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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 and retirement income choices by TIAA participants. From 2000-2018, the distribution of retirement ages shifted to older ages. The average retirement age rose by approximately 1.3 years for women and 2 years for men. There is considerable variation in the elapsed time between retirement and the start of income draws from a participant's retirement plan account, with only 40% of participants taking an initial income payment within 48 months of retirement. The combination of later working lives and delayed first retirement income led to a growing fraction of TIAA participants reaching the Required Minimum Distribution (RMD) age before taking any initial income draws. From 2000 to 2018, the fraction of retirees taking no income until their RMD rose from 10% to 52%. 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. About one-fifth of retirees received more than one type of income; the most common pairing was an RMD and a life annuity. Among all participants receiving retirement distributions, the proportion who had a life annuity as part of their payout strategy fell from 52% to 31% between 2008 and 2018, although a life annuity remained the most common form of retirement income distribution. By comparison, the proportion taking an RMD payment roughly doubled, from 16% to 29%. We find evidence that an 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, when participants must decide how to convert DC account assets into income and how best to insure themselves against longevity and late-life medical expenditure risk. The demand for life-contingent annuities attracts special attention because of the central role of these products in many models of optimal retiree behavior. Despite the strong arguments for buying guaranteed income streams to insure against retirement related risks, the market for life annuities in the United States, both inside and outside DC plans, is small. LIMRA (2019) reported about $234 billion in total annuity sales in 2018, but only about $9.7 billion in immediate annuity sales. The small size of this market, in contrast to its central role in many discussions of retirement security, motivates the study of retirement income choices.

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) regulations. While different plans offer different withdrawal options, most DC plans in the for-profit sector do not offer a life-annuity option. Vanguard (2020), for example, reported that only 13% of the DC plans it administered, covering 14% of plan participants, provided participants with an annuity option at retirement. The lack of direct plan access to guaranteed income requires retirees to withdraw funds and purchase an annuity in the retail market, and makes it difficult to compare annuity demand with other types of retirement income strategies.

Unlike the 401(k) saving programs offered by most for-profit employers, the TIAA system, which was launched a century ago and serves the employees of colleges, universities, and other not-for-profit entities, provides all participants with a set of distribution options that includes life annuities. Prior to 1989, most retirees in this system were required to purchase a life annuity. Since then, participants have had the ability to take lump-sum distributions, systematic withdrawals, non-life guaranteed income, or RMD options, and their choices have become more informative about participant preferences regarding retirement income.

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 of single- versus 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 this earlier 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 this unique administrative dataset, we analyze trends in retirement ages, first income distribution choices, and total income distributions. We do not have direct observations on labor market activity, but we impute "retirement" to any participant over the age of 59½ who stops contributing to the TIAA system.[1] Between 2000 and 2018, our estimate of the number of new retirees rises from 19,000 to more than 54,000. The growth in retirements coincides with a shift of the distribution of retirement ages to older ages. This pattern was particularly evident in the last decade of the sample, when 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 the fraction of TIAA participants who selected an annuity when they began drawing down their account declined from 61% to 18% between 2000 and 2018. Over the same period, there was a marked increase–from 10% to 52%–in the fraction of retirees whose first income draw was an RMD. The proportion of retirees choosing systematic withdrawals as first income also increased, rising from 6% to 18%, while the fraction choosing initial income in the form of non-life guaranteed income fluctuated between 20–30% 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 as first income fell from 41% to about 6% over the same period.

We also consider total system income distributions because many participants receive more than one type of payout from their account. In 2018, for example, approximately 22% of those receiving income payouts had more than one type of distribution. About 31% of participants taking income that year had a life annuity as part of their retirement income distribution, with nearly half of those annuitants also taking an RMD. Even with the decline in annuitization as a first income choice, life annuities remained the most common type of payout among TIAA participants receiving distributions.

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 underlies the analysis, explains how the sample is constructed, and analyzes the stock of total distribution choices by participants over the 2008–2018 period. Section three summarizes the age-specific rates of "retirement" for TIAA participants. Section four summarizes the elapsed time between retirement and the start of income draws. Section five tracks the changing mix over time in initial income choices among retirees, while section six reports on the prevalence of multiple types of income draws and total system income selections. The final section provides a brief conclusion.

1. How can participants withdraw assets from TIAA?

The payout choices of TIAA participants have evolved over time, in part in response to changes in the distribution menu. King (1996) and Ameriks (2002) studied these participants' distribution choices, and in particular their use of life annuities. Our research extends some of the time series evidence from those papers and provides information and context for other factors that may be influencing participants' choices for retirement income.

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). It is the only income option that provides

[1] As noted in Ameriks (2002), we do not have information on how many individuals in this "retiree" group may have changed pension providers or simply changed jobs. It seems reasonable that career changes at these ages are infrequent.

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).

Since 1989, the distribution choice menu has broadened, allowing additional choices that provide either alternative forms of guaranteed non-life annuity options or non-guaranteed income.[2] 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 be subject to tax penalties for distributions taken before age 59½.

A **transfer payout annuity** (TPA) is a sequence of payments from TIAA Traditional assets, 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. In our analysis, we exclude TPAs that represent asset transfers, and include only TPAs that involve an income payout, meaning that they are reported as taxable income on an IRS Form 1099.

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 and must later be annuitized or converted into required minimum distributions. A participant is eligible to begin an IPRO up until 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).[3] The RMD provides retirees over the age of 70½, or 72 beginning in 2020, 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 to provide income in retirement. RMDs are the only mandatory income distribution that participants must receive.

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 accumulated assets 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 payments at any age, but may be subject to early withdrawal penalties. Similar to TPAs, we only include SWAT payments taken as income.

[2] 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. The timetable for the menu of options available to participants is likely to be accurate for most of those in the TIAA system, but for some, the changes may have been delayed for some period.

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

Finally, **cash payouts**, taken as lump-sum distributions, have been available to participants since 1991. We consider and analyze cash payouts that represent taxable distributions but not asset transfers that are rollovers to other asset managers. We distinguish between the two using information on the distribution's tax status.[4] Participants may take a cash distribution at any time but may be subject to early distribution tax penalties.

Table 1.1. Features of income distribution options

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

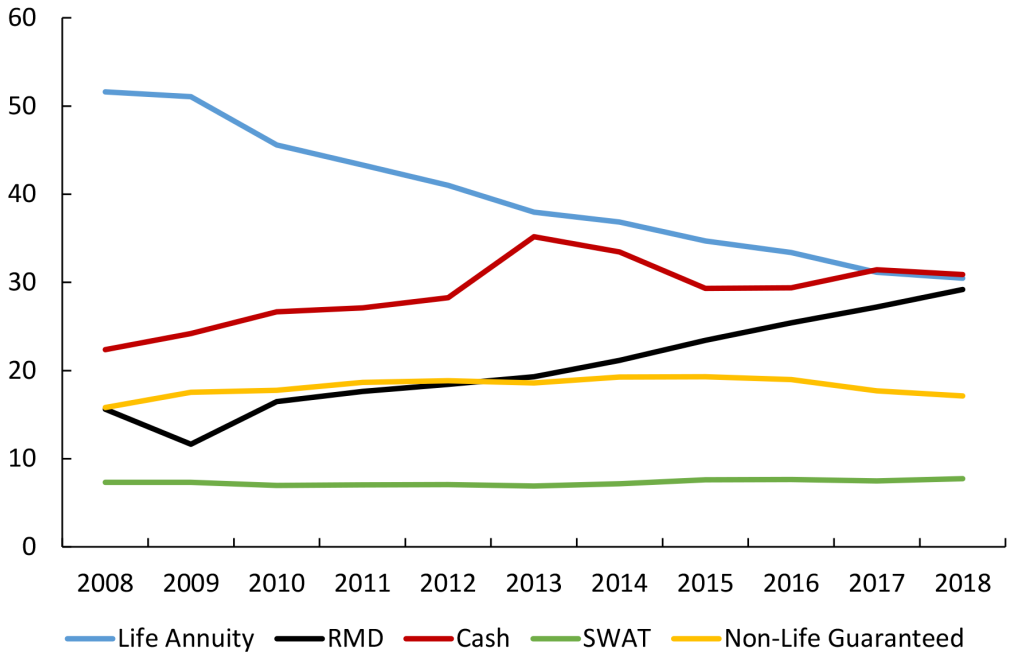
Table 1.1 summarizes the features of the various retirement income distribution options. Each year, a participant who has not previously annuitized his or her balance at TIAA can choose to annuitize, to elect a non-annuity exhaustive payout plan, or to take only whatever distribution is required–possibly 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. Studying the behavior of participants only in the year when they reach retirement can provide a misleading perspective on the initial retirement distribution behavior of DC plan participants. In our data, only about half of new retirees start taking income in the year they retire.

2. Data on income choices of TIAA participants

This project is in part motivated by the declining share of TIAA beneficiaries who receive annuity payouts as part of their retirement income strategies. Figure 2.1 shows that between 2008 and 2018, the share of TIAA beneficiaries receiving life annuity income declined from 52% to 30.5%. Over the same period, the share taking 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 throughout this period. The proportion of participants taking lump-sum cash withdrawals rose from 22% in 2008 to 35% in 2013; it has declined since then. While the share of participants taking a life annuity has significantly declined, it remains the most popular form of retirement income, and is roughly equal with lump-sum cash payouts as the common form of retirement distribution.

[4] These types of distributions are captured by detail on IRS Form 1099.

Figure 2.1. Percentage of TIAA income recipients by type of income distribution, 2008-18



Source: Author calculations

The data in Figure 2.1 report information on the total stock of income beneficiaries in each year, a group that includes individuals who began drawing income in many previous years (including some receiving payouts for as many as four decades). Table 2.1 summarizes the evolving size 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) receiving payouts. This population was 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 after 2000, the period that we focus on in our analysis of retirement and participant choices. The comparison of columns two and four underscores the long length of payout periods. Even in 2018, only about one-third of payout beneficiaries had retired after 2000. This reflects both the large stock of pre-2000 retirees and the fact that some post-2000 retirees had not yet started to draw income.

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: Author calculations

The declining share of beneficiaries who are receiving annuity payouts, shown in Figure 2.1, reflects a combination of changing institutional payout rules over a period of many years and changing participant behavior. To examine the changing role of participant choices at retirement, most of this study will focus on the behavior of participants who are newly retired each year–those participants aged 59½ or older who cease making contributions to the TIAA system.

We analyze administrative data on participants over the 2000-2018 period. 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 retirement dates, either self-reported or administrative, and in particular has no information on employment or pension contributions at employers that are not part of the TIAA system. For this paper, we define a participant as "retiring" in a given year if that person is over the age of 59½, made retirement plan contributions in the previous year, and did not make contributions in the current or any future year. We focus on the payout decisions of these individuals.[6]

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

Table 2.2 presents summary information on the new retiree sample that is the focus of our analysis. Among the nearly 4.3 million TIAA participants in 2018, 1.56 million were over the age of 59½. Those stock measures contrast with the flows in the last three columns: the number of new retirees, defined as individuals who were older than 59½ when they made their last contribution and who did not make any subsequent contributions; those who received first income and who were at least 55 years of age; and those who were both new retirees and new income recipients. It is possible for a participant who turned 59½ after 2000, and who is therefore in our sample, to receive income before her retirement date. In our sample, only 0.8% of estimated retirees had pre-retirement income draws before that age.

[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.

[6] It is possible that some of these individuals worked at employers outside the TIAA system after they stopped contributing to their TIAA account; this will tend to bias our estimate of retirement ages downward.

The sample includes 672,316 participants who first drew income between 2000 and 2018, and 660,357 participants who retired during this period. Because there are often several years between the date of a participant's last contribution and the date of his or her first income draw, these two groups are not coincident. There are 327,996 participants who both retire and draw their first income during the sample period. Those who retire but are never observed drawing income might never have reached an action-forcing constraint, such as turning age 70½, or they might have taken one or more cash withdrawals from their account. We do not classify lump-sum cash distributions as income payouts. Some of those who retired but never drew income died before beginning income draws; others may have rolled their account balance out of TIAA and to another financial institution. Analyzing those populations is beyond the scope of this paper.

The 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 this 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, for married couples, the total value of their retirement accounts, because one or both members of the household might have other accounts at other institutions. The lack of information on assets held at other financial 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.

Table 2.2. Description of TIAA participant and "new retiree" samples

Year	TIAA Participants	TIAA Participants Over Age 59½	New Retirees	First-Time Income Recipients	Post-2000 Retirees Drawing First Income
2000	N/A	N/A	18,939	16,301	6,260
2001	2,556,180	620,315	18,448	16,314	7,317
2002	2,716,458	683,776	19,343	19,841	8,185
2003	2,845,174	727,889	20,258	23,753	9,006
2004	2,995,069	798,695	22,825	22,574	10,134
2005	3,115,512	844,498	25,862	27,230	12,737
2006	3,219,011	912,422	26,654	32,703	15,582
2007	3,333,011	974,129	29,873	39,891	16,691
2008	3,416,162	1,028,922	35,222	32,373	15,785
2009	3,488,362	1,087,183	31,432	21,389	10,735
2010	3,559,135	1,146,608	35,148	36,431	18,871
2011	3,625,944	1,201,148	38,748	36,058	19,120
2012	3,694,614	1,245,288	38,818	35,957	19,135
2013	3,791,338	1,302,131	43,416	41,506	21,606
2014	3,877,354	1,356,176	47,708	46,865	24,203
2015	3,966,052	1,399,279	51,040	50,012	26,128
2016	4,085,929	1,458,897	50,581	52,107	26,085
2017	4,178,800	1,513,669	51,591	61,705	30,966
2018	4,267,466	1,564,261	54,451	59,306	29,450
Unique Participants, 2000-2018	5,882,086	2,242,180	660,357	672,316	327,966

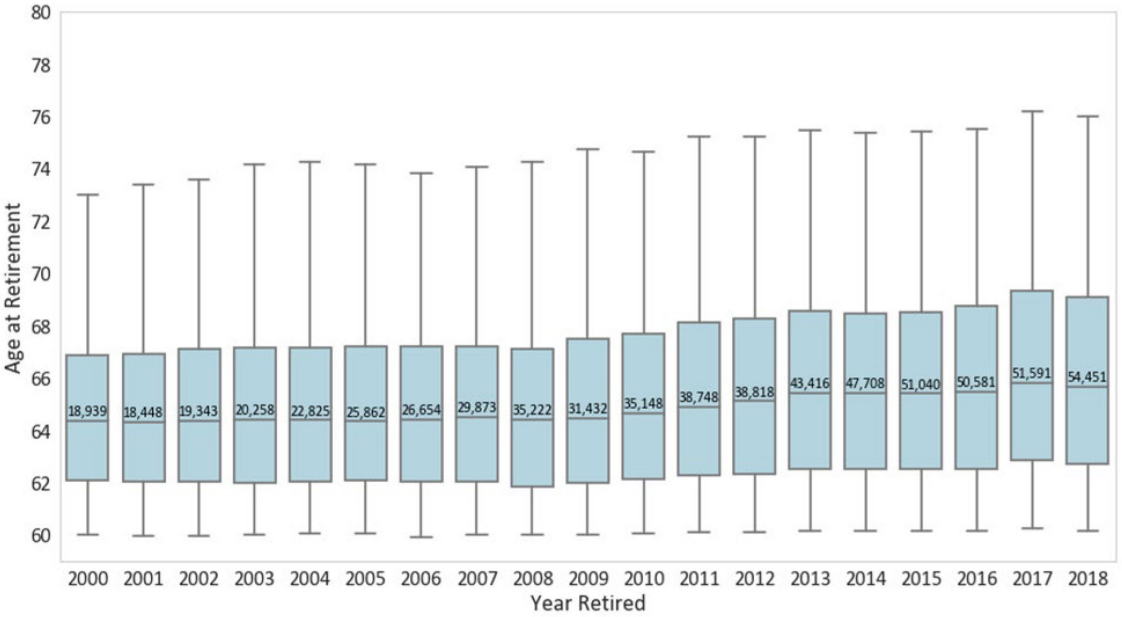
Source: Author calculations

3. When do TIAA participants "retire"?

To study retirement behavior, we focus on TIAA participants who are at least 59½ years of age. We define "retirement" as the age at which the last contribution to TIAA is observed. Our definition of retirement is imperfect, as an individual who stops working at an institution in the TIAA system and takes a new job at another employer who is outside the system would be classified as retired in our analysis even though they may continue to work and save for retirement elsewhere. 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 their career job and before completely 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 their 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, a period which is characterized, especially in the later years, by the retirement of the baby boom cohort. 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 in general, and the particular age 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.

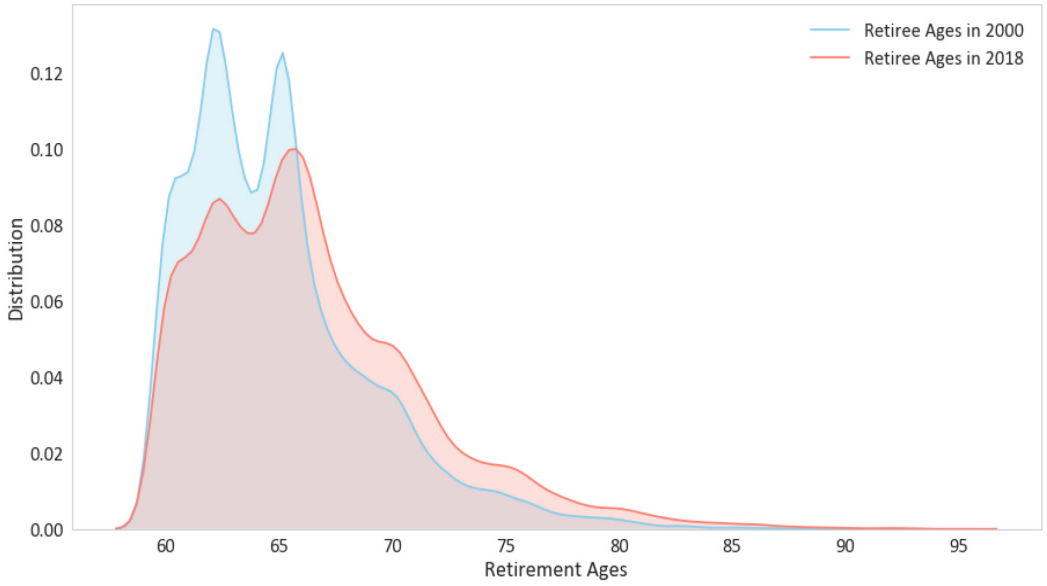
Figure 3.1. Distribution of "retirement" ages, by year, for TIAA participants



Source: Author calculations

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 likely reflects the shifting of the Social Security full retirement age from 65 to 66 over the course of the sample. The share of retirements taking place before age 66 declined between 2000 and 2018, while the share of retirements at all ages above 66 increased.

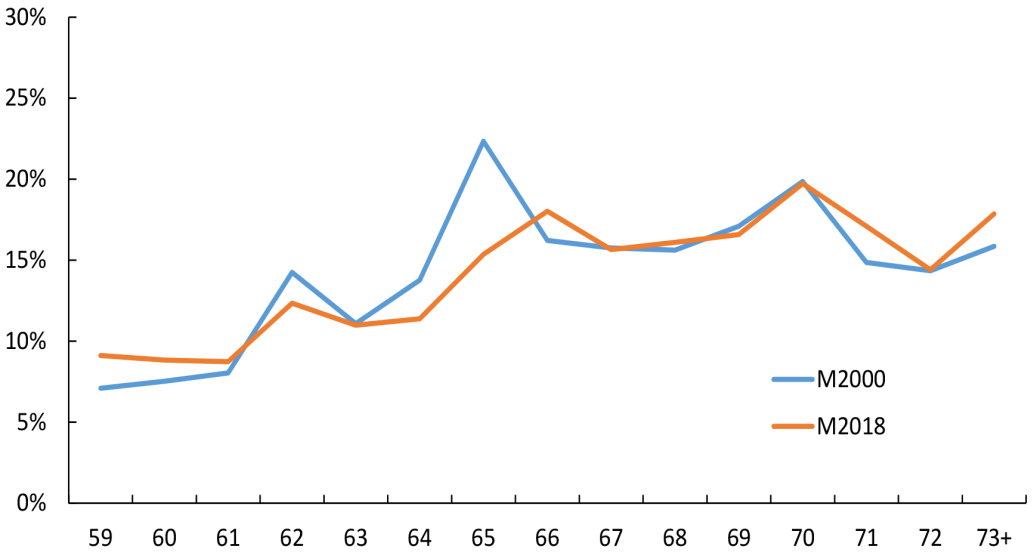
Figure 3.2. Distribution of "retirement" ages for TIAA participants, 2000 and 2018



Source: Author calculations

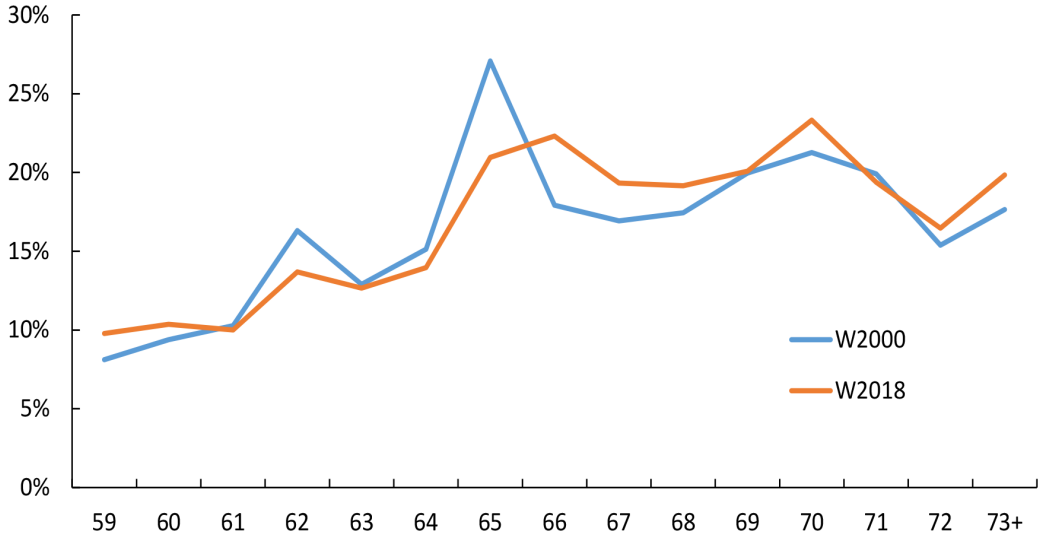
Figures 3.3 and 3.4 present the hazard rates of retirement for men and women, respectively, at ages between 59 and 73 in 2000 and 2018. In 2000, 7.7% of 60-year-old men who were contributing to the TIAA system in the prior year stopped contributing and "retired." The blue line in each figure, for 2000, shows a more pronounced retirement spike at age 65 than at any subsequent age. The hazard rates in 2000 peak at age 65 at 26.4% for men and 22.6% for women. By 2018, in contrast, the hazard rates at age 65 had fallen to 15.4% for men and 21.0% for women. For men, the decline in the hazard rate at age 65 between 2000 and 2018 is not matched by an increase in the hazard rate at any older ages. For women, the hazard rate of retirement is somewhat higher between ages 66 and 70 in 2018 than in 2000. Figures 3.3 and 3.4 show local peaks in hazard rates for both men and women at three ages: 62 (the early retirement age for claiming Social Security), 65 or 66 (the normal retirement age for claiming in 2000 and 2018, respectively), and 70 (the age of maximum Social Security benefit).

Figure 3.3. Hazard rate for retirement: Men



Source: Author calculations

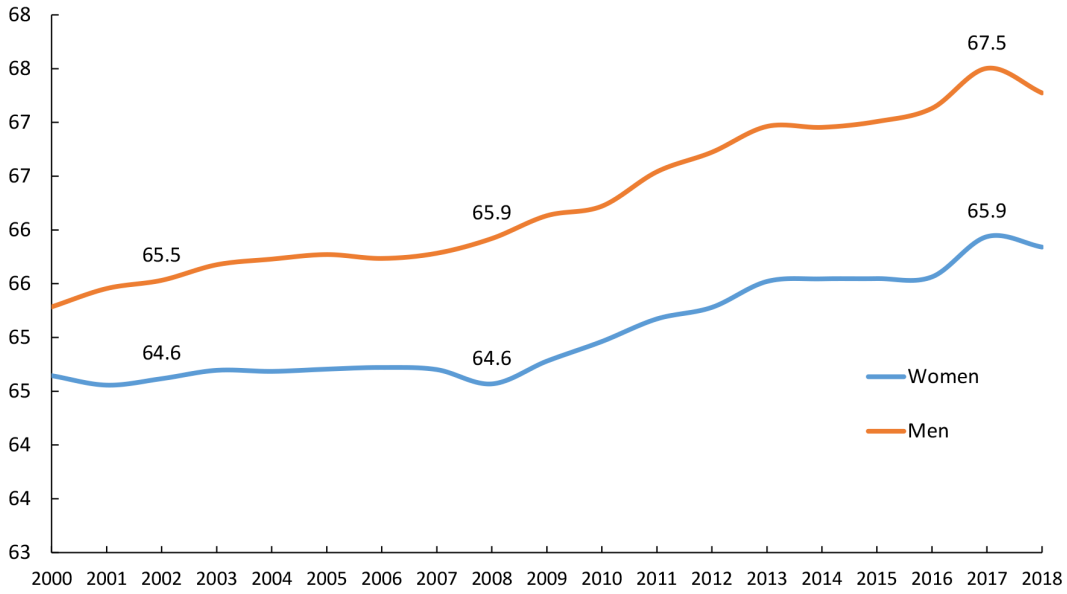
Figure 3.4. Hazard rate for retirement: Women



Source: Author calculations

The cumulative effect of the changing age-specific retirement hazard rates can be seen in Figure 3.5, which plots the average retirement age by year for men and women. For women, the average age at retirement was roughly 64.5 years from 2000 until 2008. Over the next decade, it rose to about 66. For men, the increase is larger, rising from just over 65 in 2000 to 67.5 in 2017 before declining slightly to 67.3 in 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 3.5. Average age of estimated retirement, by gender, 2000-2018



Source: Author calculations

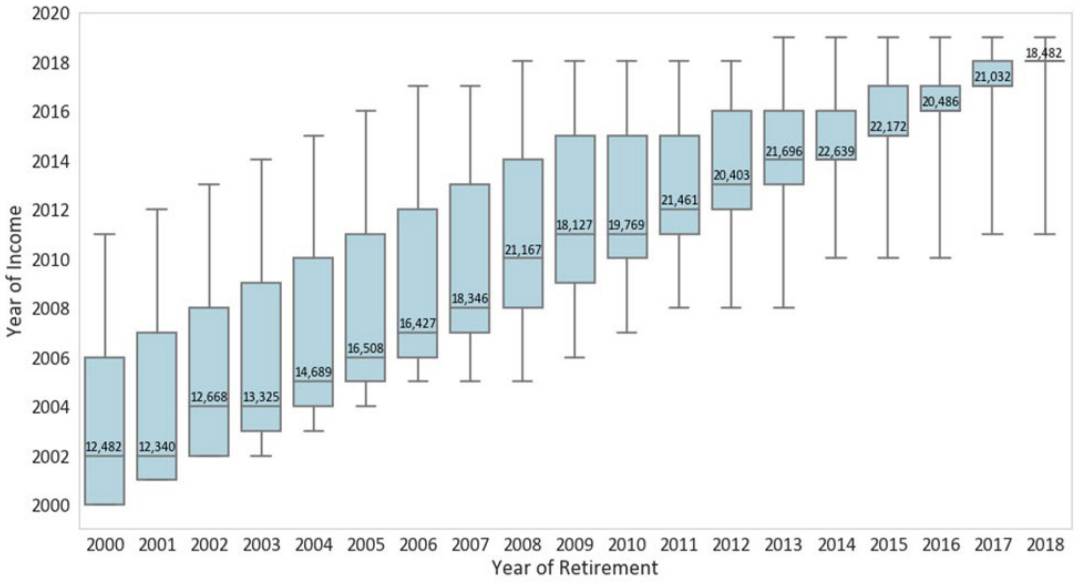
The hazard rates plotted in Figures 3.3 and 3.4 can be used to calculate the change between 2000 and 2018 in the probability that a TIAA participant who was making contributions at age 60 would still be contributing at later ages. In 2000, a male TIAA participant who, as he aged, faced the age-specific retirement probabilities of that year had a 19.8% probability of working until at least age 70. The analogous probability in 2018 was 25.2%, roughly one-quarter higher. The probability of working to age 70, conditional on working at age 60, did not rise monotonically during this 18-year period, and the retirement hazards do not evolve smoothly. The hazard rates for men were lower in 2010, in the immediate aftermath of the Great Recession, than in 2018. Thereby, the values for 2010 implied that a 60-year-old man had a 30.3% chance of working to age 70.

4. Trends in the timing of income draws by TIAA retirees

The longitudinal nature of the TIAA data is particularly valuable for studying the multi-period nature of the income draw decision. Figure 4.1 shows the distribution of dates at which income begins for all participants who retired in each year between 2000 and 2018. The figure presents the median year in which income draws began, the 25th and 75th percentiles, and the 5th and 95th percentiles. The median gap between "retirement"

and initiation of income draws is between one and two years for all retirement cohorts in our sample. 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

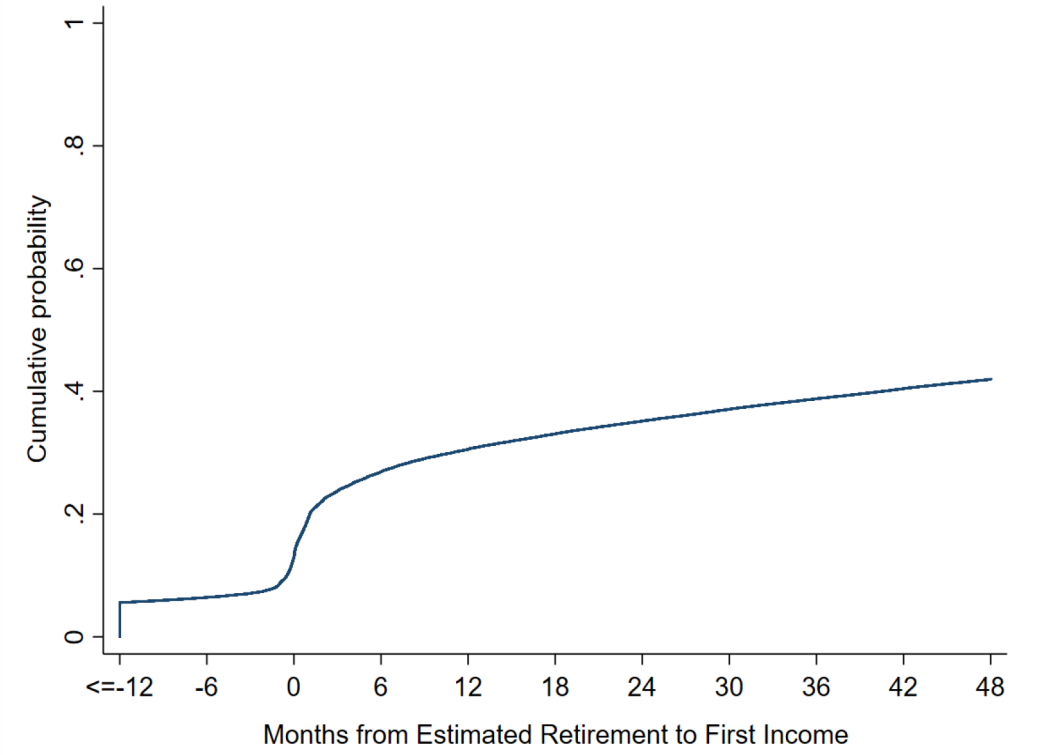


Source: Author calculations

Figure 4.2 shows the time gap, from 12 months prior to 48 months after, between retirement and first income draw for our cumulative sample. Just over 13% of retirees show an income distribution prior to retirement. Roughly 28% of retirees begin income within the first six months after retirement. By four years after retirement, about 43% of retirees have taken at least one income draw. There is a group of participants who wait many years after retirement before drawing income, and for some there is no income draw in our sample period. Some of these participants are beyond age 70½, the age at which RMDs must begin. These participants may have multiple 403(b) retirement plans at multiple providers, and they may be meeting their RMD requirements by taking distributions from another source.

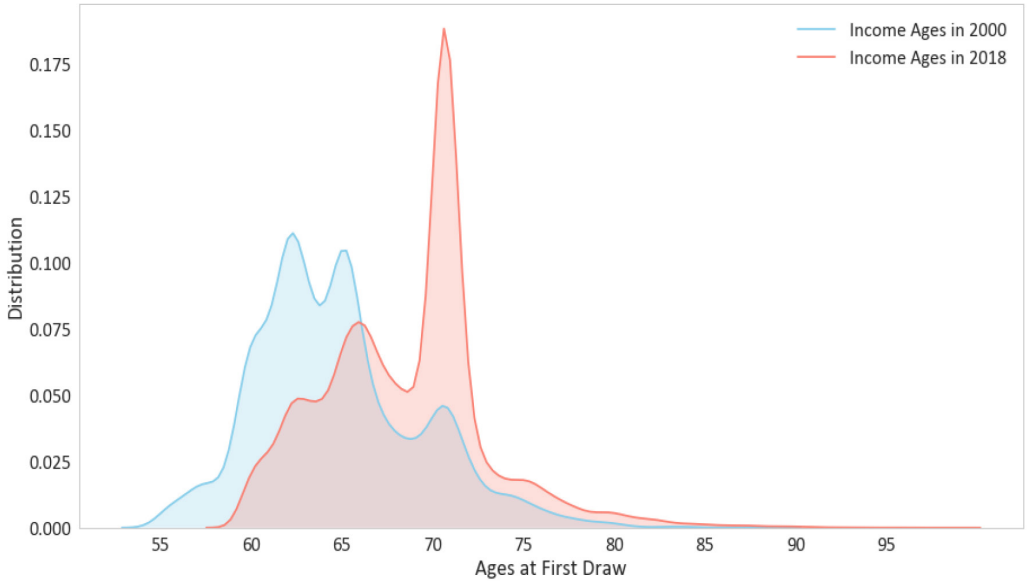
Figure 4.3 reports the distribution of ages at which participants began to draw income in both 2000 and 2018. There is a contrast between the patterns in the two years. In 2000, there were two peaks in the distribution, at ages 62 and 65. Those corresponded to the early and normal retirement ages for Social Security. In 2018, however, there is one very pronounced peak, corresponding to nearly one-quarter of those who initiate an income draw, at age 71. The share of participants beginning distributions before age 65 fell from 47.8% in 2000 to 13.3% in 2018. In contrast, 18.7% were above the age of 70 in 2000, compared with 61.2% in 2018.

Figure 4.2. Cumulative percentage of retirees taking first income draw, by years since retirement, 2000-2016



Source: Author calculations

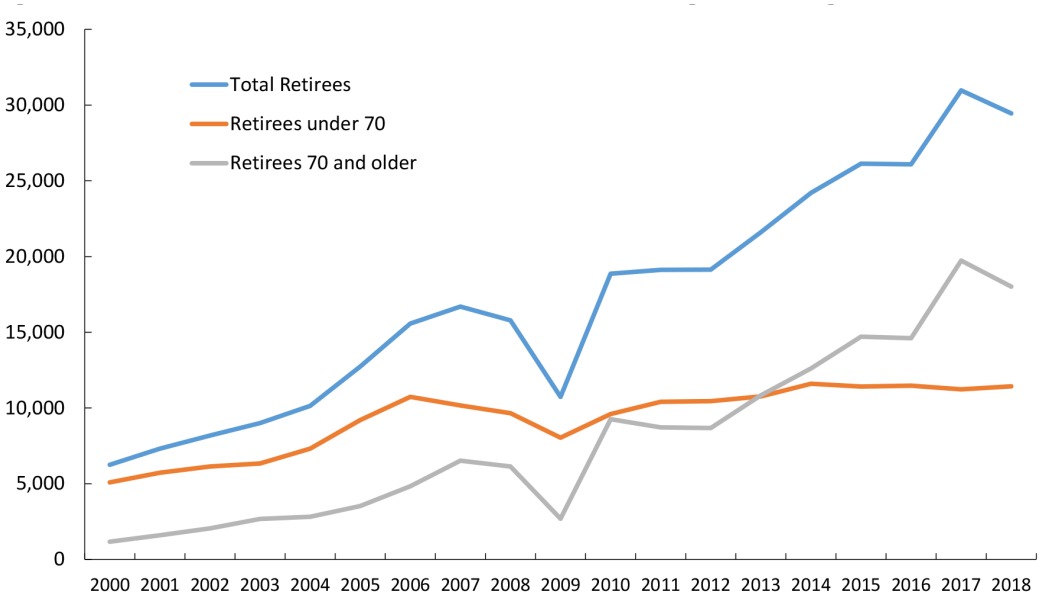
Figure 4.3. Distribution of first income ages in 2000 and 2018



Source: Author calculations

Figure 4.4 shows the number of TIAA participants who take first income draws before and after the age of 70 in each sample year. Most of the growth in income starts 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 15 fold. In 2000, 19% of retirees over 70 took a first income draw; in 2018, 61% did.

Figure 4.4. Number of TIAA retirees above and below age 70 taking first income



Source: Author calculations

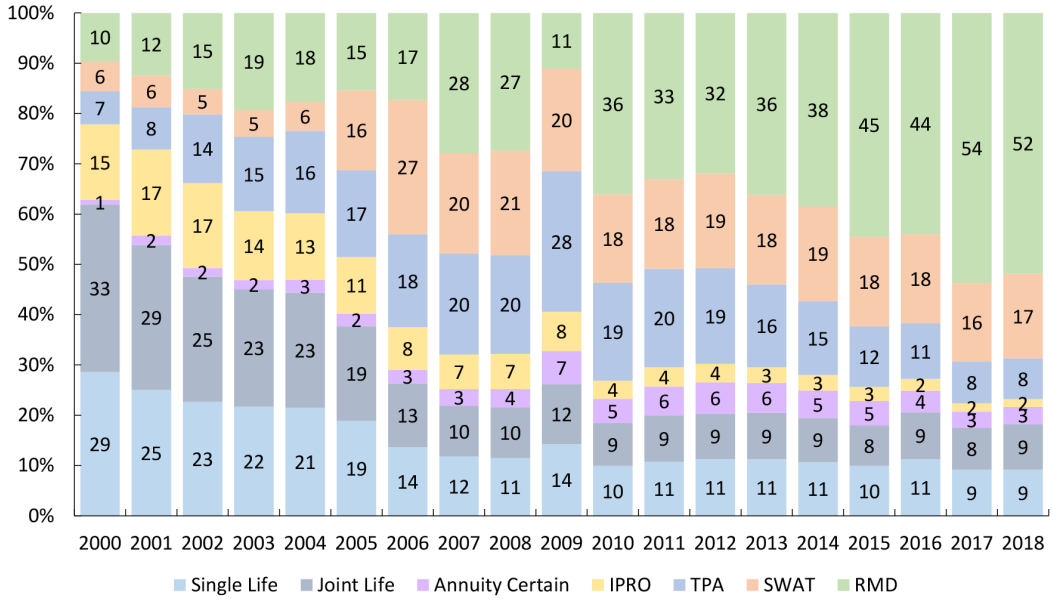
5. The choice among initial income options by TIAA participants

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. The figure 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. A small group of participants, 2,615 individuals or 0.8% of the sample, began income draws between the ages of 55 and 59½–before they "retired."

The data in Figure 5.1 indicate that in 2000, just over a decade after the end 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% of the participants taking initial income draws selected a life annuity. 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.

Figure 5.1. First income distribution, by type, 2000-2018

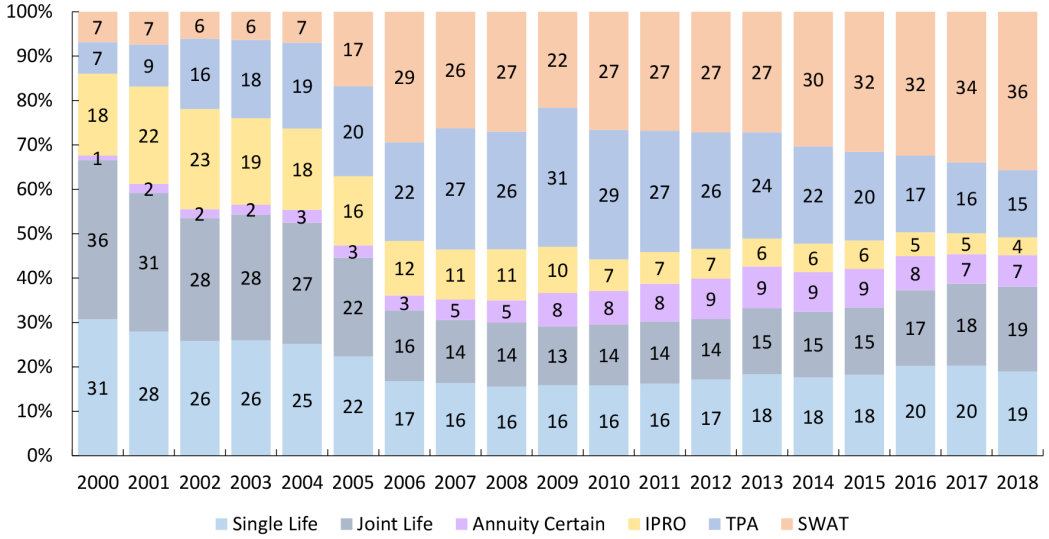


Source: Author calculations

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 in 2009.

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 initially 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 was offset by the rise in the use of life annuities and systematic withdrawals.

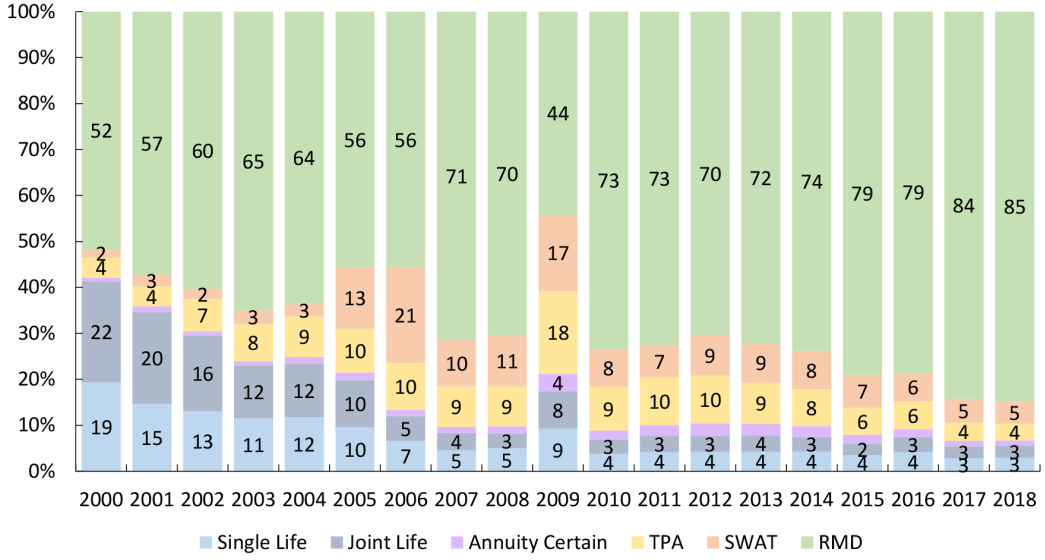
Figure 5.2. First income distribution, by type, for retirees under age 70



Source: Author 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.

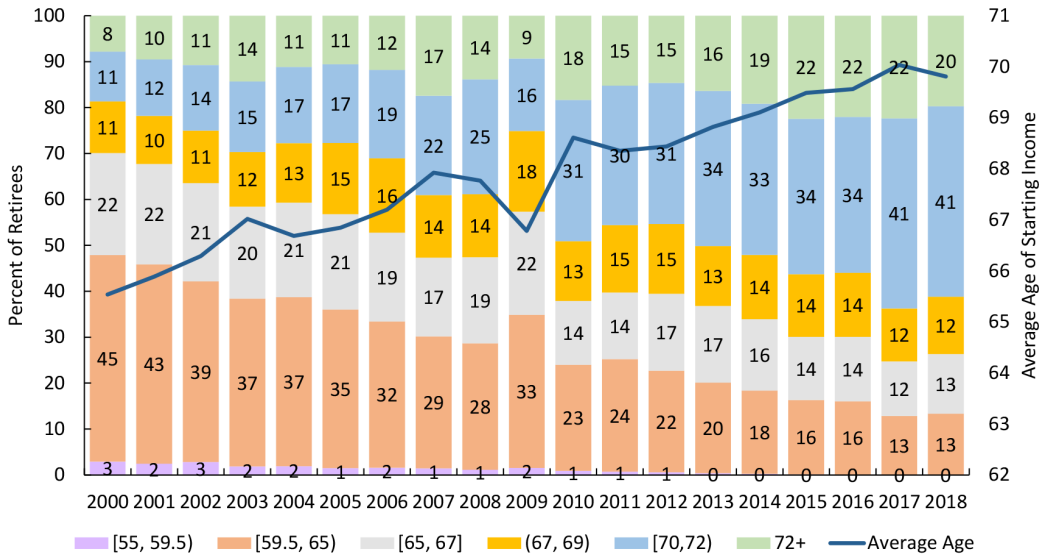
Figure 5.3. First income distribution, by type, retirees age 70 or older



Source: Author calculations

The shifting mix of TIAA retirees' initial income selections is partly attributed to a shifting 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 blue line, with the legend on the right margin of the graph, 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: Author calculations

The data in Figure 5.4 are related to information on the age at first annuitization reported 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.

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 a maximum of 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 a maximum of two 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 provides additional insights on 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. Between 2000 and 2018, the distribution of retirement ages shifted up. 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 the 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.

About one-fifth of retirees received more than one type of income; the most common pairing was an RMD and a life annuity. Among all participants receiving retirement distributions, the proportion who had a life annuity as part of their payout strategy fell from 52% to 31% between 2008 and 2018, although a life annuity remained the most common form of retirement income distribution. By comparison, the proportion taking an RMD payment roughly doubled, from 16% to 29%. 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.

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Dr. Poterba is a trustee of the College Retirement Equity Fund (CREF), the TIAA-CREF mutual funds, and of the Alfred P. Sloan Foundation. He is a former editor of the Journal of Public Economics, the leading international journal for research on taxation and government spending, a co-author of The Role of Annuity Markets in Financing Retirement (2001), and an editor or coeditor of Global Warming: Economic Policy Responses (1991), International Comparisons of Household Saving (1994), Empirical Foundations of Household Taxation (1996), Fiscal Institutions and Fiscal Performance (1999), Fiscal Reform in Colombia (2005), and Economic Analysis of Infrastructure Investment (forthcoming). Dr. Poterba served as a member of the President's Advisory Panel on Federal Tax Reform in 2005.

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