Trends in Retirement and Retirement Income Choices by TIAA Participants: 2000–2018

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Abstract: This paper documents trends over the last two decades in retirement behavior and retirement income choices by participants in TIAA, a large and mature defined contribution plan with a wide range of withdrawal options. Between 2000 and 2018, the average retirement age rose by approximately 1.3 years for female and 2 years for male participants. There is considerable variation in the elapsed time between the last contribution to and the first income draw from participants' plan accounts; only 40% take an initial income payment within 48 months of their last contribution, which is likely to coincide with retirement. Later retirement and lags between retirement and the first retirement income payout led to a growing fraction of participants reaching the Required Minimum Distribution (RMD) age before starting income draws. Between 2000 to 2018, the fraction of first-time income recipients who took no income until their RMD rose from 10 to 52%, while the fraction of these recipients who selected a life-contingent annuitized payout stream declined from 61 to 18%. Among those who began receiving income before age 70, annuitization rates were significantly higher than among those who did so at older ages. Aggregating across all income recipients at a point in time, not just the new recipients, the proportion who had a life annuity as part of their payout strategy fell from 52% in 2008 to 31% in 2018. By comparison, the proportion of all income recipients taking an RMD payment roughly doubled, from 16 to 29%. About one-fifth of retirees received more than one type of income; the most common pairing was an RMD and a life annuity. The data suggest that the RMD is becoming the *de facto* default distribution option for newly-retired TIAA participants.

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As the baby boom cohort moves from its prime working years into retirement, a rising fraction of retirement-age households has substantial accumulations in defined contribution (DC) pension plans. Researchers and practitioners are increasingly interested in the retirement draw-down phase during which households must decide how to convert DC account assets into income and how whether to insure against longevity risk. The demand for life-contingent annuities attracts special attention because although these products play a central role in many models of optimal retiree behavior, the market for life annuities in the United States is small. LIMRA (2019) reported about $234 billion in total annuity sales in 2018 but only about $9.7 billion in immediate annuity sales.

DC plan participants have substantial discretion about their retirement payout strategy. For many retirees, the process of withdrawing funds from their DC plans includes a sequence of decisions spread across many years rather than a single decision at the time of retirement. Depending on their plan's income options, retirees can select from a range of strategies, including withdrawing the funds in a lump sum, requesting a set of structured periodic distributions, using the funds to purchase a life-contingent annuity, or deferring withdrawal of the funds until they are required to do so by the IRS' required minimum distribution (RMD) rules. Although withdrawal options vary across plans, few DC plans in the for-profit sector offer an in-plan life-annuity option. Vanguard (2020), for example, reported that only 13% of the DC plans it administered, covering 14% of its plan participants, provided participants with an annuity option at retirement. The lack of direct plan access to guaranteed income requires retirees seeking such protection to withdraw funds and purchase an annuity in the retail market

where prices tend to be less favorable. This makes it difficult to compare annuity demand with other types of retirement income strategies.

Unlike most 401(k) saving programs offered by for-profit employers, the TIAA system, launched in 1918, is a mature DC system. It serves the employees of colleges, universities, and other not-for-profit entities, and provides all participants with a large set of distribution options, including life annuities. It therefore offers an almost unique opportunity to study the drawdown behavior of individuals in DC plans. Many TIAA participants have contributed to the system for most of their careers, making the balances at retirement a larger component of their wealth than the accumulations at many corporate 401(k) plans. This makes the information on their income selections particularly informative, since the TIAA balance is less likely to be viewed as a supplement to another source of retirement plan. Prior to 1989, most retirees in this system were required to purchase a life annuity. From 1989 onward, participants have had many more choices, which today include the ability to take lump-sum distributions, systematic withdrawals, non-life guaranteed income, or RMD options. Administrative data on distribution choices makes it possible to study not only the amount withdrawn from DC plan accounts, but also the form of such withdrawals. Other sources of similarly high-quality information on distribution amounts, such as tax returns, lack this granular detail on payout structure.

In part because of the historically high annuitization rate among TIAA participants, the payout decisions of this population have attracted prior research attention. King (1996) presented information on the choice between single- and joint-life annuities during the mandatory annuitization era. He reported that the share of male retirees selecting a one-life annuity declined from 44% in 1978 to 26% in 1994, with the largest drop taking place after the

Retirement Equity Act of 1984 required married retirees to take a joint-life annuity unless their spouse signed a waiver. Ameriks (1999, 2002) updated these findings and reported growing interest in non-annuity options as the menu of distribution options expanded, with a substantial number of participants deferring distributions until they were required to do so by RMD rules.

Some of the data we report can be combined with information in these prior studies to create longer time series on distribution trends. However, our analysis differs from past work in two important ways. First, we include all non-life contingent guaranteed income options in our analysis because, unlike the previous studies, we can distinguish retirees taking income distributions from those making asset transfers using various non-annuitized distribution options. Second, we analyze both initial income choices and total income distributions, noting that in some cases participants select multiple payout options and that their first income choice may not align with their later choices.

Using a unique administrative dataset, we analyze trends in retirement ages, initial income distribution choices, and total income distributions. Although we do not have direct observations on labor market activity, we impute "retirement" to any participant over the age of 59½ who stops contributing to the TIAA system. Our estimate of the number of new retirees rises from 19,000 in 2000 to more than 54,000 in 2018, a period when the distribution of retirement ages also shifted to older ages. In the last decade of the sample, the average age of retirement increased by 1.6 years for men and 1.3 years for women.

Examining trends in initial income choices, we find a dramatic change in the mix of withdrawal options selected over this period. The fraction of TIAA participants who selected an

annuity when they began drawing down their account declined from 61% in 2000 to only 18% in 2018. Over the same period, there was a marked increase–from 10% to 52%–in the fraction first-time income recipients whose initial draw was an RMD. The proportion of retirees choosing systematic withdrawals as first income also increased, rising from 6% to 18%. The fraction choosing initial income in the form of non-life guaranteed income fluctuated between 20 and 30% over the study period. Among retirees who made an initial income selection before age 70, the fraction choosing a single-life annuity declined from 31% to 19% between 2000 and 2018, while the fraction choosing a joint-life annuity dropped from 36% to 19%. Among those who did not draw any retirement income until they were at least 70 years old, 52% in 2000 and 85% in 2018 used an RMD for their initial income draw. The share of this older group selecting a life annuity for its first income draw fell from 41% to about 6% over the same period.

In addition to examining the initial withdrawal choice, we also consider total system income distributions because many participants – approximately 22% of income recipients in 2018 -- receive more than one type of payout from their account. About 31% of income recipients in 2018 had a life annuity as a component of their retirement income distribution. Nearly half of those annuitants also took an RMD. Even with the decline in annuitization among new income recipients, when we aggregate over all TIAA income beneficiaries in each year, annuities were the most common type of payout in every year in our sample, although RMDs and annuities were nearly equal in 2018. The aggregation of all income beneficiaries includes some participants who have been receiving income for several decades.

This paper is divided into seven sections. The next section describes the payout options available to TIAA participants and how these changed over time. Section two describes the

administrative data that underlie the analysis, explains how the sample is constructed, and analyzes the distribution choices of the aggregate beneficiary pool over the 2008–2018 period. The next two sections summarize age-specific retirement rates for TIAA participants and the distribution of the elapsed time between retirement and the start of income draws. Section five tracks the changing mix over time of initial income choices among retirees, while section six reports on the prevalence of multiple types of income draws. The final section concludes.

1. HOW CAN PARTICIPANTS WITHDRAW ASSETS FROM TIAA?

The set of payout choices available to TIAA participants has expanded over time. This section describes those choices and chronicles the evolution of the distribution menu.

Life annuities, which have been available to TIAA participants since the system launched in 1918, provide income for the remaining life of the participating annuitant, or annuitants if a two-life annuity is selected. Until 1988, a life annuity was the only option available to TIAA participants taking retirement income. An annuity is an irrevocable contract between TIAA and the annuitant(s) and is the only income option that provides insurance against the risk that the annuitant(s) may live longer than their assets would otherwise support. A participant may choose this income option at any age up until age 90. Selecting a life annuity requires making a number of choices, including between a fixed annuity (TIAA Traditional or TIAA Stable Value) or a variable annuity (CREF) and between single (participant only) or joint (participant and spouse/partner) life coverage. Additionally, a participant can specify a guaranteed period, with an associated reduction in the periodic annuity payment, to ensure that income payments to a designated beneficiary will continue for at least a minimum number of years even in the case of an early death of the annuitant(s).

Beginning in 1989, the distribution choice menu broadened to include alternative forms of guaranteed non-life annuity options and non-guaranteed income.[1] An **annuity certain** provides a participant with a guaranteed stream of payments for a fixed period, such as 10 or 20 years. Although labeled an annuity, the payouts associated with this option do not depend on the mortality experience of the participant or any other beneficiaries. A participant can begin an annuity certain at any age but may face tax penalties for distributions taken before age 59½.

A **transfer payout annuity** (TPA) is a similar to an annuity certain, providing a sequence of payments from a TIAA Traditional account spread over a period of 7 to 10 years, which can be taken either as income or as an asset transfer to another investment. A participant can begin a TPA at any age, but again, income distributions taken before 59½ may be subject to an early distribution tax penalty. Our analysis excludes TPAs that represent asset transfers and includes only TPAs that involve an income payout.

The **interest payment retirement option** (IPRO), introduced in 1991, can be used by individuals who do not yet want to purchase an annuity but wish to begin receiving systematic income payments from accumulated assets in their TIAA Traditional Annuity. The monthly interest credited to the TIAA Traditional Annuity accumulations is distributed to the participant as an income payment, while the principal balance of the accumulation remains undistributed

[1] TIAA retirement offerings are selected by institutions, each of which has a distinct retirement plan. In some cases, the plan documents of the participating institution may have required updating or amendment to allow participants at that institution to take advantage of the expanded post-1989 payout offerings. While most such changes took place relatively quickly, in some cases, especially at smaller institutions, these changes may have taken some time to implement and the expansion of payout options may have been delayed for some period.

and must later be annuitized or converted into required minimum distributions. A participant must begin an IPRO before the age of 69½.

Beginning in 1991, TIAA began offering non-guaranteed income options to its participants. The most commonly used option is the **required minimum distribution** (RMD)[2], which provides retirees over the age of 70½ with an amount of income just sufficient to avoid penalties that the federal government assesses on those who have assets accumulated in tax-deferred retirement accounts. The RMD is required if the participant's other income draws fall short of the IRS requirement.[3] The impact of RMD rules has begun to attract research attention. Horneff, Maurer and Mitchell (2021) use a lifecycle model to study how RMD requirements could affect DC plan withdrawals and consumption. Brown, Poterba, and Richardson (2017) and Mortenson, Schramm, and Whitten (2019) study the impact of an RMD holiday in 2010, finding that many taxpayers continued to take RMDs even though they did not have to.

Systematic withdrawals and transfers (SWATs) have been available to participants since 1996. Participants using a SWAT contract specify a desired schedule of payments, and regular withdrawals or transfers are made from their account according to the schedule. Payments can be stopped or changed at any time, which makes this a very flexible distribution option, but will otherwise be made as long as there are assets left to fund them. Participants can begin SWAT

[2] Ameriks (2002) notes that this option was called the Minimum Distribution Option (MDO) when it was introduced in 1991. It was expanded and relabeled the RMD option in 2012, when a number of administrative changes made it easier for participants to utilize it.

[3] The age at which required distributions had to begin was 70½ throughout our sample. In 2020, Congress raised the age to 72 for 2020 and subsequent years.

payments at any age, but may be subject to early withdrawal penalties. Following our treatment of TPAs, we only include SWAT payments taken as income.

Finally, **cash payouts**, taken as lump-sum distributions, have been available to participants since 1991. We include cash payouts that represent taxable distributions in our analysis but exclude asset transfers that are rollovers to other asset managers. We distinguish between the two, as with TPAs and SWATs, using information on the distribution's tax status, which is captured on the IRS Form 1099. Participants may take cash payouts at any time; they may be subject to early distribution tax penalties if their age is below 59 ½ years.

Table 1.1: Features of Income Distribution Options

Income Type	Initial Year	Guaranteed?	Life Contigent	Eligibility Age	Mandatory
Life Annuity	1918	Yes	Yes	< 90	No
Annuity Certain	1989	Yes	No	Any age	No
TPA	1989	Yes	No	Any age	No
IPRO	1991	Yes	No	< 69.5	No
RMD	1991	No	No	> 70.5	Yes
SWAT	1996	No	No	Any age	No
Cash	1991	No	No	Any age	No

Table 1.1 summarizes the features of the various income distribution options. Each year, a participant who has not previously annuitized his or her entire balance at TIAA can choose to annuitize, to elect a non-annuity payout plan, or to take only whatever distribution is required–possibly zero–and to postpone further draw-down decisions for another year. This delay option is exercised by many participants. The gap between our estimate of the participant's retirement date and the start of income payouts is often several years.[4] Only

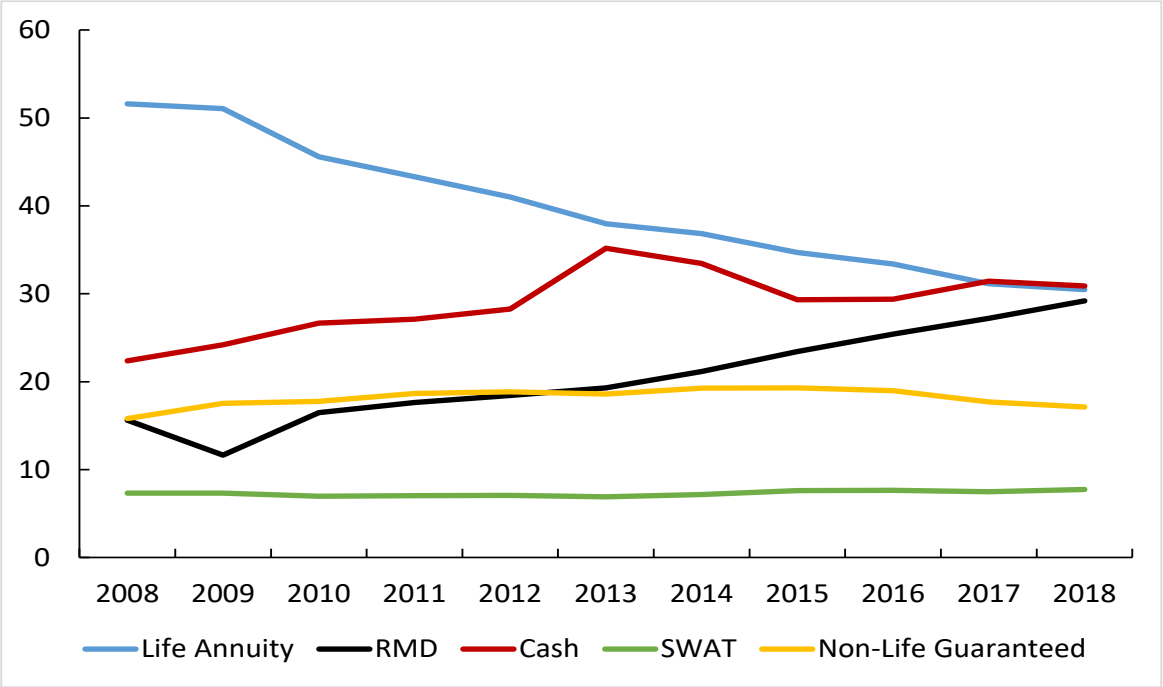
[4]This finding is consistent with Dushi and Webb's (2004) conclusion, based on simulation analysis, that many retirees might choose to annuitize only part of their wealth, and then to do so in several steps.

about half of the new retirees in our sample start taking income in the year they retire, so focusing only on participant choices at the time of retirement may provide an incomplete or even misleading perspective on retirement distribution behavior.

2. DATA ON INCOME CHOICES OF TIAA PARTICIPANTS

Figure 2.1 plots the share of all TIAA income beneficiaries in each year who receive various types of payouts. The share of these beneficiaries who receive annuity payouts declined from 52% in 2008 to 30.5% in 2018. Over the same period, the share drawing income from RMDs rose from 16% to 29%. The fraction of participants receiving non-life guaranteed income (annuity certain, TPA, and IPRO) or taking systematic withdrawals (SWATs) was relatively stable. The proportion taking lump-sum cash withdrawals rose from 22% in 2008 to 35% in 2013; it has declined since then. The figure shows that while the share of all income beneficiaries drawing income from a life annuity has declined, annuities were the most popular form of retirement income throughout our data sample. In 2018, the number of annuitants was roughly equal to the number drawing lump-sum cash payouts. The decline in the share of all income beneficiaries with an annuity suggests that the fraction of new income beneficiaries choosing annuities has declined over time. We present new beneficiary information below. It is important to remember that some of those in the data underlying Figure 2.1 retired several decades ago, and began their income draws then.

Figure 2.1: Percentage of TIAA Income Recipients Receiving Each Type of Distribution



Source: Authors' calculations.

Table 2.1 summarizes the evolution of the income beneficiary population at TIAA. The first column shows the number of participants in the TIAA system. Participants include those who are currently contributing, those who are no longer contributing but have positive account balances, and non-contributing beneficiaries (typically surviving spouses) who are receiving payouts, a group that is almost equally divided between men and women. The second and third columns show the number and percentage of participants drawing income. About one participant in five was drawing income in 2018; this share rises over the 11-year period as the participant population ages. The last column reports an estimate of the number of income beneficiaries who retired in each year since 2000. Comparing columns two and four underscores two things: the long length of payout periods, and the pattern in recent years for many participants never to draw income. In 2018, post-2000 retirees comprised only about

one-third of those receiving income, a result of both the large stock of pre-2000 retirees and the substantial number of post-2000 retirees who had not started to draw income by 2018.

Table 2.1: TIAA Participants and Income Beneficiaries, 2008-2018

Year	Total System Participants	Participants Drawing Income	Percentage of Participants Drawing Income	Estimated Post-2000 Retirees Drawing Income
2008	3,416,162	579,426	17.0%	121,952
2009	3,488,362	577,876	16.6%	127,190
2010	3,559,135	640,451	18.0%	154,819
2011	3,625,944	666,740	18.4%	172,951
2012	3,694,614	696,916	18.9%	191,348
2013	3,791,338	747,754	19.7%	214,072
2014	3,877,354	766,677	19.8%	234,445
2015	3,966,052	785,633	19.8%	251,898
2016	4,085,929	815,868	20.0%	268,663
2017	4,178,800	877,892	21.0%	289,594
2018	4,267,466	898,990	21.1%	308,515

Source: Authors' calculations.

The declining role of annuities evident in Figure 2.1 reflects a combination of changing institutional payout rules and changing participant behavior. To examine the latter, we focus on new retirees each year, who we define as those who are 59½ or older and who cease making contributions to the TIAA system. Participant records include limited demographic data, tenure in the TIAA system, contributions, asset allocations, income distributions, and plan contract information.[5] TIAA does not have data on actual retirement dates, either self-reported or administrative, and does not know about employment or pension contributions at employers that are not part of the TIAA system. Our focus is on who meet our criteria for "imputed" retirement: they are over the age of 59½ and contributed to TIAA in one year but not the next.

[5] We have data on two types of plan contracts: individual participant contracts and institutional plan sponsor contracts. Many participants have assets in more than one individual or institutional contract. We combine all contracts for each individual.

It is possible that some of these participants are in fact still working; if so, our estimate of the number of retirees is too high.

TIAA participants include a diverse population that works primarily in the nonprofit sector, including universities, nonprofit museums, hospitals, think tanks, and some K-12 schools. The employers range from very small nonprofit institutions to very large university employers. Relative to the broader employer population, the employers who select TIAA as their retirement plan provider are more likely to require plan participation than other employers in the broader population.

Table 2.2 presents summary information on the new retiree sample that is the basis for this study. The first column shows the number of TIAA participants in each year, and the second, the number of those participants who are over the age of 59 ½. These are both measures of participant stocks. In 2018, 1.56 million of the 4.27 million participants were at least 59 ½.

The third column reports the number of new retirees in each year. A participant is deemed to have retired if she is more than 59½ years old, stops making contributions to TIAA in a given year, and does not make any subsequent contributions. The final column reports the percentage of individuals who retired in each year who had received some income payouts from TIAA by the 2018 plan year. It is possible, but unusual, for a participant who turned 59½ after 2000 to have started receiving income prior to retirement. Only 0.8% of all retirees fall into this category.

The last column of Table 2.2 shows that nearly half of all post-2000 retirees had started an income draw by 2018. This percentage is rising in the number of years a person has been retired. It

increases from under 35% for 2018 retirees to more than 65% for those who retired in 2000. Importantly, the percentage of participants who ever take an income draw asymptotes to a level below 70%, a reminder that some TIAA participants never withdraw funds in a way that generates retirement income.

Table 2.2: Description of TIAA Participant and "New Retiree" Samples

Year	TIAA Participants	TIAA Participants Over Age 59½	New Retirees	Post 2000 retirees drawing first income by 2018
2000	N/A	N/A	18,939	65.9%
2001	2,556,180	620,315	18,448	66.9%
2002	2,716,458	683,776	19,343	65.5%
2003	2,845,174	727,889	20,258	65.8%
2004	2,995,069	798,695	22,825	64.4%
2005	3,115,512	844,498	25,862	63.8%
2006	3,219,011	912,422	26,654	61.6%
2007	3,333,011	974,129	29,873	61.4%
2008	3,416,162	1,028,922	35,222	60.1%
2009	3,488,362	1,087,183	31,432	57.7%
2010	3,559,135	1,146,608	35,148	56.2%
2011	3,625,944	1,201,148	38,748	55.4%
2012	3,694,614	1,245,288	38,818	52.6%
2013	3,791,338	1,302,131	43,416	50.0%
2014	3,877,354	1,356,176	47,708	47.5%
2015	3,966,052	1,399,279	51,040	43.4%
2016	4,085,929	1,458,897	50,581	40.5%
2017	4,178,800	1,513,669	51,591	40.8%
2018	4,267,466	1,564,261	54,451	33.9%
Unique Participants, 2000-2018	5,882,086	2,242,180	660,357	49.7%

Source: Authors' calculations.

The sample includes 660,357 participants who retired between 2000 and 2018. Because there are often a number of years between a participant's last contribution and first income

draw, the many of those who "retire" in a given year do not begin drawing income in that year. There are 327,996 participants in our sample who retired after 2000 and began drawing income before 2018. Those who retire during our sample, but are never observed drawing income, might never have reached an action-forcing constraint, such as attaining the age at which RMD payments must begin, or they might have taken one or more cash withdrawals from their account. We do not classify lump-sum cash distributions as income payouts because these are unlikely to reflect retirement consumption needs. Instead, some of these lump-sum payments represent individuals who may have rolled their account balance out of TIAA and to an IRA at another financial institution.[6] Additionally, some of those who retired died before beginning income draws. Analyzing the choices of the last two groups is beyond the scope of this paper.

The total TIAA participant population grew by an annual average rate of 3.1% during our sample period, while the number over 59½ grew at a 5.6% annual rate. This differential reflects the aging of the participant pool. The number of participants taking first income grew at a 9.9% annual rate, while the number retiring and taking first income grew at 10.3%.

The administrative data that forms the basis for this project has several strengths, but it also has several limitations. First, it contains very limited demographic information. There is reliable information on age and sex, but not on other demographic characteristics such as marital status and level of education. Second, the data are drawn from a single financial institution, so it is not possible to measure a participant's net worth or the value of retirement accounts held outside of TIAA. The lack of information on assets held at other financial

[6] Holden and Schrass (2021) discuss the reasons that many individuals choose to roll to an IRA rather than keeping money within an employer-sponsored plan.

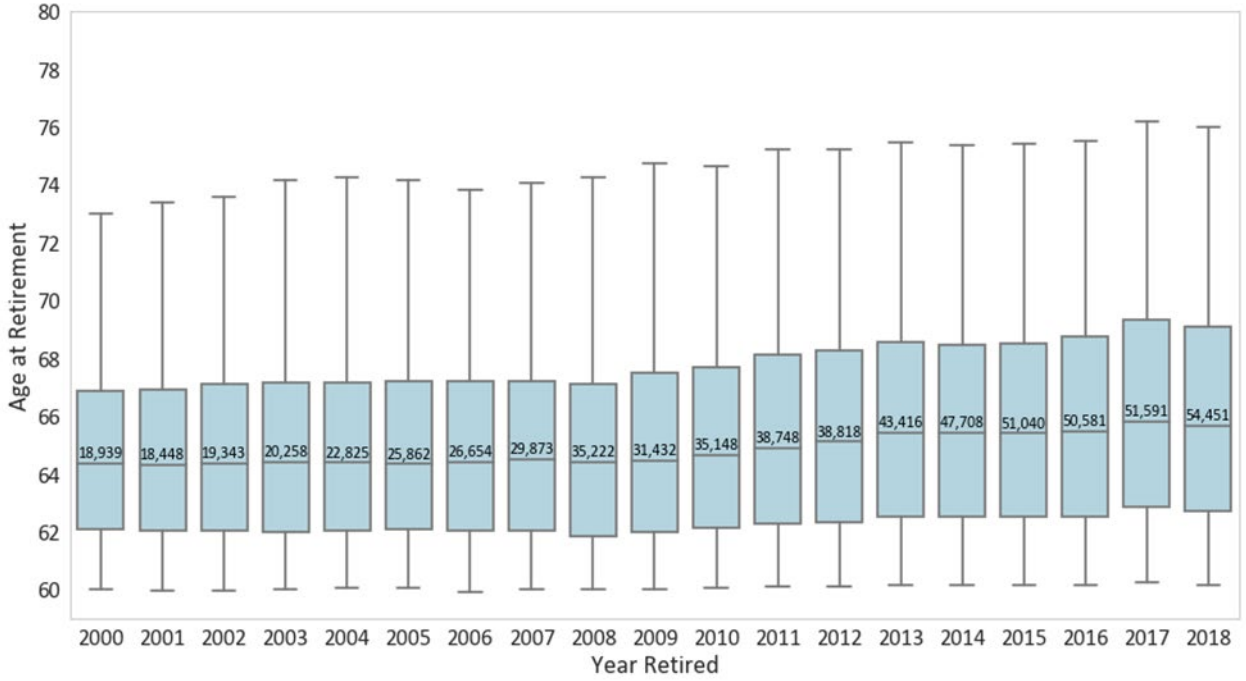
institutions raises challenges for measuring payout strategies: a participant might pursue one payout strategy with her TIAA accumulation and another with an accumulation at another firm. Finally, there is no information on the payout decisions of participants who withdraw their assets from the TIAA system and make retirement income decisions at another financial institution.

3. RISING RETIREMENT AGE OF TIAA PARTICIPANTS

Before studying the changing pattern of income draws, we consider the retirement behavior of TIAA participants who are at least 59½ years of age. Retirement is defined, as explained above, by the cessation of contributions to the participant's TIAA retirement account. While a substantial fraction, perhaps a third according to Ameriks et al. (2018), of the retirement-age population in the United States works at a "bridge job" after leaving a career job but before leaving the labor force, we believe this fraction to be lower at TIAA because the typical participant has higher career earnings than the population at large and tends to have more control over the retirement decision than employees in many other industries.

Figure 3.1 shows the distribution of estimated retirement ages for TIAA participants in each year between 2000 and 2018. The number of retirees rises from less than 19,000 in 2000 to more than 54,000 in 2018, reflecting both the age structure of the U.S. population – those in the baby boom cohort are retiring at the end of the sample – and the particular age

Figure 3.1: Distribution of "Retirement" Ages, by Year, for TIAA Participants



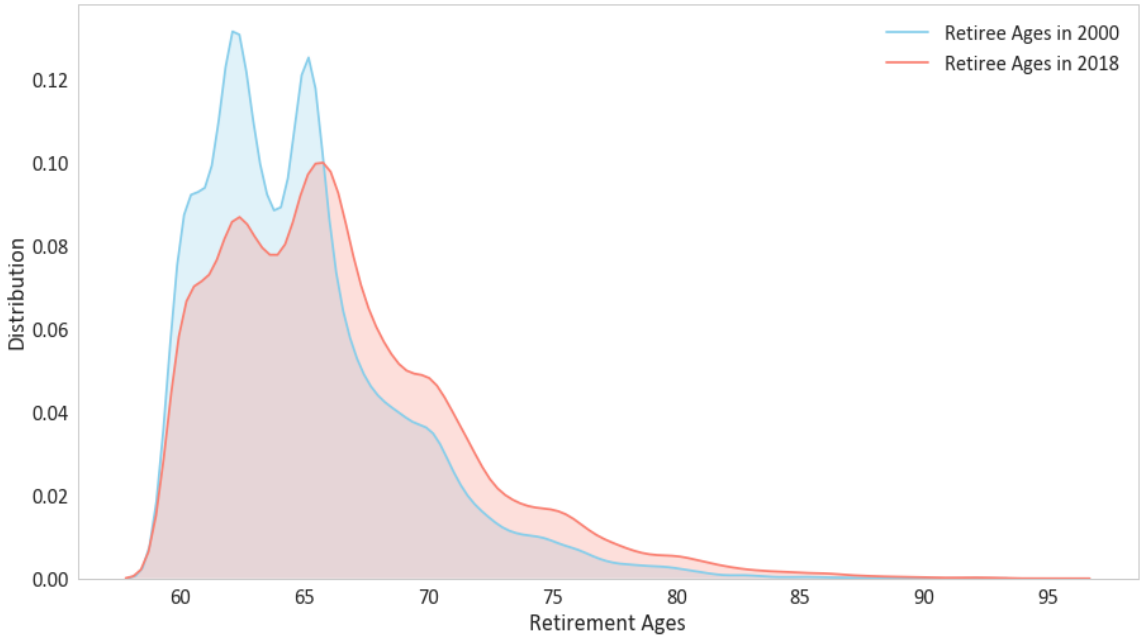
Source: Author calculations

composition of the industry that TIAA serves. The median age of retirement rises from 64.3 in 2000 to 65.6 in 2018. The box plots for each year show the median age, the 25th and 75th percentiles, and the 5th and 95th percentiles of the retirement age distribution. The share of the TIAA participant population that is working well into their 70s has increased over time. In 2000, 10% of retirees were above the age of 70.4; by 2018, the 10th percentile had risen to 73.1 years. The 5th percentile value increased in tandem, from 73.0 in 2000 to 76.0 in 2018. In 2018, 25% of the retirees were older than 69.1 years; the comparable age in 2000 was 66.8 years.

Figure 3.2 compares the age distribution of retirements in 2000 with that in 2018. In 2000, there were two local maxima in the retirement age distribution, at 62 and 65. By 2018, the distribution had shifted well to the right; the local maxima at age 62 was only about two-thirds the size of its corresponding 2000 value, and the local peak at age 65 had been replaced

by a smaller local peak at 66. This may reflect the shifting of the Social Security full retirement age from 65 to 66 over this period. The share of retirements taking place before age 66 declined between 2000 and 2018, while the share of retirements at ages above 66 increased.

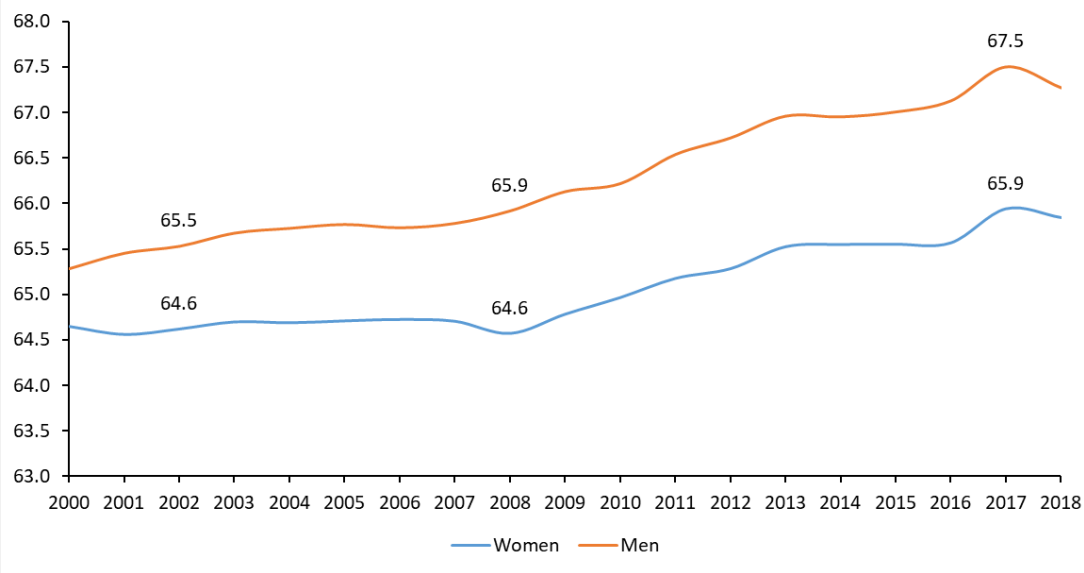
Figure 3.2: Distribution of "Retirement" Ages for TIAA Participants, 2000 and 2018



Source: Author calculations

Figure 3.3 plots the average retirement age by year for men and women. For women, it was roughly 64.5 years from 2000 until 2008. Over the next decade, it rose to about 66. For men, the increase is larger, from just over 65 in 2000 to over 67 in 2017 and 2018. These patterns resemble those for the broader U.S. population, although the estimated average retirement ages for TIAA participants are higher than economy-wide averages. Munnell (2017), for example, estimates average retirement ages of 62.3 for women and 64.6 for men in 2015 using Current Population Survey data.

Figure 3.3: Average Age of Estimated Retirement, by Gender, 2000-2018



Source: Authors' calculations

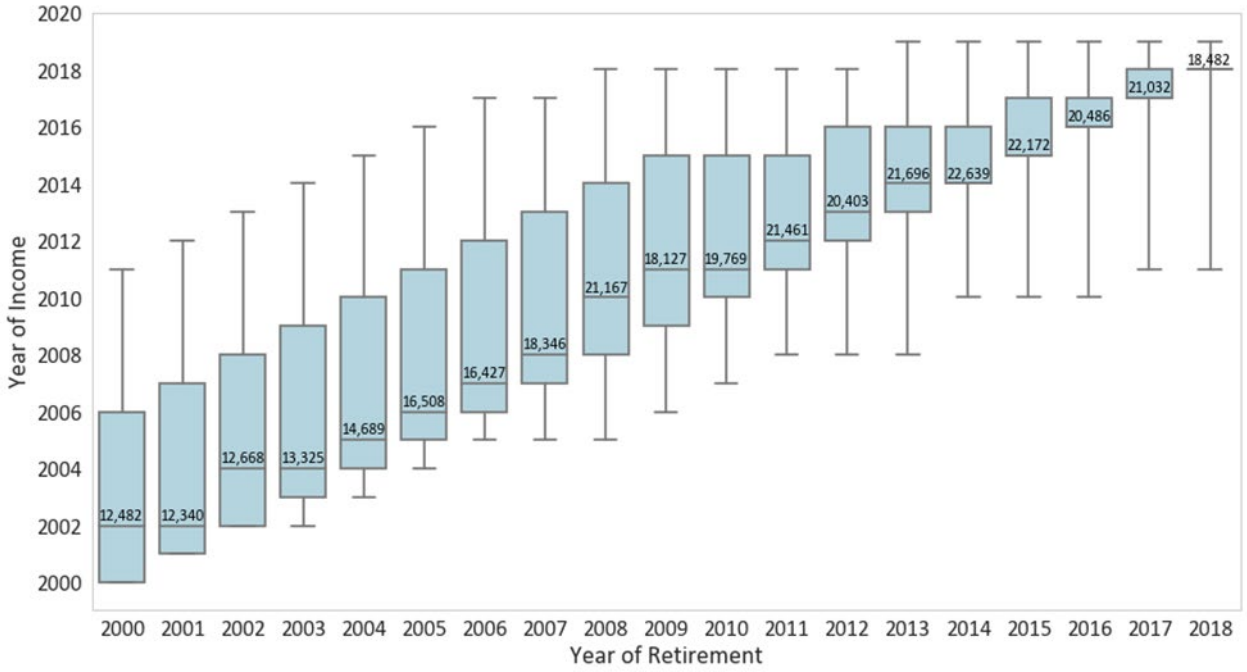
In 2000, a male TIAA participant who, as he aged, faced the age-specific retirement probabilities for men in that year had a 19.8% probability of working until at least age 70. The analogous probability in 2018 was 25.2%. In some intervening years, the probability was even higher. In 2010, for example, in the immediate aftermath of the Great Recession and during a period of reduce defined contribution balances, it was 30.3%.

4. TRENDS IN THE TIMING OF INCOME DRAWS BY TIAA RETIREES

The longitudinal nature of the TIAA data permit us to study the multi-period nature of the income draw decision. Figure 4.1 shows the distribution of dates at which income payouts began for all participants who retired between 2000 and 2018. The figure presents the median year in which income draws began, along with the 5^{th}, 25^{th}, 75^{th}, and 95^{th} percentiles. The median gap between a participant's last contribution, and that participant's first income draw, is between one and two years for all retirement cohorts. For those who retired around 2000, roughly three-quarters of each cohort initiates an income draw within six years of retirement.

Five percent of the 2000 retirement cohort waited at least 11 years before drawing any income from their TIAA account.

Figure 4.1: Distribution of First Income Draw by Retirement Year



Source: Authors' calculations

Just over 13% of retirees draw income prior to retirement. Pre-retirement income draws could be due to some individuals holding multiple retirement accounts, reflecting past employment at employers other than their current one. It would be possible to start distributions from other accounts while continuing to work at, and contribute to the retirement account at, the current employer. Roughly 28% begin income draws within the first six months after retirement, and by four years after retirement, about 43% have taken at least one income draw. A significant number of participants wait many years after retirement before drawing income. Some participants who we classify as retired and who are not drawing income are older than 70½, the age at which RMDs must begin and at which one might have expected to

see distributions. The absence of such distributions could be due to a number of factors. One is that the distribution requirements do not require withdrawals from each of an individual's 403(b) accounts, but rather specify a total amount that must be withdrawn from all accounts. Participants who have multiple 403(b) accounts at multiple providers could be meeting their RMD requirements by taking distributions from a source other than TIAA. Another possibility is that these participants have stopped making contributions to their 403(b) plans, but are still employed at the sponsoring institution. Ongoing employment delays the effective RMD date.

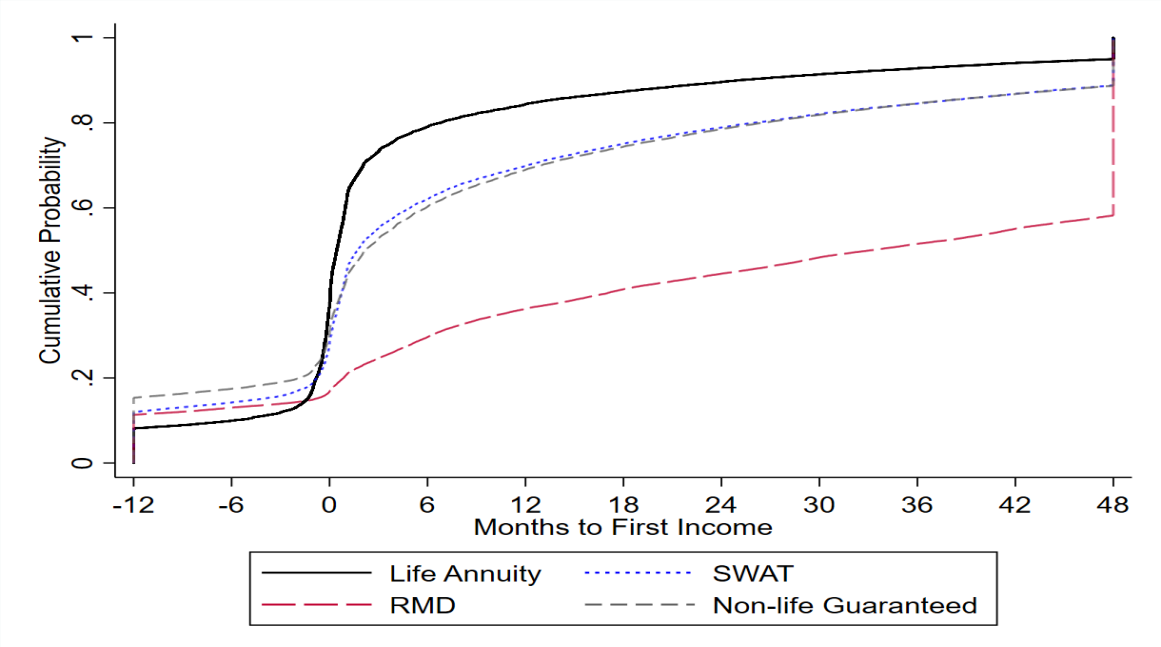
The gap between retirement and the start of income distributions differs between participants who draw income in different ways and who retire at different ages. Figure 4.2 shows the cumulative distribution, for those who take a plan distribution during our sample, of the months between retirement and distribution for those who select life annuities, RMDs, SWATs, and other non-life guaranteed payouts. For those who select life annuities, more than 80 percent of participants begin income draws within six months of retirement. For those who we observe drawing income with an RMD, even after four years, the probability of having started an income draw is less than 50 percent. SWAT and non-life guaranteed payout recipients are closer to life annuitants, but slower to begin drawing income after retirement.

Banerjee (2013) reports that withdrawal behavior from IRAs is quite different for those age 70 and under relative to those age 70 and above. Inspired by this finding, Figure 4.3 divides our sample into those who retired before and after age 70. In our sample, 14.2% of all retirees left the labor market after age 70 ½. Another 8.7% retired between the ages of 68 ½ and 70 ½, within two years of the RMD requirement. The age pattern of retirements is very different, however, at the start and end of the sample. In 2000, 9.8% retired after 70 ½, and 7.7% more

within two years of reaching that age. In 2018, however, 17.9% retired after age 70 ½, and 9.9% in the prior two years. The shift in the age distribution of retirees is a key factor explaining the observed change in retirement income draws.

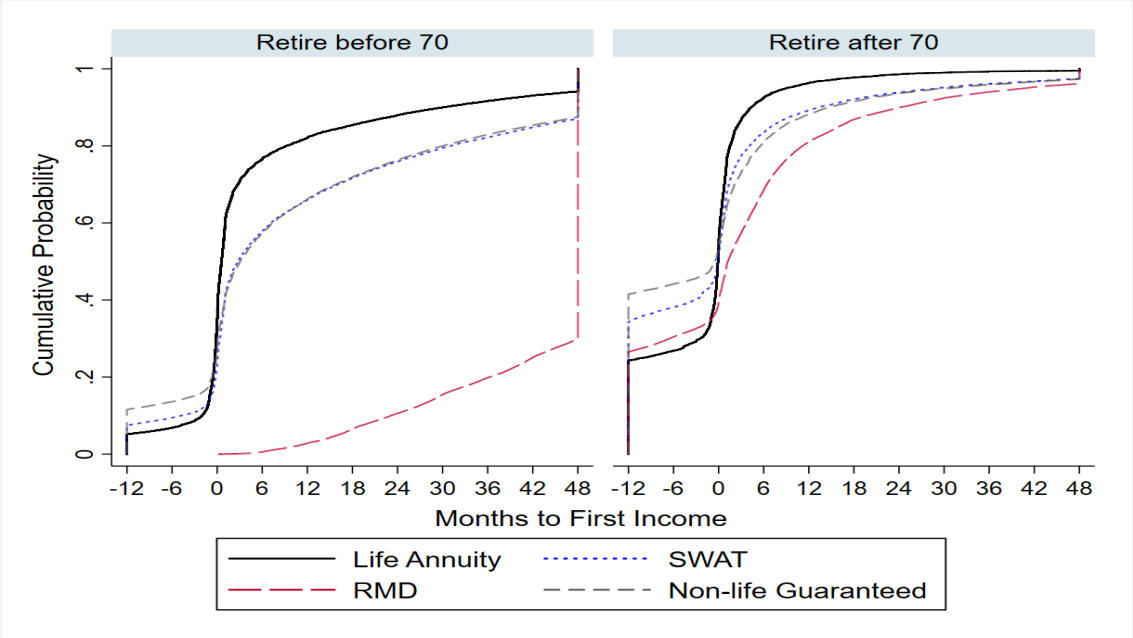
There are two notable differences between the two groups of retirees. First, those who retire at older ages are more likely to have drawn income prior to retirement. More than 40 percent of the post-70 retiree group drew some income prior to retirement, and more than a quarter drew income more than a year before their 403(b) contributions ceased. Second, the gap between retirement and the onset of distributions for those who draw income through RMDs is much shorter for the over-70 than for the under-70 retirees. This is largely mechanical, reflecting the smaller window of time between retirement and the age at which RMDs must start for the latter group.

Figure 4.2: Cumulative Percentage of Retirees Taking First Income Draw, by Income Type and Years Since Retirement, 2000-2016



Source: Authors' calculations

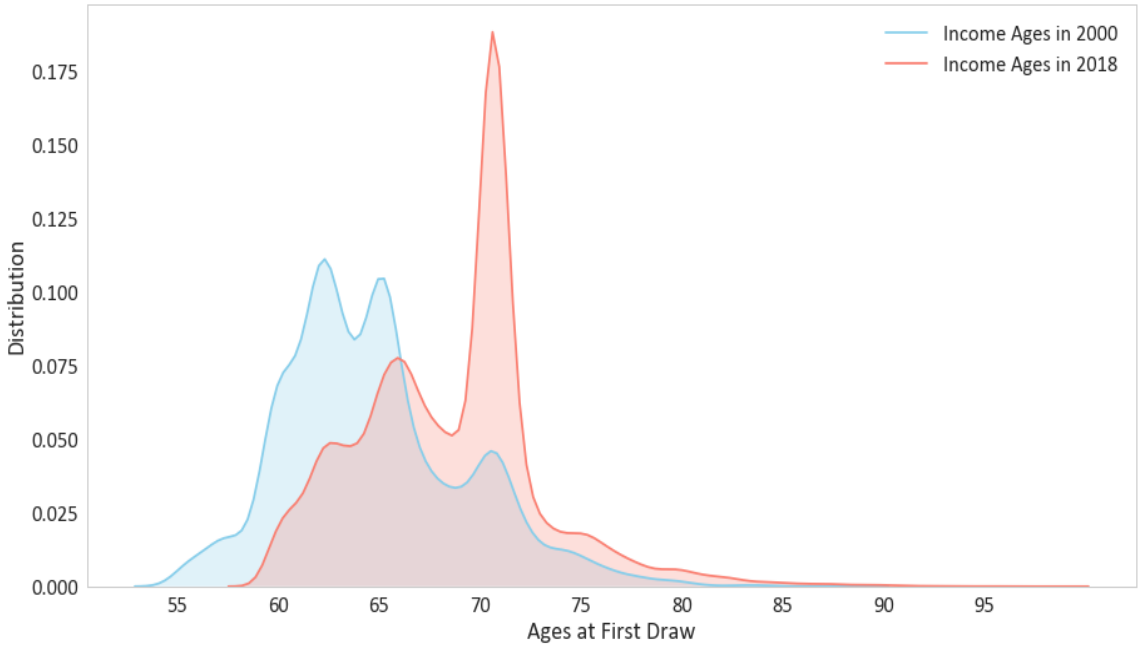
Figure 4.3: Cumulative Percentage of Retirees Taking First Income Draw, by Age at Retirement and Years Since Retirement, 2000-2016



Source: Authors' calculations

Figure 4.4 reports the distribution of ages at which participants began to draw income in both 2000 and 2018. In 2000, there were two peaks in the distribution, at ages 62 and 65 – the early and normal retirement ages for Social Security, respectively. The distribution in 2018 was single-peaked, with nearly one-quarter of those who initiated an income draw doing so at age 71. The share of participants beginning distributions before age 65 fell from 47.8% in 2000 to 13.3% in 2018, while the share who were above 70 rose from 18.7% to 61.2%.

Figure 4.4: Distribution of First Income Ages in 2000 and 2018



Source: Author calculations

Most of the growth in income initiation since 2000 has been among those over 70. The number of under-70 new income recipients grew by a factor of 2.25 between 2000 and 2018, while the number of over-70 new recipients rose more than 15 fold.

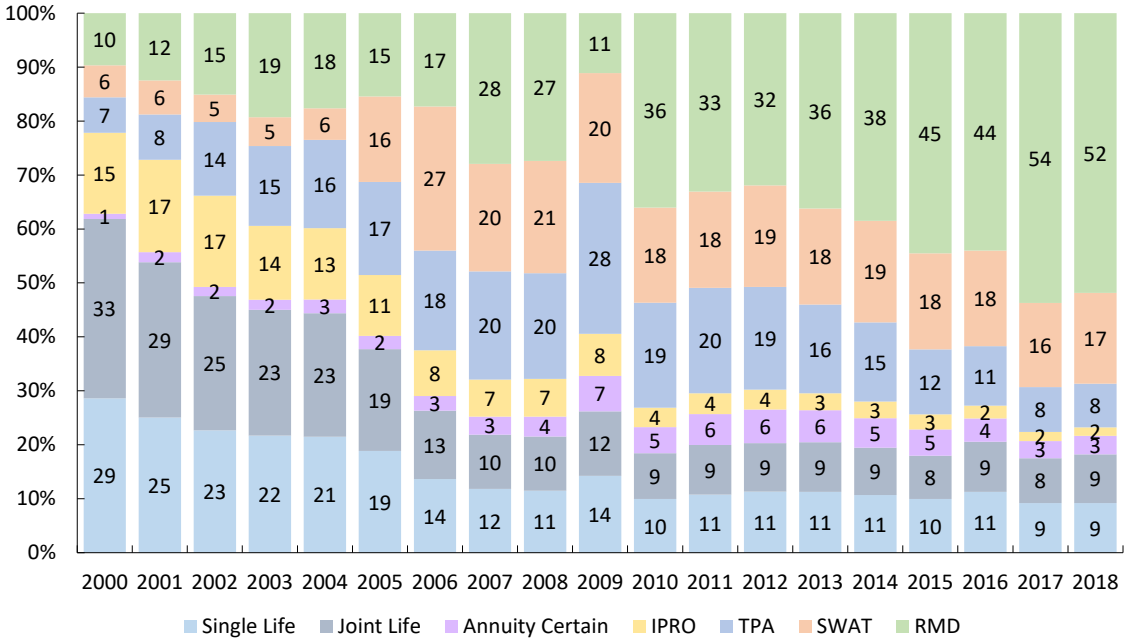
5. THE CHOICE AMONG INITIAL INCOME OPTIONS BY TIAA PARTICIPANTS

We now consider trends in initial retirement income choice, especially between life annuities and other forms of income. Figure 5.1 summarizes the form in which retirees have chosen to take their first income draws over the sample period. It includes all participants who retired at an age of 59½ or older between 2000 and 2018, and all those who began income draws at an age of 55 or older.[7] The figure shows that in 2000, just over a decade after the end

[7]About 0.8% of our sample, 2,615 individuals, began income draws between the ages of 55 and 59½–before they "retired."

of required annuitization, a majority of participants (52%) still took a first income draw in the form of a single- or joint-life annuity. By 2018, only 18% did.

Figure 5.1: First Income Distribution, by Type, 2000-2018



Source: Authors' calculations

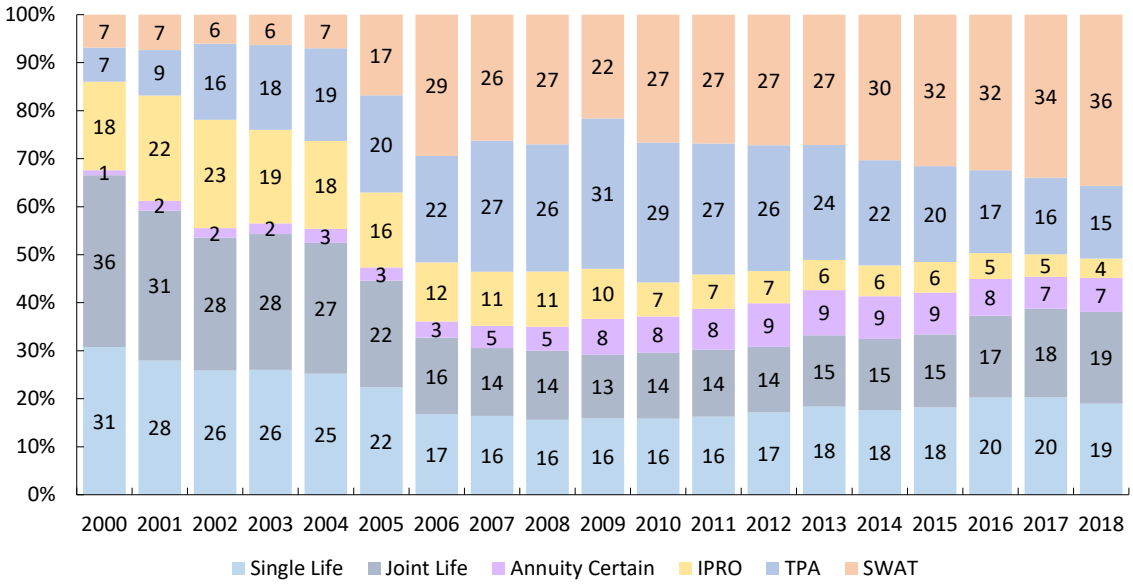
As the proportion of retirees opting to start life annuities has declined, the utilization of RMDs has become more common. The RMD option was the initial choice of 10% of those who began distributions in 2000, but of 28% by 2007 and an even higher share after the Great Recession. Since simplification of the RMD sign-up process in 2012, the use of RMDs has continued to grow, reaching 54% in 2017 and 52% in 2018. Minimum distribution options are now the most common way for TIAA retirees to begin withdrawing assets. Other payout options are used less often but have shifted in relative importance. Use of non-life guaranteed options (IPRO, TPA, and annuity certain options) peaked in the mid-2000s at around 30% but has declined since the Great Recession to about 13% in 2018. Similarly, the proportion of

retirees taking first income as a systematic withdrawal (SWAT) peaked at 27% in 2006 and has declined to around 17% in 2018. The growing use of RMDs as an initial income choice has coincided with a decline in the use of all other forms of initial retirement income choice.

Calendar year 2009 stands out as anomalous in Figure 5.1. During the global financial crisis, the RMD requirements were suspended. Participants who reached the age at which such distributions usually begin could postpone them. Brown, Poterba and Richardson (2017) and Mortenson, Schramm and Whitten (2019) find that about one-third of households took advantage of the opportunity to delay RMDs. The distribution holiday resulted in a decline in the number of new RMD income draws.

A participant of a given age has access to some, but not all, distribution options. Those below 70½, for example, may not use the RMD payout option, and those over the age of 70 may not elect an IPRO. To account for these age constraints, we divide our retiree sample into those who are not yet 70, and those who are 70 and older. Figure 5.2 shows the selection of payout options by those who make their first income draw before they are subject to RMD requirements. Two-thirds of this group chose a life annuity as a first draw in 2000. The fraction of those making first income draws choosing a single-life annuity declines from 31% to 19% between 2000 and 2018, and the percentage choosing joint-life annuities drops from 36% to 19%. Most of the decline for both annuity options takes place before 2007, and coincides with rising utilization of non-life guaranteed income in the form of TPAs and IPROs. Since 2010, take-up of non-life guaranteed income options declined modestly and was offset by the rise in the use of life annuities and systematic withdrawals.

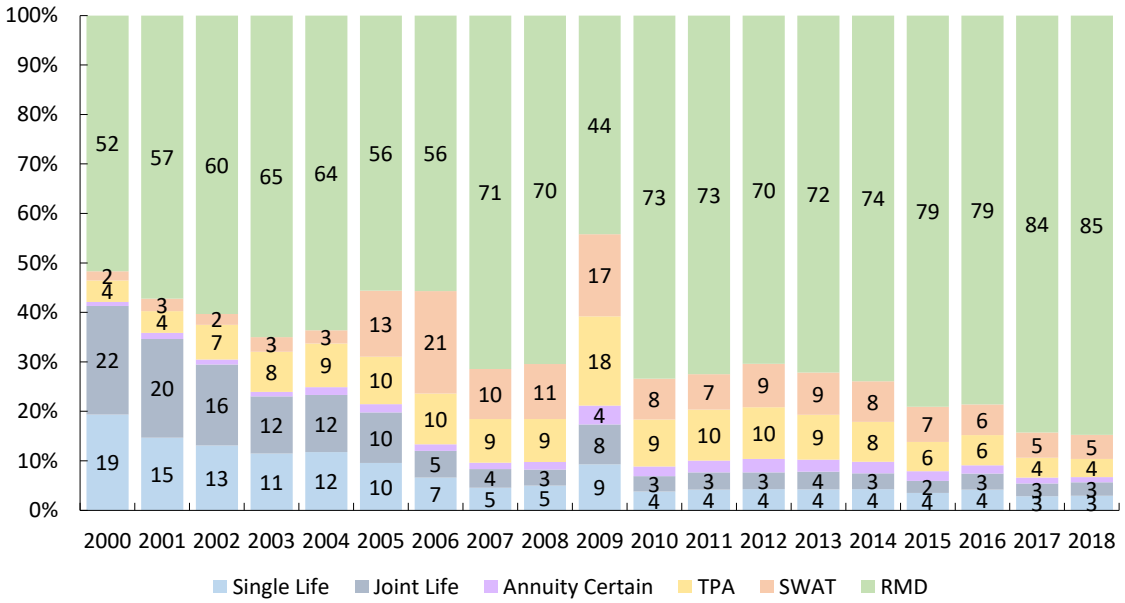
Figure 5.2: First Income Distribution, by Type, for Retirees under Age 70



Source: Authors' calculations

Figure 5.3 summarizes trends in first income draws by retirees age 70 or older. For this group, which is subject to the RMD rules, annuitization falls from 41% in 2000 to only 5% in 2018. The use of RMDs grows from 52% to 85%. As for younger retirees taking income draws, the utilization of SWATs and non-life guaranteed income options peaks in the mid-2000s and then declines. The data show that a participant who does not take a first income draw before age 71 has a nearly 90% chance of taking an RMD as an initial income draw.

Figure 5.3: First Income Distribution, by Type, Retirees Age 70 or Older

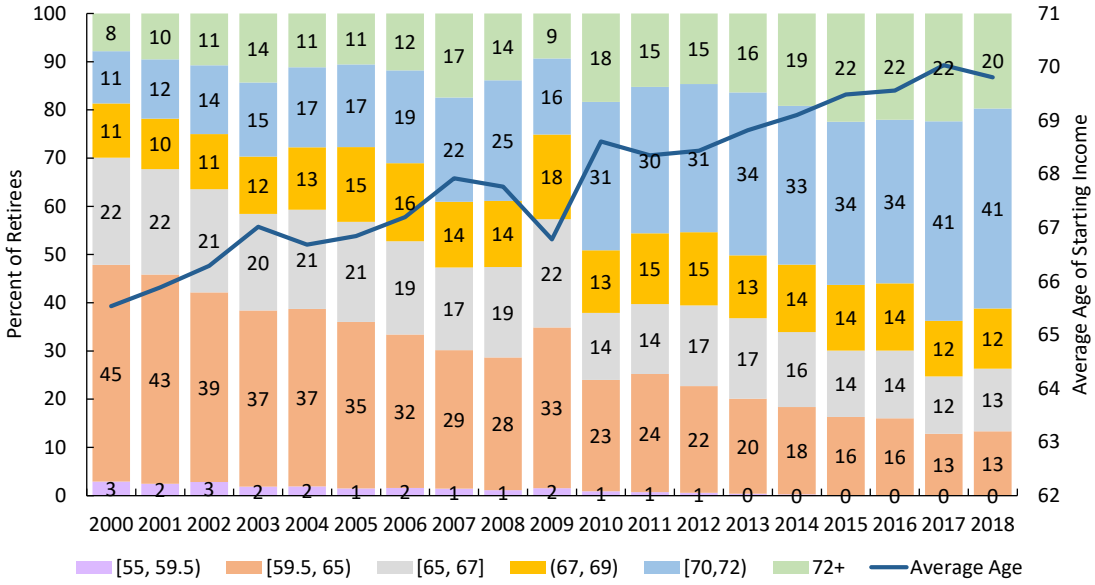


Source: Authors' calculations

The shifting pattern of first income selections for the population of new TIAA retirees is partly due to shifts in the distribution of ages at which these draws occur, combined with persistent age-related differences in the nature of first income draws. Figure 5.4 illustrates this by showing the distribution of ages at which participants drew first income in each year of our sample. The data in the figure are related to information in King (1996) and Ameriks (2002), but those studies did not highlight the evolution from life annuities to other forms of first retirement income draws that began in the early 1990s. The blue line in Figure 5.4, with the legend on the right margin, plots retirees' average age at first income draw. This rises from 65.5 to 69.8 between 2000 and 2018. The bar charts in Figure 5.4 show that the proportion of retirees taking their first income after age 70 rose from 19% to 61%. The data in the two previous figures suggest that in 2018, the probability of choosing an annuity as first income draw is 38% for a participant who claims income before age 70, compared with 6% for those

who start drawing income after age 70. A 10 percentage point increase in the share of participants claiming after age 70, holding these age-specific annuitization probabilities constant, would therefore translate into a three percentage point drop in the share of new claimants selecting an annuity.

Figure 5.4: Distribution of Ages at First Income Draw, TIAA Participants, 2000-2018

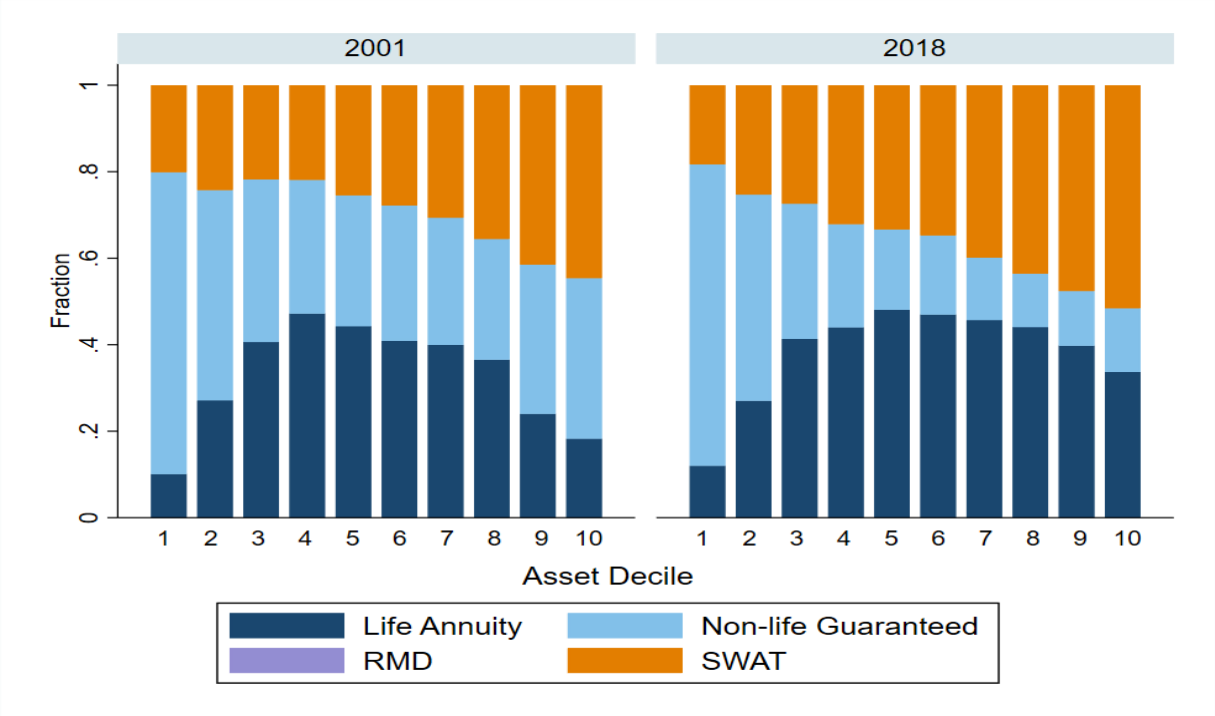


Source: Authors' calculations

The strong performance of equity markets over our sample period probably led some TIAA participants to reach retirement age with a larger-than-expected balance in their defined contribution account. This could have affected distribution choices, for example if those with larger balances are less inclined to choose life annuities. Figures 5.5 and 5.6 present information from 2001 and 2018 on the choice of first income draw for participants grouped into deciles with regard to their account balances. For retirees who have not yet reached age 70, the data show higher rates of life annuitization in the middle of the participant balance distribution throughout the sample period. In 2001, for example, more than 35% of the first

income draws for those in the third through eighth account balance deciles were life annuities. Even in the two highest deciles by participant balance, nearly 20% of retirees in 2001, and nearly 40% in 2018, selected a life annuity as their first income draw. At the other end of the account balance distribution, participants with small balances were relatively unlikely to receive income from life annuities, and tended to choose guaranteed payouts with no life contingency. This may reflect the small income stream that would be associated with choosing an annuity.

Figure 5.5: Type of First Income Distribution for Retirees Younger than Age 70, by Participant Account Balance Decile

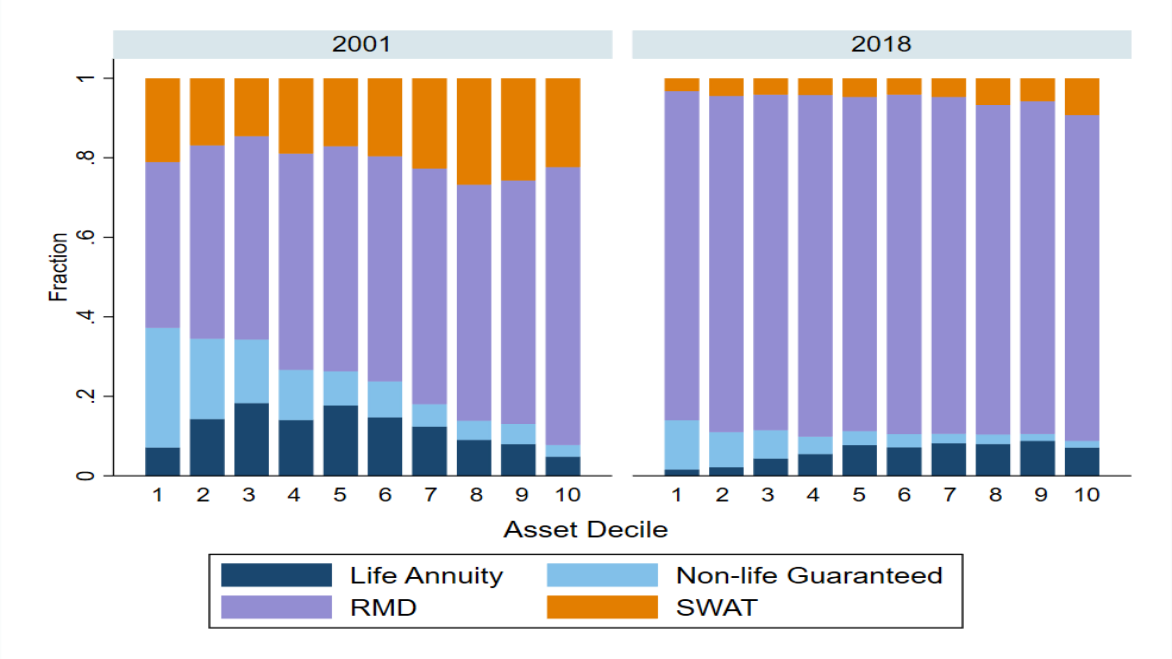


Source: Author calculations

Unlike retirees who are younger than 70, who show some variation in type of first income by account size, RMDs are the overwhelming type of first income across the account size distribution for those who retire after age 70. Figure 5.6 illustrates this. The figure shows that in 2018, over three quarters of the retirees in this age group in all deciles of the account balance distribution chose an RMD as their first income draw. In 2001, RMDs were less

prevalent than in 2018, and between 10 and 20 percent of retirees in all deciles chose systematic withdrawals and transfers (SWATs). Nearly 20% of those in the middle of the participant balance distribution chose life annuities, and non-life guaranteed products were used by about one quarter of the retirees in the lowest account balance deciles. This variation across deciles, along with the share of participants receiving income in any form other than an RMD, declined substantially between 2001 and 2018.

Figure 5.6: Type of First Income Distribution for Retirees Aged 70 and Older, by Participant Account Balance Decile



Source: Author calculations

6. MULTIPLE PAYOUT CHOICES AND TOTAL SYSTEM INCOME DISTRIBUTIONS

The foregoing analysis focused on retirees' first income choices. Nearly one-quarter of participants, however, draw multiple forms of income over the course of their retirement years. For example, a participant might choose a "partial annuitization" strategy by purchasing a life annuity with half of his or her retirement assets and take RMDs from the remaining balance. To

gain insights into utilization of multiple payout streams in retirement, we examine the composition of retiree income sources in 2012 and 2018. This analysis, similar to the summary information in Figure 1.1, considers all income-receiving TIAA retirees in a given year rather than those of the flow of first-time recipients in that year. We consider lump-sum cash distributions as well as the various income distributions described earlier because many retirees use such lump sums to supplement their retirement income. It aggregates those who took first income draws in many different years.

In showing the share of retirees who receive various combinations of income draws, we focus our analysis on retirees who have one or two payout choices. Table 6.1 shows the number of retirees taking one or two different payouts in 2012 and 2018, respectively. In 2012, 191,348 retirees received income or took a cash distribution, of whom 96.68% (184,991) took one or two payout options. Comparable figures for 2018 show the significant growth of the retiree population, with 308,515 taking a payout and 96.16% (296,681) having two or fewer distribution sources. The main diagonals measure retirees who received only a single type of payout, and the off-diagonal cells measure combinations of two types of payouts. For both years, we highlight in bold the top three single payout choices, and in italics the top three combinations of distributions.

Table 6.1: Number of Retirees Taking One or Two Income Types, 2012 and 2018

	Life Annuity	Life Annuity Guaranteed	Non-Life Guaranteed	RMD	SWAT	Cash
2012						
Life Annuity	10,022					
Life Annuity Guaranteed	743	**33,589**				
Non-Life Guaranteed	453	1,331	26,804			
RMD	1,153	***4,478***	1,697	**34,606**		
SWAT	374	1,569	4,349	1,829	12,014	
Cash	771	2,816	***4,572***	***4,554***	4,396	**31,865**
2018						
Life Annuity	14,217					
Life Annuity Guaranteed	743	**50,486**				
Non-Life Guaranteed	404	1,600	**34,679**			
RMD	2,589	***9,800***	4,051	**90,562**		
SWAT	488	2,331	3,506	5,260	17,721	
Cash	870	3,579	4,228	***10,500***	***6,297***	31,497

Note 1: 191,348 Retirees Receiving Income in 2012 // 184,991 Receiving One or Two Options (96.68%)
Note 2: 308,515 Retirees Receiving Income in 2018 // 296,681 Receiving One or Two Options (96.16%)
Source: Author calculations

There are a number of similarities in payout behavior in 2012 and 2018. In both years, about 78% of retirees received only one income option. An RMD and a life annuity with a guarantee period were the most popular and next-most-popular choices. For those taking multiple draws, the combination of an RMD with a life annuity (either with or without a guaranteed period) was most frequent. In both years, the top three payout choices were an RMD, a life annuity with a guarantee period, and cash. In 2012 (2018), about 26.1% (41.4%) of retirees taking a distribution took an RMD, 24.1% (23.1%) received payouts from a life annuity with a guarantee period, and 26.5% (19.2%) received a cash distribution.

Table 6.1 shows that lump-sum cash distributions are common, but that their use declined between 2012 and 2018. In 2012, about 35% of retirees taking cash draws also received income payouts. This proportion increased to 45% in 2018. In both years, a common combination is an RMD and a cash payout–essentially a way of increasing the rate of payout

beyond what the RMD rules specify. Another common pairing is an RMD and a life annuity. In 2012, about 13.4% of those who took an RMD also received a payout from a life annuity; in 2018, the comparable value was 10.1%.

Table 6.1 also shows the relative popularity of different types of annuity-based income. In both 2012 and 2018, there were significantly more participants drawing life annuities with guarantee periods (24.1% and 23.1% in 2012 and 2018, respectively) than life annuities without guarantees (7.3% and 6.5% in 2012 and 2018, respectively). In 2012, the proportion of retirees receiving distributions taking RMDs was about 26%, while 31% were taking some form of life annuity. By 2018, 41% of retirees were receiving an RMD, and 29% were receiving a life annuity. Similarly, the proportion of retirees taking cash payouts, systematic withdrawals, or non-life guaranteed income all declined relative to the RMD population.

7. CONCLUSION

This paper documents trends over the last two decades in TIAA participant retirement and retirement income choices. Because this is a mature DC retirement system, the choices made by its participants may provide important insights on the behavior of broader populations as the U.S. defined contribution system becomes the centerpiece of retirement wealth for most workers. Banks, Crawford, and Tetlow (2015) make a similar argument in their study of annuity demand in the U.K. defined contribution system.

Among TIAA participants, between 2000 and 2018, the average retirement age rose by approximately 1.3 years for women and 2 years for men. There is considerable variation in the length of time between retirement age and the start of an initial income draw from a participant's retirement account; only 40% of participants take a first income draw within 48

months of stopping plan contributions. The combination of longer working lives and delayed retirement income starts means that a growing fraction of TIAA participants do not take a first income draw until they are subject to required minimum distribution (RMD) rules. The fraction of retirees taking no income until the RMD age of 70.5 rose from 10% in 2000 to 52% in 2018. Concurrently, the fraction of first-time retirement income claimants who selected a life-contingent annuitized payout stream declined from 61% to 18%. Among those who made an initial income selection before age 70, annuitization rates were significantly higher than among those who began income draws at an older age.

The sharp decline in the share of new income beneficiaries choosing a life annuity is gradually reducing the percentage of all TIAA beneficiaries with life annuities. It declined from 52% to 31% between 2008 and 2018. Despite the decline in new annuitants, in 2018 a life annuity was still the most common form of retirement income distribution for the TIAA beneficiary population. It was slightly more popular than an RMD, but on track to fall below RMD very soon.

The rising share of first income draws that now begin after age 70 indicate that the RMD is becoming the *de facto* default option for withdrawals by TIAA participants. This suggest that the effect of RMD rules on participant draw-down behavior, and potentially on their consumption spending – as studied by Horneff, Maurer, and Mitchell (2021) – warrants further analysis.

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