Total Global Stock Account was previously named CREF Stock, changing effective November 30, 2025. The CREF Responsible Balanced Account was previously named CREF Social Choice, changing effective November 30, 2025.

beginning at annuitization. A guarantee period provides income for as long as the selected period in the case when the primary annuitant, or both the primary and secondary annuitants in the case of joint and survivor products, dies before the end of the selected period.

A joint-life annuity has four survivor options. Full Benefits to Survivor provides the same level of income as long as either the primary or second annuitant is alive. The two-third to survivor provides two-thirds of the initial annuity amount to the survivor. There are also options that provide half or three-fourths of the initial annuity payout to the secondary survivor if the primary annuitant predeceases the secondary survivor. Adopters can choose to annuitize their ITD balance at any time during the 24-month trial period. At the end of the trial period, all ITD assets are converted to annuity units under an immediate annuity contract, and lifetime income payments begin unless the ITD adopter has given other directions. After the annuity contract is established, the annuitant can still modify the underlying investments—known as post-settlement transfers—but they may not add additional assets to the annuity principal. Annuitizing additional assets would require a separate annuity contract.

ITD participants receive a reminder letter 120 days before the end of the trial period explaining the steps that they will need to take to complete their annuity purchase. These steps include preparing several documents and returning them to TIAA. In many employer-sponsored plans, a spousal waiver is required to elect annuitization, such as from a married participant, such as for a single life annuity or if the spouse is not the second annuitant in a joint life annuity. If this waiver, when required, is not received by the end of the trial period, the ITD annuitization default does not take effect. A substantial number of ITD adopters in our sample did not default to annuitization because this waiver was still pending. Adopters can opt out of the trial period and cancel their ITD at any time by calling TIAA. A participant may request an ITD again after at least 12 months have elapsed since a previous ITD that did not result in annuitization.

2.2 How does ITD affect a retiree's choice set?

To understand what effect a trial annuity might have on a retiree's drawdown behavior, it is important to be clear about the counterfactual—in other words, what the individual likely would have done in the absence of the ITD offering. We consider the case of a 65-year-old exiting the workforce and making a decision about how to draw down his accumulated 401(k) plan assets.

One option is to forgo annuitization entirely and take some form of systematic withdrawals. This is the very behavior that the trial annuity concept is meant to overcome because it exacerbates individuals' exposure to longevity risk. Relative to this option, the ITD is giving the consumer the experience of receiving monthly income and helping them understand that this income stream will last for the rest of their lives if they accept the annuity option at the end of the trial period. The goal of the ITD program is to encourage annuitization by helping retirees choose the annuity after having some experience with it.

A second option is for the individual to immediately annuitize his wealth at age 65 and to begin taking annuity payments. This is the approach that maximizes the mortality premium from annuitization, thus providing the highest sustainable level of lifetime income. However, because the decision is irreversible, the individual gives up liquidity and whatever benefits may be associated with controlling a pool of assets later. Relative to this approach, the ITD option provides the retiree with a slightly lower level of monthly income because they are effectively giving up two years of the mortality premium in return for the option to not annuitize at the end of the trial period. Given mortality rates of a 65-year-old in the TIAA population, one can view the ITD as accepting a several percent reduction in the future annuity stream in order to maintain liquidity, preserve the option to not annuitize, and learn whether the retiree likes having regular checks coming in each month.

A third option is for the retiree to essentially replicate the ITD strategy on their own by taking monthly withdrawals for two years in the same amount that the ITD would provide and then making a decision at age 67 of whether to purchase a life annuity or not. Relative to this option, the ITD does not deliver anything that the retiree cannot create on his own. Rather, it just simplifies the process and forces a decision: TIAA will mail the retiree a letter 120 days before his 67th birthday reminding him of his forthcoming decision. This is the sense in which the ITD is a purely behavioral intervention.

The foregoing comparisons of the three options and the ITD assume that the company is using the same interest rate and age-specific mortality rates to price annuities offered when the retiree is age 65 and age 67. In practice, the design of the trial period will determine who bears the risk that interest rates when the retiree is 67 are different from those that were expected to prevail at that date two years earlier, when the ITD began. Similarly, either the insurer or the retiree must bear the risk of changes in aggregate mortality expectations over the two years of the ITD period, such as those that might arise from a pandemic or widespread adoption of GLP-1 medications.

An especially interesting implication of TIAA using variable annuities rather than fixed annuities is that the ITD participant bears the risk of capital market fluctuations during the trial period. TIAA determines the ultimate annuity payout using the mortality table in place at the time of conversion to a life annuity, so the retiree choosing an ITD also bears any risk associated with aggregate changes over the two years. Because the participant rather than the insurer bears those risks, the insurer does not need to charge an extra risk premium when setting annuity prices.

2.3 ITD mechanics with variable annuity contracts

Both fixed and variable annuities provide periodic income, such as monthly payments, for as long as the annuitant lives. Both types can also provide options for a guaranteed minimum number of payouts and be written on multiple lives. The key difference is how the level of the periodic payment evolves over time. For a fixed annuity, the monthly payout is predetermined and is either constant in nominal terms or escalating at a pre-determined rate. In contrast, the payout of a variable annuity is tied to the performance of the investment portfolio underlying the annuity.

This difference is critical in the case of the ITD because of what it means for the timing of the annuitization decision. Were the ITD offered with a fixed annuity, the difference in annuitization values between taking an immediate annuity at 65 or waiting until age 67 could be quite large if interest rates change in the intervening period. For example, from 2021 to 2023, the yield on a 10-year US Treasury rose from 0.9% to 3.8%, resulting in an increase in payouts for a single premium immediate annuity for a 65-year-old male of approximately 30.8%.[4] This means that with fixed annuities, the decision to defer annuitization through a program like ITD rather than to annuitize immediately exposes the annuitant to risk of the level of annuity payments being much higher or lower when the annuity contract is signed. In contrast, the way a variable annuity is priced, the payout rises and falls with the underlying portfolio returns, meaning that the exact timing of the annuity purchase date is less important.

This is because the periodic payouts on variable annuities are set at the time of purchase using an assumed interest rate (AIR) and a forecast set of future mortality rates. These periodic payments subsequently adjust based on the performance of the underlying portfolio relative to the AIR and the mortality of the annuitization cohort. For example, using an AIR of 4%, if the underlying portfolio rises in value by 6%, then, in the next period, the annuity payment will increase by 2% (=6%−4%). Similarly, if the underlying portfolio only grows by 1%, then the subsequent annuity payment would be 3% smaller (=1%−4%). In the special case that the underlying investment portfolio returned exactly 4% every period, then the annuity would effectively replicate a fixed annuity priced using a 4% discount rate.

In the CREF context, because annuitants participate in the risk of aggregate mortality changes, the payouts are also updated when actual mortality diverges from predicted mortality. This means that the risk of aggregate mortality shifts is born by the annuity holders. Historically, this has been a much smaller source of variation in payouts than investment return fluctuations.

The payout during the trial period of the ITD is determined by the amount that the participant is expected to receive if his or her remaining account balance is annuitized at the end of the trial period. For a 65-year-old, the annuity is priced as if the retiree is going to receive the first two years of payouts with certainty followed by a life contingent payout stream for the rest of the retiree's life. The pricing calculation is the same as that of a life annuity with a 2-year period certain guarantee. Because there is no mortality premium being offered during those first two years, the amount of the initial payout under the ITD will be slightly less than the payout offered from an immediate annuity. This point is developed more formally, and the equations for the evolution of the annuity payout over time are presented, in the Appendix.

3. Annuity trials with fixed annuities

Although future variable annuity payouts are relatively insensitive to the date of annuitization, future fixed annuity payouts can be quite sensitive to interest rate movements, shocks to mortality rates, and variation in the value of the portfolio of assets that may be used for annuitization. This raises greater challenges in combining annuity trial periods with fixed annuities.

Consider a case in which the retirement account that might be used to purchase an annuity is invested in equities, and in which equity values rise significantly during the annuity trial period without any coincident change in interest rates that affect the pricing of the annuity contract. In this case, the early annuitant, the one who annuitized at the start of year 1, would miss out on the equity market appreciation while the ITD participant, who holds a portfolio invested in equities through the trial period, would have a larger account balance to annuitize at the start of year 2 than at the start of the previous year. This would result in a larger annual payout in year 2 and subsequent years for the annuity trial participant than the immediate annuitant. This situation would be reversed, and the annuity trial participant would receive lower future payouts, if equity values declined over the course of the year. Fixed annuity pricing is also sensitive to interest rates, and a decline in interest rates between the start of the trial and the time of annuitization would likely result in a lower payout than predicted at the start of the trial. The uncertainty surrounding the terms on which fixed

4 Compares January of each year. Annuity pricing data from TIAA, and assumes a retiree purchases a single-life annuity with a 10-year guaranteed period and has no loyalty bonus (https://www.tiaa.org/public/invest/services/wealth-management/perspectives/loyaltypays, Jun. 6, 2025.) Treasury data from Board of Governors of the Federal Reserve System (US), Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity, Quoted on an Investment Basis [DGS10], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/DGS10, Jun 6, 2025.

annuitization would take place at the end of the trial period might discourage some potential trial annuitants. By offering ITD only in tandem with variable annuities, TIAA avoids this issue.

While variable annuities paired with annuity trials avoid the investment-related uncertainty about payouts, they do not avoid potential selection in the pool of participants who choose to annuitize at different dates. This can affect the pricing of deferred versus immediate annuities. With TIAA's ITD product, a participant is purchasing a two-year, non-life contingent stream of payments with part of their retirement account balance and reserving the rest to annuitize—or not—after two years. A key question is how much wealth to devote to the two-year period certain payout product and how much to retain for potential annuitization. The annuity trial product solves this problem by equating the monthly payout during the two-year certain period and the monthly payout the participant could expect to receive from an annuity purchased in two years.

To clarify the role of the annuity trial, consider an alternative that involves the buyer purchasing *at the outset* a deferred payout annuity that begins payments after 24 months, if the buyer is still alive, along with a guaranteed stream of monthly payments for the next 24 months. This buyer removes all uncertainty about annuity pricing two years into the future. However, the buyer also foregoes an important benefit of waiting: If the participant dies before the end of the trial period, the principal that would have been used to purchase an annuity passes to the participant's heirs. When the participant purchases a deferred annuity at the outset, unless the deferred annuity has some guaranteed refund provisions, dying during the first 24 months of the payout period would extinguish any payments to future beneficiaries. The buyer of a deferred annuity does not have an option to undo the annuitization decision.

A buyer who chooses to delay annuity purchase and to purchase a bond that provides guaranteed payouts for the first 24 months, rather than a fixed annuity such as a single-premium immediate annuity (SPIA) with life-contingent payouts in all periods, foregoes 24 months of "mortality premium," the higher payouts that compensate the buyer for the potential loss of future payouts in the event of early death. When pricing the deferred annuity that an annuity trial participant might purchase at a later date, an insurer may want to recognize the favorable longevity implications of living to the end of the trial period and still choosing to purchase an annuity. The insurer also knows that a test drive participant who receives adverse health news during the first two years is unlikely to buy an annuity when the test drive expires. This selection likely makes annuity buyers at the end of annuity trials longer-lived, on average, than the pool of deferred annuity buyers without the benefit of two years of survival. Any flexibility reserved to the annuity buyer comes with a price in terms of monthly income.

The foregoing discussion assumes that the insurance company knows the probability distribution of dying at various ages as well as the relevant discount rate for the next T months. In practice, aggregate mortality experience can change, and the survival rates used in the calculations can evolve over time. The potential for changes in mortality expectations and discount rates to affect annuity payouts is documented in Poterba and Solomon (2025), which shows that in the fixed annuity market, interest rate increases contributed more than changing mortality expectations in explaining the sharp increase in U.S. fixed annuity payouts between 2021 and 2023.

3.1 The risk of interest rate or mortality rate fluctuations

A buyer who does not commit to an annuity purchase at the start of the test drive period bears the risk that changes in mortality rates and discount rates may change the payouts on a SPIA, as well as the risk of fluctuations in the value of the pool of assets that will ultimately be used to purchase the annuity. Consider an annuitant who commenced a trial annuity at age 65 in July 2021. At that time, the Annuity Shopper reports an average payout of $483 (quotes as of June 14, 2021) for an SPIA purchased by a 65-year-old male with a $100,000 premium. Two years later, after a sharp rise in interest rates, a $100,000 SPIA for a 65-year-old man offered a payout of more than $600 per month. In this case, a potential SPIA buyer would have done better by waiting to annuitize. A deferred annuity buyer in 2021 would have locked in a lower income stream than a buyer who did not make an annuity purchase decision until 2023. The reverse would have been true, however, for a prospective SPIA buyer who considered a purchase in 2019 but decided to wait until 2021. The decline in interest rates during that two-year period translated into lower payouts for SPIA buyers in 2021 than in 2019.

An insurer could absorb all or some of this risk by providing the annuitant with a guarantee of the annuity stream that will be available for purchase at a later date, but the insurer will charge something, either an upfront fee or a lower payout on the future annuity, to cover the cost of providing this guarantee. If the insurer committed to a pre-specific price for fixed annuity contract purchased after two years, the company is in effect selling the annuitant a call option to purchase an annuity in 24 months at a pre-agreed price. The value of this option depends on both interest rate risk and the risk of changes in the prospective mortality experience of those who began a trial annuity at a given age but have the benefit of learning about their health status for two more years before deciding whether to take up the annuity. If insurers were using annuity trial periods in conjunction with preset prices for fixed annuities at the end of the trial period,

they would probably build in a substantial risk cushion by offering lower promised annuity payouts until they have sufficient data to evaluate these risks.

3.2 Annuities with a cash-out option

When annuitants purchase an annuity and have an option to reverse their annuitization decision by cashing out for some period of time, the same risk-sharing principles that arise with deferred annuities also apply. For as long as the buyer has the right to cash out the annuity contract, the insurance company is at risk of changes in the mortality risk of the remaining annuitant pool. In the case of sharp increases in interest rates, annuitants might even decide to cash out their annuities and purchase new ones that offer higher payouts. By allowing the buyer to rescind annuity purchases, the company grants the buyer a valuable option. If, for example, buyers who purchased annuities in July 2021 had the option to reverse their annuitization decision until June 2023, most would have opted to do so, given the change in annuity payouts in the intervening months. To recover the cost of the option being granted to the buyer, the insurer must offer a lower payout to those who purchase an annuity with a cash-out option or would need to offer a cash-out payment that is smaller than the present discounted value of future annuity payouts by enough to compensate the firm for the lost prospective earnings associated with the annuitant's behavior.

One company offering a reversal option for a long period is Challenger Life, which serves Australia's Superannuation Fund participants. It offers a "Liquid Lifetime" annuity that includes a lump-sum payout option that annuitants can avail themselves of at any time before they reach their life expectancy on the date when they purchased their annuity.[5] This lump sum declines according to a pre-specified schedule, which is presumably calibrated to consider the non-random nature of requests for a refund. An annuitant can forego the lump-sum payout option by choosing the Enhanced Income (Immediate Payments) option, which offers a higher stream of benefits than Liquid Lifetime. The mortality experience of the annuitant population in products like this could shed light on the degree of adverse selection and on the risks that are taken on by insurance companies that offer annuitants long-term buyout options.

4. TIAA experience with ITD

We collect and analyze data on all ITD adoptions between January 2018 and February 2024. A total of 493 TIAA participants adopted ITD during this period. Many TIAA participants have assets in multiple retirement contracts (accounts) and can choose more than one annuity option or can enroll in ITD using multiple contracts. A total of 870 contracts were used by ITD participants. The ages of ITD adopters ranged from 55 to 88 with an average age of 67, and 56.2% of adopters were female. Participants who elected to adopt ITD represent less than five percent of the total number who initiated new variable life annuity contracts at TIAA during the sample period. The total number of new variable annuitants at TIAA was lower in 2018 than in 2016 while the number of participants turning 65 increased.

Participants who adopted ITD during our sample period could annuitize in rolling two-year periods from January 2020 to February 2026. However, we only examine the decision to annuitize for the subset of adopters with a full two-year's experience. This results in a subsample of 401 of the 493 adopters (713 of 870 contracts) who chose ITD between January 2018 and February 2022.

Table 1 shows the outcome of these trial annuities, the percentage of ITD adopters who annuitized by the end of the trial period, and the share of retirement contracts annuitized. Among the adopters who enrolled in ITD during our sample period, 52.1% had annuitized by the end of the trial period. There was some change in this annuitization percentage: 48.1% among those who began ITD in 2018 to 53.2% for the 2019 cohort, and 62.1% of the 2020 ITD adopters before dropping back to 50.7% in 2021. While the results are similar for adopters (52.1%) and contracts (50.5%), the reasons for non-annuitization are specific to contracts.

5 Details of this product may be found here: https://www.challenger.com.au/-/media/aol/documents/pds/challenger-pds/ga_ll_pds.pdf

TABLE 1. OUTCOME OF PARTICIPANTS STARTING INCOME TEST DRIVE FOR 2018–2021

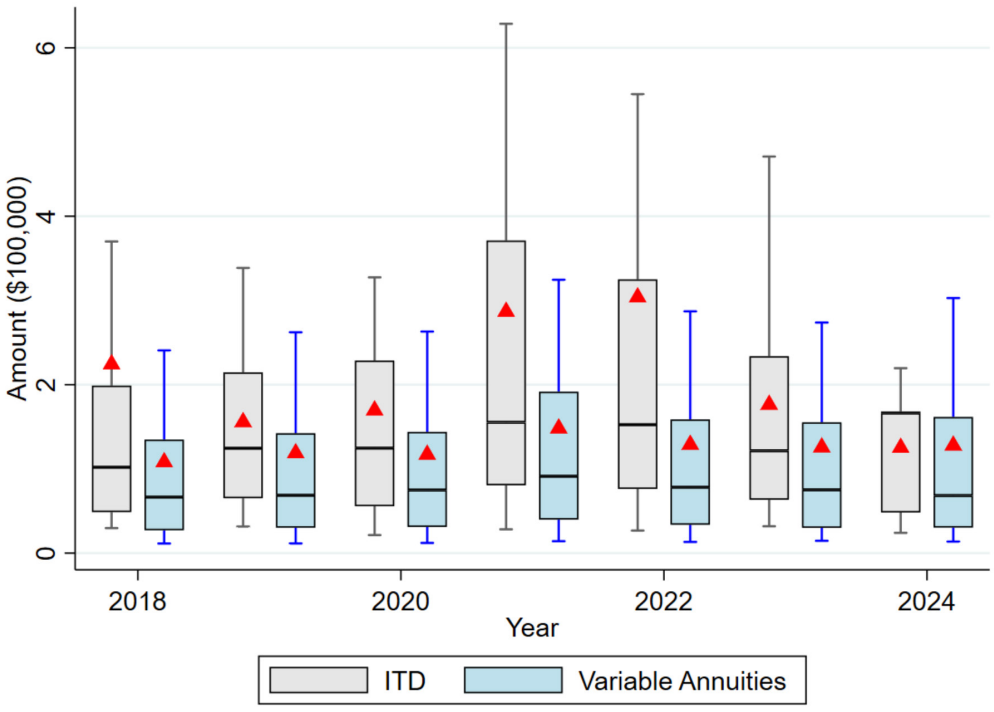
	ITD adopters	Contracts
Annuitized after 2 years	**52.1%**	**50.5%**
Not annuitized, by reason		
Voluntary termination		50.4%
Balance fell below $10K threshold so not eligible for annuitization		21.0
Annuitization not possible because spousal consent form not completed		23.5
Participant or second annuitant died before end of trial period		5.1
	n=401	n=713

Source: Tabulations from administrative records.

Roughly half of the non-annuitized contract outcomes were the result of voluntary termination, meaning that the ITD-adopter notified TIAA that they did not want to follow the default associated with the ITD. In 23.5% of the non-annuitizing contracts, the account balance could not be annuitized because TIAA did not receive a signed spousal waiver form before the ITD expiration date. This form is required when a married individual wishes to select a single-life annuity: the spouse must affirmatively waive their rights to a portion of the retirement plan assets.

Figure 1 shows the distribution of the amount of assets used by ITD enrollees compared to those using a regular variable annuity. Over seven years of experience, the average and median amount of assets used by ITD participants were consistently higher than those used by CREF annuitants. Among those reaching the end of the trial period, an enrollee used, on average, 87.4% of their eligible accumulations—the assets they held at TIAA that could potentially have been enrolled in ITD. More than half (59.7%) of ITD adopters used all ITD-eligible assets. Nearly one in five (18.4%) ITD adopters used their entire TIAA retirement accumulations for ITD. For those ITD program enrollees who annuitized their balances, the mean (median) participant balance applied to the annuity was $150,084 ($118,225). By comparison, among participants who began a variable life annuity without ever enrolling in the ITD program, the mean (median) annuitized balance was $125,117 ($75,828).

FIGURE 1. AMOUNT OF ASSETS USED FOR ITD VERSUS VARIABLE ANNUITY, BY YEAR



Source: Tabulations from administrative records.

TIAA participants could use assets from any of their variable annuity accounts when enrolling in the ITD program. Table 2 shows the distribution of these investment selections. More than 82% of ITD enrollees used at least one of the CREF equity accounts, with CREF Total Global Stock Account the most popular at 71%. Nearly half (47%) enrolled some assets in the TIAA Real Estate Account, while 40% enrolled at least some assets in a CREF fixed income account. Thirty percent of ITD-adopters enrolled some assets from the CREF Responsible Balanced Account, which is a blended investment product holding more than three-quarters of its portfolio in equities and the balance in bonds. Most ITD adopters—67.5%—enrolled more than one investment in the ITD program.

TABLE 2. INVESTMENT SELECTIONS FOR ITD

Investment Account	Percentage of ITD-adopters with assets in this account
CREF equity accounts	82.2%
CREF Total Global Stock	70.6
CREF Global	30.8
CREF Growth	30.0
CREF S&P 500 Index	19.3
CREF fixed income accounts	40.4
CREF Core Bond	28.8
CREF Inflation-Linked Bond	21.1
CREF Money Market	9.9
CREF Responsible Balanced	30.2
TIAA Real Estate	46.2

Source: Tabulations from administrative records. Percentages may not sum to 100% because adopter may have multiple accounts. N=493 contracts.

More than two-thirds of ITD adopters—69.4%—paired a CREF equity account with another investment. One-third (33.9%) had both CREF equity and CREF fixed income accounts, while only 6.5% had fixed income but no equity. Among adopters, 38.5% had both TIAA Real Estate and CREF equity, while 27.0% had both Real Estate and CREF fixed income. Just over thirty percent (30.6%) elected to use only a CREF equity account, and 2.0% elected to enroll only TIAA Real Estate without any CREF account.

Most annuity choices for ITD contracts (58.5%) were a single-life annuity, while 41.5% were a joint-life annuity. Table 3 shows the contract choices with respect to guarantee period and survivorship options. Roughly 75% of single-life contracts had a guarantee period compared with 85% of joint-life contracts. The 20-year guarantee period was most popular for joint-life selections, and the 10-year was most popular for single-life selections. Nearly all (88.7%) of the joint annuity selections had the full to survivor option.

TABLE 3. ANNUITY SELECTIONS OF ITD CONTRACTS (START OF TRIAL PERIOD)

		Joint-life Annuity			
Guarantee period	Single-life annuity	Full to survivor	Two-thirds to survivor	75% to second annuitant	50% to second annuitant
None	14.3%	5.5%	0.2%	0.2%	0.3%
10 years	24.4	6.7	0.3	0.1	0.2
15 years	9.0	5.1	0.0	0.1	0.0
20 years	10.9	19.5	0.9	0.9	1.3

Note: Percentages shown. Source: Tabulations from administrative records. N=870.

Among ITD enrollees who annuitized, 3% had a life annuity before participating the ITD program, and 76.5% annuitized other assets outside the ITD program after their ITD started. Nearly all of those in the latter group (95.6%) opted for a fixed annuity rather than the variable annuity associated with the ITD program. This percentage is higher than the 31% of retirees at TIAA who have life annuity payouts as a part of their retirement income received from TIAA (Brown et al. 2025). It is unclear if the high percentage of ITD adopters doing further annuitizations is due to selection of the ITD population—in other words, this group has a higher-than-average preference for annuities—or if this reflects an impact of the ITD program in helping to communicate the benefits of lifetime income. Only 4.4% of the ITD adopters who annuitized at the end of the trial period annuitized further variable annuity accumulations. This may be because most ITD annuitants used most of their CREF eligible balance for the ITD.

We do not have sufficient statistical power to detect the effect of ITD in the time series of TIAA annuitization decisions, and there is no cross-sectional variation in ITD access that could be used to study its effects. We hope that future research will be able to address the key issues about trial annuities with a more powerful research design. It would also be helpful to understand how participants learned about the ITD program and decided to participate in it. We have imperfect data on whether participants visited the ITD landing page on the TIAA website. We can only observe participants who were logged in to their accounts when they visited, but it is possible for participants to look at the landing page without logging in. Between 2019 and February 2024, 2,420 participants visited the ITD landing page at least once and 136 (5.6%) of those began the ITD. These participants account for 37.7% of all those who started an ITD during this time. Participants who viewed the page and ultimately started an ITD on average viewed the page 2.3 times; those who viewed the page but did not start a contract viewed the page an average of 1.2 times. In future work, we may be able to survey ITD adopters and ask how they learned about this product.

5. Conclusion: Are annuity trial periods feasible and what can they accomplish?

There is growing public policy interest in providing retiring workers greater access to lifetime income options through their workplace DC plan. Several proposals recommend offering annuity trial periods as a method to reduce barriers to the take-up of lifetime income in retirement. Most of these proposals envision the use of a fixed annuity during the trial period. This paper highlights several issues with this approach, notably how interest rate sensitivity can impact risk-sharing between insurers and households. We compare the trade-offs of using fixed versus variable annuities during the trial period, especially with regard to how risks are shared between participants and insurers.

There are many open questions about the extent to which annuity trial periods affect prospective annuitization behavior. The central one is whether trial periods increase the ultimate take-up of annuities among retirement plan participants. The gold standard for answering this question would be a randomized controlled trial in which some participants in a DC retirement system were offered an annuity test drive, and others were not. A less compelling research design, closer to what this paper analyzes, would involve a retirement plan introducing a test drive option for all participants. It might be possible to learn about the effect of a test drive by comparing annuitization rates before and after the test drive became available.

The TIAA experience with ITD provides some information on the potential viability of such a program. Just over half of those who enrolled in ITD ultimately chose to annuitize their retirement account balance. Some participants who selected ITD might have annuitized without the ITD option, and it is even possible that ITD delayed their annuitization. Others might not have annuitized were it not for the ITD option. Some participants may have discovered potential needs for a pool of liquid assets during the trial period, for example, because they learned that they or a family member had a

medical condition that might require large but unpredictable outlays. Annuitization delayed might be annuitization foregone. Studying this set of issues is difficult because it requires some way of identifying retirement plan participants who would have annuitized at retirement in the absence of a test drive option. Distinguishing between these two possibilities in other settings is a key priority for future study.

The TIAA program we describe is a voluntary program that was available to all participants who were eligible for variable annuitization. The absence of randomization in who was eligible limits the conclusions that can be drawn from it, but we hope that information on the structure of this program and on some of the choices made by participants in it can inform future research on other test-drive-type programs.

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Appendix: Variable annuity pricing with an ITD

This appendix presents the expressions that would describe the payouts available to annuitants under ITD and various alternatives, under the assumption that the insurance company providing these annuities just covers its costs. First, consider a retirement plan participant who chooses to annuitize a principal L_0 in year 0. Assume that future annuity payments are made once each year, and that the relevant mortality table indicates that this buyer has a probability P_t of being alive t years after purchasing the annuity. T is the maximum number of remaining years of life (P_T = 0). In determining variable annuity payouts, TIAA assumes an AIR of 4%, which means that if the assets backing the variable annuity return more than that 4% in any year, the annual annuity payout will rise, and vice versa. The return in year t on the portfolio of assets the annuity is invested in is r_t.

Abstracting from expenses of managing annuity products and taxes, an insurer would expect to break even on a variable annuity product, assuming an AIR of 4%, if it offered an initial annual annuity payout of V_1:

$$V_1 = \frac{L_0}{\sum_{t=1}^{T} \frac{P_t}{1.04^t}} \tag{1}$$

This payout is larger, by a "mortality premium," than the amount that could be paid if the insurance company committed to pay the same amount in every year for T years regardless of the annuitant's survival, assuming that it could earn a 4% return each year. In that case, the payout would be:

$$V_{1'} = \frac{L_0}{\sum_{t=1}^{T} \frac{1}{1.04^t}} \tag{1′}$$

When portfolio returns diverge from the assumed AIR of 0.04, the annual variable annuity payout evolves according to:

$$V_t = (1 + r_{t-1} - 0.04)*V_{t-1}. \tag{2}$$

For a variable annuity buyer who annuitized N years ago and received a payout of V_1 in the first year, the payout in year N is therefore:

$$V_N = \prod_{t=1}^{t=N}(1 + r_t - 0.04) * V_1. \tag{3}$$

To illustrate how this payout is calculated, consider a trial annuity with a one-year trial period and only one payout during the year. With a 4% AIR, the payout during the trial period, X_1, that the insurer can offer while still breaking even satisfies this equation:

$$\left(\sum_{t=2}^{T} \frac{Q_t}{1.04^{t-1}}\right) * X_1 = (1.04 * L_0 - X_1) \tag{4}$$

The term on the right-hand side of (4) is the value of the participant's account at the start of year 2 when the portfolio earns 4% during the trial year, and the trial annuity payment of X_1 is withdrawn from the account. The mortality probabilities used in equation (4), the $\{Q_t\}$ values, differ from those used in equation (1) because they condition on the participant's survival to the start of year 2. If P_1 is the probability of surviving until the end of year 1 (start of year 2), then $Q_2 = P_2/(1\text{-}P_1)$. There are similar adjustments for all other survival probabilities. Equation (4) can be solved for X_1:

$$X_1 = \frac{(1.04)*L_0}{1+\sum_{t=2}^{T} \frac{Q_t}{1.04^{t-1}}} \tag{5}$$

To understand how the timing of the annuitization decision, either at the start of year 1 or the start of year 2, affects the payouts to a variable annuity buyer in years 2 and beyond, compare the payouts of two hypothetical participants—one who buys a variable annuity at the start of year 1, and receives payout V_1 in the first year and payouts given by equation (2) in subsequent years, and another participant who enrolls in the ITD program, receives payout X_1 in the first year, and then annuitizes at the start of year 2. The payout in year 2 for the "immediate annuitizer" would be:

$$V_2 = (1 + r_1 - 0.04) * V_1 = (1 + r1 - 0.04) * (\frac{L_0}{\sum_{t=1}^{T} \frac{P_t}{1.04^t}}) \quad (5)$$

To determine the ITD participant's payout in year 2, we must find the relevant account balance at the end of year 1:

$$L_1 = (1 + r_1)*L_0 - X_1. \quad (6)$$

Purchasing a variable annuity with that balance at the start of year 2 would yield a payout in year 2 of:

$$X_2 = \frac{L_1}{\sum_{t=2}^{T} \frac{Q_t}{1.04^{t-1}}} \quad (7)$$

Substituting (6) into (7) yields:

$$X_2 = \frac{(1+r1)*L_0}{\sum_{t=2}^{T} \frac{Q_t}{1.04^{t-1}}} - \frac{(1.04)*L_0}{(1+\sum_{t=2}^{T} \frac{Q_t}{1.04^{t-1}})*(\sum_{t=2}^{T} \frac{Q_t}{1.04^{t-1}})} \quad (8)$$

A participant who annuitizes at the start of year 1 benefits from the returns to the portfolio underlying the variable annuity, r_1, because the variable annuity payout rises when r_t > 0.04 and falls when r_1 < 0.04. In equation (5) the derivative of V_2, the payout to the person who annuitizes in period 1, with respect to the portfolio return r_1 is $1/\sum_{t=1}^{T} \frac{P_t}{1.04^t}$. The participant who enrolls in the annuity trial program also experiences higher year 2 payouts—in this case, in the first year after annuitization when the value of the portfolio assets rises. For this participant, the derivative of the year 2 payout with respect to r_1 is $1/\sum_{t=2}^{T} \frac{Q_t}{1.04^{t-1}}$.

The terms in the denominators of these two expressions differ in two ways. First, there's one fewer term in the second sum, reflecting the participant being one year older when the annuity contract is executed. Second, the probabilities of living to a given age in the second sum—the $\{Q_t\}$ values—are greater than the $\{P_t\}$ values *at each age* because the second participant's survival through the annuity trial year, year 1, implies a higher probability of being alive at all future ages. As noted above, $Q_2 = P_2/(1-P_1)$, and a similar adjustment applies for all of the other values of $\{Q_t\}$. This means that the discounted sum of the survival probabilities starting in year 1—and the similar discounted sum starting in year 2, using the 4 percent AIR as the discount rate—are related by the following expression:

$$\sum_{t=1}^{T} \frac{P_t}{1.04^t} = P_1/1.04 + (1-P_1)*(\sum_{t=2}^{T} \frac{Q_t}{1.04^{t-1}}) \quad (9)$$

For plausible mortality parameter values for a participant at age 65, this implies that the ratio of $1/\sum_{t=1}^{T} \frac{P_t}{1.04^t}$ to $1/\sum_{t=2}^{T} \frac{Q_t}{1.04^{t-1}}$ is about 0.95, suggesting that nearly all of the portfolio return r_1 accrues to the participant regardless of whether the annuity is purchased at the start of year 1 or a year late after enrolling in an ITD program.

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