Research Study

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A LONGITUDINAL ANALYSIS OF CONSISTENT PARTICIPANTS IN THE PUBLIC RETIREMENT RESEARCH LAB DATABASE, 2019–2021

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SUMMARY

The Public Retirement Research Lab (PRRL) was established to provide reliable data on public-sector defined contribution (DC) retirement plan participants. The PRRL Database is the repository for the data collected by the PRRL. To fully understand the impact of ongoing plan participation, it is crucial to analyze a consistent group of participants (a longitudinal sample) who have been part of the database for an extended period. This paper presents the first longitudinal study that analyzes public retirement plan participants who were present every year from 2019 through 2021. The study tracks balances, contributions, asset allocations, and loan activity of 1.1 million plan participants who held positive defined contribution account balances in the years 2019 through 2021 in the PRRL Database, covering a three-year period.

KEY FINDINGS

A few key insights from the 1.1 million consistent participants over the period from year-end 2019 to year-end 2021:

- **Account balances grew steadily from 2019 through 2021.** DC plan balances for consistent participants rose each year from year-end 2019 through year-end 2021. Overall, the average plan balance rose from $43,839 in 2019 to $61,886 at year-end 2021 while the median balance rose from $10,365 to $16,864. This growth was widespread across participants; the median year-over-year change in balances from 2019 to 2020 was $3,045, and the median change in balances from 2020 to 2021 was $1,941. Similarly, the average year-over-year change in balances from 2019 to 2020 was $11,323, and the average change in balance from 2020 to 2021 was $6,724.

- **Dollar contributions increased among those participants who continued saving.** Among the participants who contributed each year, the average employee contribution increased from $2,405 in 2019 to $2,778 in 2020 and $3,012 in 2021. Median employee contributions ranged from $1,222 to $1,392 and $1,520 in 2019, 2020, and 2021, respectively. The fraction of plan participants in the sample who made a contribution to their DC accounts fell from 79 percent in 2019 to 76 percent in 2020 and 72 percent in 2021. However, the active status for all three years is only known for 6 percent of the participants, so a potentially large share of those who stopped contributing could have been no longer eligible to contribute (see "Contribution Analysis of Participants Flagged as Active" on page 13).
- **Participants tend to concentrate their accounts in equities.** At year-end 2019, the average allocation to equity funds was approximately 67 percent of consistent participants' assets. This includes allocations directly to equity funds and the equity portion of target-date funds or the equity portion of non-target-date balanced funds. Younger participants tended to have higher concentrations in equities than older participants. Participants' exposure to equities and the other asset classes remained relatively constant over the 2019–2021 timeframe.
- **Younger participants tend to allocate a higher percentage of their funds to target-date funds compared to older participants.** In 2021, participants in their 20s allocated an average of 67 percent to target-date funds, while participants in their 60s had an average allocation of 29 percent. Additionally, the utilization rate of target-date funds remained steady, with 36.6 percent of the consistent sample participants allocating their entire portfolio to target-date funds every year from 2019 to 2021.

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INTRODUCTION

Employees in the public sector often encounter a complex retirement landscape. Many public-sector employees have a defined benefit pension plan, while others have a "hybrid" 401(a) plan. Along with those plans, they could also have a supplemental defined contribution (DC) plan, such as a 457(b) plan. The PRRL was established to address this fragmented landscape and provide reliable data on public-sector DC retirement plan participants. The PRRL Database is the repository for the data collected by the Public Retirement Research Lab.

> The PRRL Database is an opt-in collaboration among public retirement plan sponsors. Plan sponsors receive complimentary benchmarking as a participation benefit. For more information on how to participate, please contact NAGDCA Executive Director Matt Petersen at mpetersen@nagdca.org.

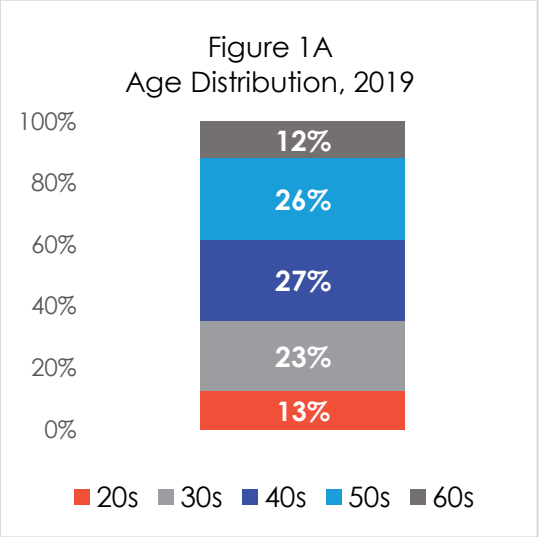
While the annual updates of the PRRL Database offer valuable insights into balances, asset allocation, and loan activity across a wide range of participants, this type of cross-sectional analysis cannot determine how participants behave over time. To fully understand the impact of ongoing plan participation, it is critical to follow the same group of participants (a longitudinal sample) who have been part of the database in each year. This paper presents the first longitudinal analysis of the balances, contribution, and asset allocation of 1.1 million participants in the PRRL Database over the period from year-end 2019 through year-end 2021. Not all variables are available for each participant, and so not all participants are included in each calculation. See the section labeled "Sample Selection Criteria" at the end of this report for additional details on the construction of the longitudinal sample.

It is common for public-sector employers to offer multiple defined contribution plans to their employees. Prior research from the PRRL Database has documented that nearly one in five PRRL participants have accounts with at least two different defined contribution plans.[1] All calculations in this report are conducted at the participant-year level, aggregating across participants' different plans that are visible in the PRRL for a given year. For instance, if a participant has a 457(b) plan and a 401(a) plan, and the respective balances for the year 2019 are $6,000 and $2,000, then the account balance for this participant for 2019 is $8,000.[2] If this participant contributed $1,000 to the 457(b) plan and did not make a contribution to 401(a) in 2019, then this participant would have a total contribution of $1,000 in 2019. Unless otherwise specified, an "account balance" refers to the sum of balances across all plans for a participant in a given year.

DEMOGRAPHIC CHARACTERISTICS OF THE CONSISTENT SAMPLE

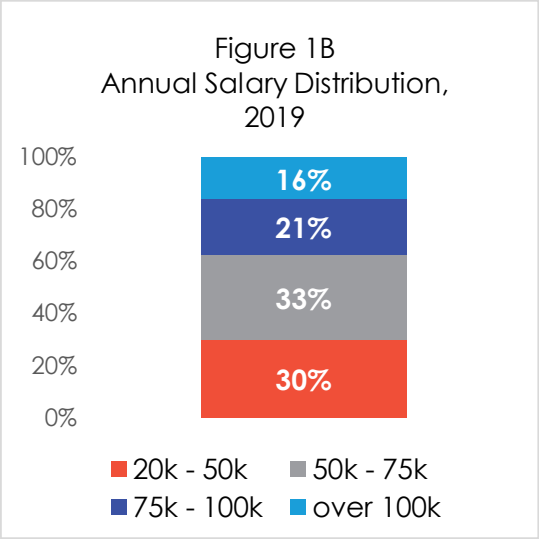
Figures 1A–1C below show the demographic characteristics for the individuals in the consistent sample. These figures demonstrate the characteristics of individuals as of 2019; characteristics of individuals may vary over time. For example, individuals may change jobs or receive pay adjustments, and these changes are reflected in the PRRL Database. Note that tenure and salary information is not available for all participants.

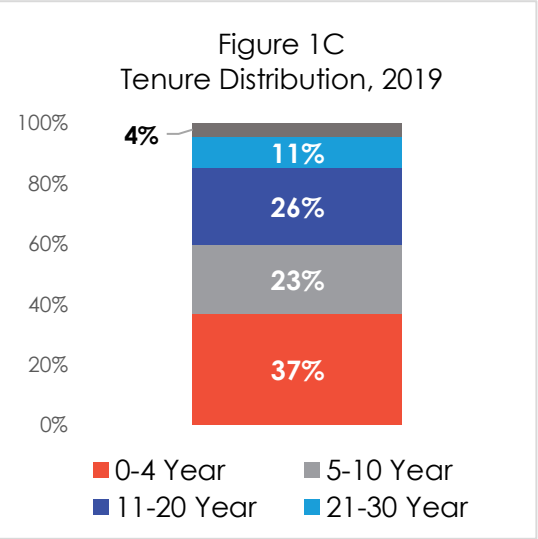
The largest age group among the consistent sample in 2019 was the 40s group (27 percent), followed by the 30s (26 percent) and the 50s (23 percent). The smallest age group among the consistent sample was the 20s, making up only 12 percent (Figure 1A).



Salary information is available for 18 percent of the consistent sample; among those with salary information, the most common salary band was $50,000–$75,000. The smallest salary group was those making more than $100,000 annually (Figure 1B).

Tenure information is available for 92.4 percent of the consistent sample; among those participants, the largest tenure group among the consistent sample in 2019 was the 0–4 years group (37 percent), followed by the 11–20 years group (26 percent) and the 5–11 years group (23 percent). The smallest tenure group was those with greater than 30 years of tenure, making up only 4 percent of the consistent sample (Figure 1C).



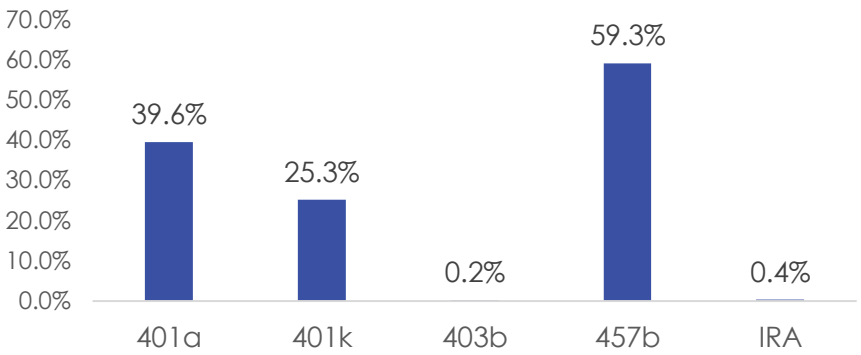


PLAN TYPE DISTRIBUTION

Public-sector employers can offer a wide range of plan types, with many of these employers offering participants multiple plan types. As such, some participants have accounts of different types. The most common plan type in the sample in 2021 was a 457(b) plan, with 59.3 percent of participants having one, followed by a 401(a) plan (39.6 percent). The least common plan types in the sample were 403(b) plans and individual retirement accounts (IRAs), with each representing less than half of a percent of the participants. Given this distribution of plans, it should be understood that the results from this

study are reflective of behavior in 457(b) and 401(a) plans but not of behavior in other plans available in the public sector.

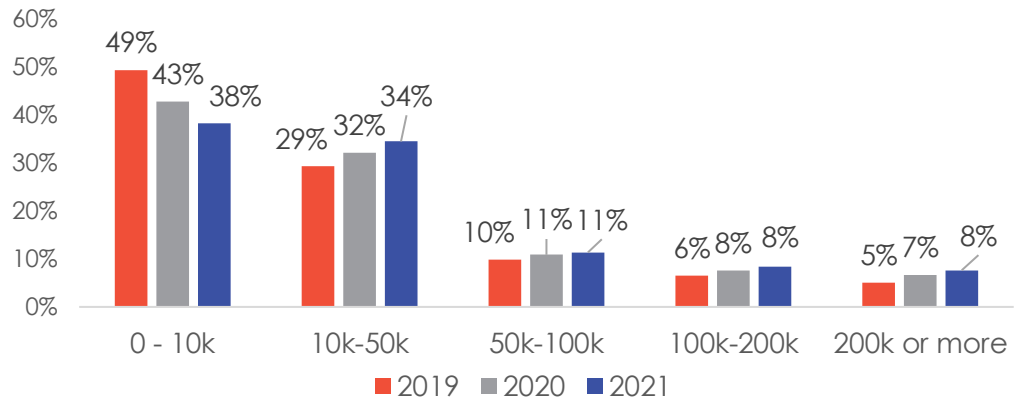
Figure 1D
Plan Type Distribution, 2021



PARTICIPANTS CAN ACCUMULATE SIZABLE ACCOUNT BALANCES

The account balances of consistent participants show the cumulative effects of ongoing participation. At the end of 2019, 49 percent of participants had a balance of under $10,000, while 29 percent had $10,000–$50,000. By the end of 2021, the percentage of participants with a balance of under $10,000 decreased to 38 percent, while the percentage of participants with larger account balance ranges increased, as seen in Figure 2.

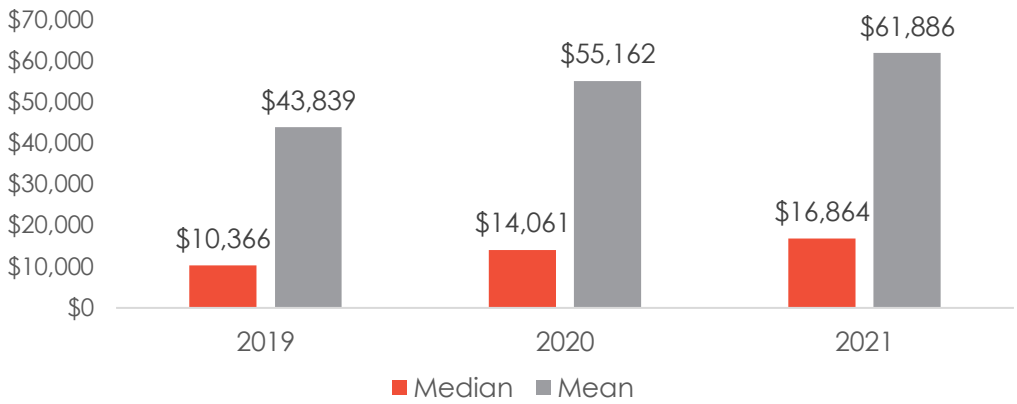
Figure 2
Account Balance Distribution, 2019–2021



CHANGES IN ACCOUNT BALANCES

The average balance among the group of consistent participants increased from $43,839 at year-end 2019 to $61,886 at year-end 2021 (Figure 3). The median account balance among this consistent group also grew from $10,365 in 2019 to $16,864 in 2021.[3]

Figure 3
Mean and Median Account Balance, 2019–2021



The average account balance increase from year to year can be observed in all age and tenure groups. For example, the average balance for those in their 40s with 5–10 years of tenure in 2021 was $47,773 compared with $30,738 in 2019. Furthermore, for those in their 60s with 31 or more years of tenure, the average balance increased from $145,265 in 2019 to $180,735 in 2021 (Figure 4).

The same pattern can also be observed in the median account balance figures. For instance, the median account balance for participants in their 20s with 0–4 years of tenure was $4,722 in 2021 compared with $1,441 in 2019 (Figure 5). Among participants in their 50s with 31 years or more of tenure, the median account balance increased from $123,394 in 2019 to $162,702 in 2021.

Figure 4 - Average Account Balances, by Age and Tenure

Age Group	Tenure Group	2019	2020	2021
20s	All	$4,355	$7,234	$9,772
	0–4 Years	$3,469	$6,130	$8,554
	5–10 Years	$10,312	$14,519	$17,921
30s	All	$15,967	$22,117	$26,507
	0–4 Years	$7,164	$11,484	$14,941
	5–10 Years	$18,483	$26,052	$30,403
	11–20 Years	$34,201	$42,608	$49,494
40s	All	$41,619	$53,460	$61,107
	0–4 Years	$11,063	$16,267	$20,417
	5–10 Years	$30,783	$42,818	$47,773
	11–20 Years	$57,274	$71,659	$81,238
	21–30 Years	$89,466	$110,477	$125,051
50s	All	$66,391	$83,733	$92,677
	0–4 Years	$15,785	$22,154	$26,997
	5–10 Years	$43,629	$59,576	$65,141
	11–20 Years	$69,152	$86,597	$95,200
	21–30 Years	$115,063	$142,895	$157,194
	31+ Years	$123,394	$149,944	$162,702
60s	All	$83,604	$99,757	$108,135
	0–4 Years	$18,722	$24,866	$28,831
	5–10 Years	$47,270	$61,428	$66,365
	11–20 Years	$78,748	$94,389	$101,392
	21–30 Years	$120,509	$143,162	$154,438
	31+ Years	$145,265	$167,035	$180,735
All	**All**	$43,839	$55,162	$61,886

Figure 5 - Median Account Balances, by Age and Tenure

Age Group	Tenure Group	2019	2020	2021
20s	All	$1,683	$3,436	$5,074
	0–4 Years	$1,441	$3,138	$4,722
	5–10 Years	$6,203	$8,872	$10,901
30s	All	$6,249	$9,440	$11,994
	0–4 Years	$2,562	$4,853	$6,871
	5–10 Years	$10,023	$13,990	$16,645
	11–20 Years	$18,524	$22,083	$24,839
40s	All	$14,191	$18,544	$21,745
	0–4 Years	$2,738	$4,979	$6,991
	5–10 Years	$12,454	$16,930	$19,559
	11–20 Years	$28,005	$33,205	$37,015
	21–30 Years	$48,034	$56,024	$63,318
50s	All	$22,129	$27,404	$30,946
	0–4 Years	$2,985	$5,298	$7,369
	5–10 Years	$13,495	$18,133	$20,618
	11–20 Years	$28,313	$33,606	$36,945
	21–30 Years	$60,563	$70,461	$78,008
	31+ Years	$71,519	$81,958	$87,874
60s	All	$26,210	$30,860	$33,189
	0–4 Years	$2,795	$4,862	$6,390
	5–10 Years	$12,202	$15,771	$17,600
	11–20 Years	$27,947	$32,423	$34,479
	21–30 Years	$52,554	$59,951	$63,998
	31+ Years	$71,452	$78,770	$83,447
All	**All**	$10,365	$14,061	$16,864

Among the consistent group, individual participants experienced a wide range of outcomes. Because younger participants' account balances tended to be smaller, their contributions produced significant growth (in relative terms) in their account balances. In contrast, the average account balance of older participants, or those with longer tenures — both of whom tended to have larger balances at the beginning of the study period than younger workers or those with shorter tenures — showed more modest relative growth in account size. For example, the average account balance of participants in their 60s increased 29 percent (a 14 percent compound annual average growth rate (CAGR)) between year-end 2019 and year-end 2021 (Figure 6).

Figure 6 - Growth in Average Account Balance, by Age and Tenure

Age Group	Tenure Group	2019–2020	2020–2021	2019–2021	CAGR
20s	All	66%	35%	124%	50%
	0–4 Years	77%	40%	147%	57%
	5–10 Years	41%	23%	74%	32%
30s	All	39%	20%	66%	29%
	0–4 Years	60%	30%	109%	44%
	5–10 Years	41%	17%	64%	28%
	11–20 Years	25%	16%	45%	20%
40s	All	28%	14%	47%	21%
	0–4 Years	47%	26%	85%	36%
	5–10 Years	39%	12%	55%	25%
	11–20 Years	25%	13%	42%	19%
	21–30 Years	23%	13%	40%	18%
50s	All	26%	11%	40%	18%
	0–4 Years	40%	22%	71%	31%
	5–10 Years	37%	9%	49%	22%
	11–20 Years	25%	10%	38%	17%
	21–30 Years	24%	10%	37%	17%
	31+ Years	22%	9%	32%	15%
60s	All	19%	8%	29%	14%
	0–4 Years	33%	16%	54%	24%
	5–10 Years	30%	8%	40%	18%
	11–20 Years	20%	7%	29%	13%
	21–30 Years	19%	8%	28%	13%
	31+ Years	15%	8%	24%	12%
All	**All**	26%	12%	41%	19%

CONTRIBUTIONS

Not all participants make contributions to their accounts in a given year. The share of individuals who contributed to any account in a given year did decrease across the sample period: 79 percent of participants contributed to at least one account in 2019, whereas only 75 percent and 72 percent of participants made contributions in 2020 and 2021, respectively.

The decline in participants making contributions to their accounts was seen across multiple groups but was most pronounced among the participants with relatively low levels of tenure with their employer and those in younger age groups, as can be seen in Figure 8. For example, 87 percent of participants in their 20s with 0–4 years of tenure made a contribution to their accounts in 2019, but only 71 percent of these participants made a contribution in 2021. On the other hand, 75 percent of participants in their 30s with 11–20 years of tenure made contributions in 2019 and 74 percent of these same participants made contributions in 2021.

This decline in contribution rate of the consistent plan participants in 2020 and 2021 could be due to the sample including all of those with account balances more than $0 but not necessarily being limited to active participants. Thus, the decline in contributions could be a result of some of the participants no longer being active and therefore not being allowed to make contributions. Active status is only available for 6 percent of consistent participants. See “Contribution Analysis of Participants Flagged as Active” below for the breakdown of the contribution history of those flagged as active participants, for further discussion.

Contribution Analysis of Participants Flagged as Active

Out of 67,859 participants who were flagged as active in all three years, 84 percent contributed in 2019, 82 percent in 2020, and 81 percent in 2021. Among the 84 percent of active participants who contributed in 2019, 95 percent still contributed in 2021. The percentage of participants who contributed was higher among younger and/or less-tenured groups. For instance, 96 percent of confirmed active participants in their 20s contributed in 2019, which declined to 91 percent in 2021. Meanwhile, only 68 percent of the active participants in their 60s contributed in 2019, and that declined to 60 percent in 2021 (Figure 7). In addition, out of all the accounts belonging to the consistent participants that received contributions in 2019 but did not receive any contribution in 2021, more than one-third were mandatory contributing accounts. These accounts require all active participants to contribute a specific amount, indicating that a large percentage of participants ceased contributing because they became inactive. Among the non-mandatory accounts, it is possible that some participants stopped contributing due to being inactive, but their active status is unknown.

Figure 7: Percentage of Employees (flagged as active) Making a Contribution, by Age

Age Group	2019	2020	2021
20s	96%	94%	91%
30s	92%	91%	90%
40s	87%	87%	86%
50s	83%	82%	81%
60s	68%	64%	60%
All	84%	82%	81%

Figure 8 - Percentage of Employees Making a Contribution, by Age and Tenure

Age Group	Tenure Group	2019	2020	2021
20s	All	85%	77%	70%
	0–4 Years	87%	78%	71%
	5–10 Years	65%	63%	60%
30s	All	81%	78%	75%
	0–4 Years	86%	80%	75%
	5–10 Years	74%	73%	72%
	11–20 Years	75%	74%	74%
40s	All	84%	82%	80%
	0–4 Years	88%	84%	80%
	5–10 Years	79%	78%	77%
	11–20 Years	80%	80%	79%

	21–30 Years	84%	83%	83%
50s	All	82%	80%	78%
	0–4 Years	88%	84%	80%
	5–10 Years	81%	80%	79%
	11–20 Years	80%	79%	78%
	21–30 Years	79%	77%	76%
	31+ Years	69%	66%	63%
60s	All	65%	62%	58%
	0–4 Years	85%	80%	75%
	5–10 Years	77%	74%	71%
	11–20 Years	65%	62%	59%
	21–30 Years	60%	56%	53%
	31+ Years	41%	38%	36%
All	**All**	79%	75%	72%

Among those participants who did contribute, younger participants were found to contribute lower dollar amounts than older participants with more tenure. For instance, the median contribution among participants in their 20s was $1,161 in 2021, compared with $1,779 for participants in their 50s (Figure 9).

The effects of age and time spent with the employer also reinforce each other; longer-tenured participants tended to contribute more than shorter-tenured participants of a similar age. Among participants in their 60s, those with 0–4 years of tenure contributed an average of $2,457 in 2021, while those with 31 years of tenure or more contributed an average of $4,495 (Figure 10). Notably, the contribution amounts increased across years (conditional on making a contribution). Similar effects can be observed in the median employee contribution figures. For example, among participants in their 40s, the median contribution among those with 0–4 years of tenure was $1,154 in 2021, compared with $2,299 for those with 11–20 years of tenure (Figure 11).

Figure 9
Median Employee Contributions by Age, 2019–2021

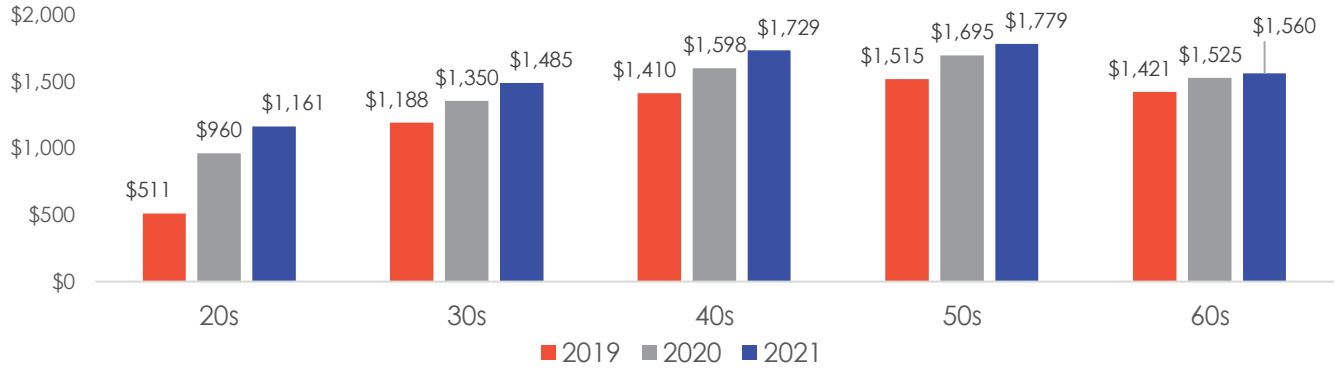


Figure 10 - Mean Employee Contribution Amount, by Age and Tenure of Those Contributing

Age Group	Tenure Group	2019	2020	2021
20s	All	$1,047	$1,455	$1,651
	0–4 Years	$937	$1,348	$1,543
	5–10 Years	$1,887	$2,159	$2,336
30s	All	$1,920	$2,316	$2,561
	0–4 Years	$1,356	$1,788	$2,024
	5–10 Years	$2,468	$2,769	$3,011
	11–20 Years	$2,792	$3,089	$3,360
40s	All	$2,532	$2,903	$3,177
	0–4 Years	$1,440	$1,857	$2,075
	5–10 Years	$2,566	$2,836	$3,079
	11–20 Years	$3,334	$3,654	$3,978
	21–30 Years	$3,533	$3,834	$4,211
50s	All	$3,122	$3,469	$3,687
	0–4 Years	$1,752	$2,190	$2,436
	5–10 Years	$2,831	$3,093	$3,327
	11–20 Years	$3,572	$3,848	$4,037
	21–30 Years	$4,000	$4,283	$4,577
	31+ Years	$3,617	$3,800	$3,933
60s	All	$3,488	$3,703	$3,797
	0–4 Years	$1,899	$2,259	$2,457
	5–10 Years	$3,062	$3,205	$3,406
	11–20 Years	$3,888	$4,066	$4,112
	21–30 Years	$4,334	$4,569	$4,679
	31+ Years	$4,365	$4,438	$4,495
All	**All**	$2,405	$2,778	$3,012

Figure 11 - Median Employee Contribution Amount, by Age and Tenure of Those Contributing

Age Group	Tenure Group	2019	2020	2021
20s	All	$511	$960	$1,161
	0–4 Years	$480	$878	$1,055
	5–10 Years	$1,257	$1,350	$1,454
30s	All	$1,188	$1,350	$1,485
	0–4 Years	$638	$1,030	$1,188
	5–10 Years	$1,450	$1,559	$1,656
	11–20 Years	$1,693	$1,797	$1,893
40s	All	$1,410	$1,598	$1,729
	0–4 Years	$650	$1,014	$1,154
	5–10 Years	$1,411	$1,514	$1,607
	11–20 Years	$1,922	$2,035	$2,123
	21–30 Years	$2,080	$2,171	$2,299
50s	All	$1,515	$1,695	$1,779
	0–4 Years	$709	$1,040	$1,165
	5–10 Years	$1,333	$1,428	$1,499
	11–20 Years	$1,785	$1,881	$1,895
	21–30 Years	$2,123	$2,237	$2,310
	31+ Years	$2,080	$2,149	$2,191
60s	All	$1,421	$1,525	$1,560
	0–4 Years	$648	$910	$998
	5–10 Years	$1,220	$1,272	$1,309
	11–20 Years	$1,677	$1,750	$1,709
	21–30 Years	$1,927	$2,025	$2,040
	31+ Years	$2,093	$2,136	$2,169
All	**All**	$1,222	$1,392	$1,520

Figures 12 and 13 present the average employee contributions as a percentage of annual salary.[4] The contribution rates suggest that age and tenure have a weaker impact on the contributions as a percentage of salary relative to the contributions in dollar amounts. For instance, the average contribution made by participants in their 40s as of 2021 was $3,177, which is almost twice the average contribution made by participants in their 20s. However, the average contribution as a percentage of salary in 2021 for participants in their 40s was 7.0 percent, which is only 1 percentage point higher than the contribution made by those in their 20s (6.1 percent) (Figure 12). This analysis likely reflects the fact that participants' salaries increase with age and tenure. Additionally, the average contribution increased among those who contributed for each age/tenure grouping from 2019–2021, matching the pattern of the average dollar amounts contributed.

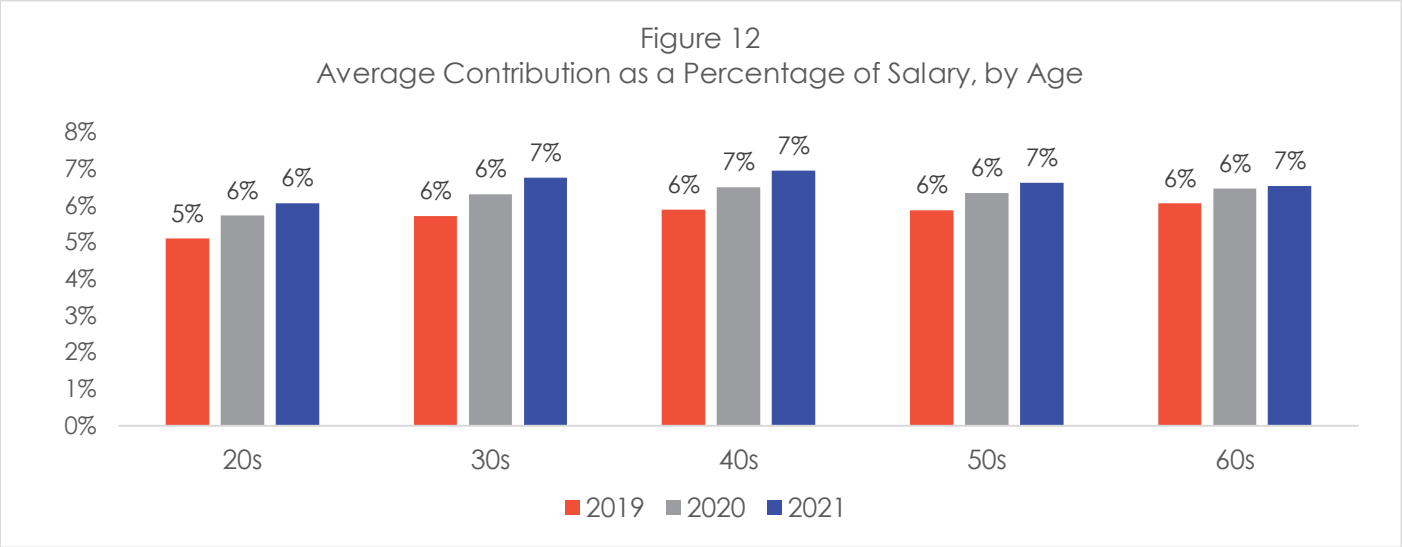


Figure 13 - Mean Employee Contribution Amount as a Percentage of Salary of Those Contributing

Age Group	Tenure Group	2019	2020	2021
20s	All	5.1%	5.7%	6.1%
	0-4 Years	4.9%	5.5%	5.9%
	5-10 Years	6.5%	7.0%	7.5%
30s	All	5.7%	6.3%	6.8%
	0-4 Years	5.4%	6.0%	6.3%
	5-10 Years	6.2%	6.8%	7.3%
	11-20 Years	5.8%	6.3%	6.8%
40s	All	5.9%	6.5%	7.0%
	0-4 Years	5.0%	5.7%	6.0%
	5-10 Years	6.0%	6.6%	7.1%
	11-20 Years	6.3%	6.9%	7.4%
	21-30 Years	6.3%	6.9%	7.5%
50s	All	5.9%	6.4%	6.6%
	0-4 Years	5.3%	5.8%	6.1%
	5-10 Years	6.2%	6.8%	7.2%
	11-20 Years	6.1%	6.7%	6.8%
	21-30 Years	6.1%	6.6%	7.0%
	31+ Years	5.1%	5.4%	5.5%
60s	All	6.1%	6.5%	6.5%
	0-4 Years	5.5%	5.9%	6.1%
	5-10 Years	6.4%	6.8%	7.1%
	11-20 Years	6.5%	7.1%	6.9%
	21-30 Years	6.1%	6.4%	6.7%
	31+ Years	5.5%	5.7%	5.8%
All	**All**	5.8%	6.4%	6.7%

Figure 14 - Median Employee Contribution Amount as a Percentage of Salary of Those Contributing

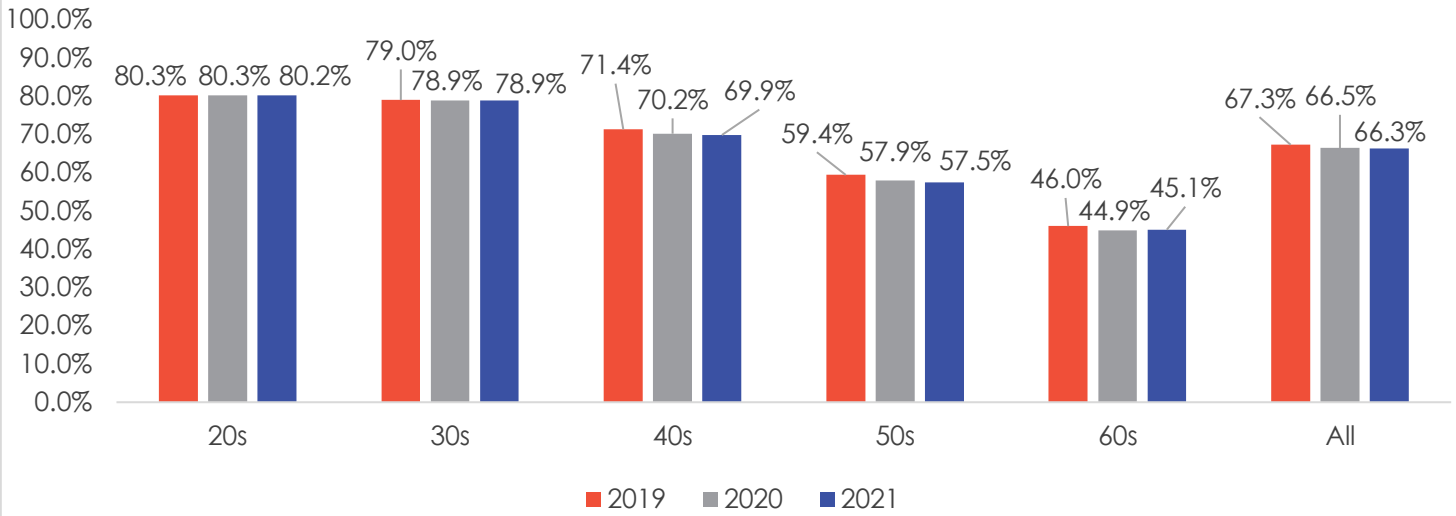
Age Group	Tenure Group	2019	2020	2021
20s	All	3.4%	3.6%	3.8%
	0-4 Years	3.4%	3.6%	3.8%
	5-10 Years	4.4%	4.2%	4.4%
30s	All	3.7%	3.9%	4.0%
	0-4 Years	3.6%	3.7%	3.8%
	5-10 Years	4.4%	4.4%	4.4%
	11-20 Years	3.7%	3.9%	4.0%
40s	All	3.7%	3.9%	4.0%
	0-4 Years	3.4%	3.6%	3.7%
	5-10 Years	4.0%	4.2%	4.2%
	11-20 Years	4.3%	4.5%	4.3%
	21-30 Years	3.7%	3.9%	4.1%
50s	All	3.5%	3.7%	3.7%
	0-4 Years	3.4%	3.5%	3.6%
	5-10 Years	4.1%	4.1%	4.1%
	11-20 Years	3.8%	3.9%	3.8%
	21-30 Years	3.5%	3.7%	3.8%
	31+ Years	3.3%	3.4%	3.5%
60s	All	3.6%	3.7%	3.7%
	0-4 Years	3.4%	3.5%	3.6%
	5-10 Years	4.1%	3.9%	3.8%
	11-20 Years	4.0%	4.2%	3.8%
	21-30 Years	3.5%	3.7%	3.7%
	31+ Years	3.3%	3.4%	3.5%
All	**All**	3.6%	3.8%	3.9%

ASSET ALLOCATION

In this report, the investment options are grouped into six broad asset classes: equity funds, balanced funds, target-date funds, bond funds, stable-value funds, and other (which includes real estate investments, in-plan annuities, and investments that cannot be classified).

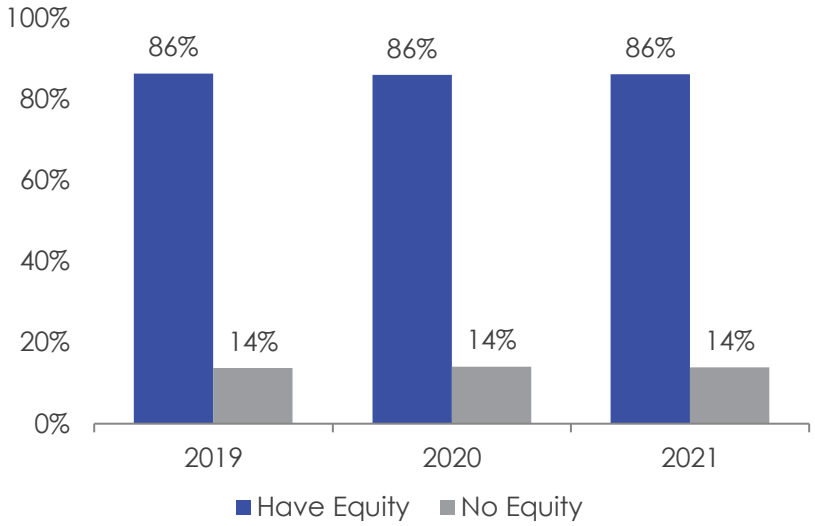
The average equity exposure of all age groups decreased by 1 percentage point from 2019 (67.3 percent) to 2021 (66.3 percent). This decline in total equity exposure was concentrated in participants in their 40s, 50s, and 60s (Figure 15).

Figure 15
Average Equity Exposure, by Age



Between the years 2019 and 2021, more than 86 percent of consistent plan participants had at least some exposure to equities in their retirement plans (Figure 16). This exposure was through equity funds, the equity portion of target-date funds, or the equity portion of non-target-date balanced funds. The share of consistent participants who held at least some equities in their retirement plans remained similar between year-end 2019 and year-end 2021.

Figure 16
Mean Allocation to Investment Category, by Age



As the age of participants increased, the allocation to equity funds increased, peaking for those in their 40s (Figure 17). For instance, the average allocations to equity funds for participants in their 20s, 30s, and 40s were 17.8 percent, 27.7 percent, and 36.1 percent, respectively. However, the share in equities decreased among participants in their 50s (35 percent) and 60s (28.5 percent). On the other hand, the average allocation to target-date funds decreased as the age of participants increased, while the allocation to stable-value funds increased with age. For example, the average allocation to target-date funds among participants in their 20s was 67.1 percent in 2021, compared with 29.4 percent among participants in their 60s. The average allocation to stable-value funds among participants in their 20s was 7.6 percent, compared with 27.2 percent among participants in their 60s.

These patterns by age held true across the three years studied, as the average allocation for the different fund classes remained stable. For example, the average allocation to target-date funds of those in their 20s in 2019 was 68.6 percent. By 2021, this percentage was 67.1 percent. In addition, the average allocation of those in their 60s to stable-value funds hovered around 27 percent in each of the three years.

Figure 17 – Mean Allocation to Investment Category, by Age

2019						
Age Group	**Equity Funds**	**Balanced Funds**	**Target-Date Funds**	**Bond Funds**	**Stable-Value Funds**	**Other**
20s	16.4%	0.2%	68.6%	6.9%	7.8%	0.0%
30s	26.0%	0.8%	56.8%	6.8%	9.6%	0.1%
40s	35.2%	1.3%	40.6%	9.2%	13.6%	0.2%
50s	34.9%	1.8%	33.8%	10.8%	18.7%	0.2%
60s	28.5%	2.3%	31.1%	11.1%	27.0%	0.2%
All	29.6%	1.3%	44.2%	9.0%	15.8%	0.2%

2020						
Age Group	**Equity Funds**	**Balanced Funds**	**Target-Date Funds**	**Bond Funds**	**Stable-Value Funds**	**Other**
20s	17.0%	0.3%	67.9%	7.0%	7.7%	0.2%
30s	26.4%	1.1%	56.2%	6.7%	9.1%	0.6%
40s	35.0%	1.7%	40.0%	9.5%	13.1%	0.9%
50s	34.2%	2.3%	33.2%	11.2%	18.3%	1.2%
60s	27.7%	2.9%	30.2%	11.4%	26.6%	1.5%
All	29.5%	1.7%	43.6%	9.2%	15.4%	0.9%

2021						
Age Group	**Equity Funds**	**Balanced Funds**	**Target-Date Funds**	**Bond Funds**	**Stable-Value Funds**	**Other**
20s	17.8%	0.3%	67.1%	7.1%	7.6%	0.2%
30s	27.7%	1.2%	54.9%	6.8%	9.2%	0.4%
40s	36.1%	1.9%	38.9%	9.4%	13.4%	0.6%
50s	35.0%	2.5%	32.2%	11.1%	18.9%	0.7%
60s	28.5%	3.1%	29.4%	11.3%	27.2%	0.9%
All	30.5%	1.8%	42.6%	9.2%	15.6%	0.6%

As shown in Figure 17, target-date funds (TDFs) are a common investment option among these participants. Target-date funds automatically rebalance away from equities and toward fixed income investments as a "target date" approaches, which reduces the need for a participant to rebalance their portfolio. Target-date funds are aimed at participants who do not have time or knowledge to make investment decisions. Figures 18 and 19, below, analyze the behavior of participants who, as of 2019, either (a) held a portfolio consisting entirely of TDFs or (b) held a portfolio with no allocation to TDFs.[5]

In 2019, 38.8 percent of the consistent sample participants allocated their entire portfolio to target-date funds. In 2021, 94.3 percent of these participants were still fully allocated to TDFs. Among the remaining 5.7 percent of participants who did not remain fully allocated to TDFs in 2021, 66.2 percent had moved their assets to a combination of asset types, 14.2 percent had moved their entire balance to equities, and another 14.0 percent had moved their entire balance to balanced funds (Figure 18).

In 2019, 49.5 percent of participants had 0 percent of their portfolio allocated to TDFs. In 2021, 98 percent of those participants still had 0 percent allocation to TDFs. Of the remaining 2 percent, one-third of them had their entire portfolio in stable-value funds and 16 percent had their entire portfolio in equity funds in 2019 before reallocating to TDFs.

Figure 18
2021 Asset Allocations Among Individuals Who Held 100% TDFs in 2019 but Held <100% TDFs in 2021

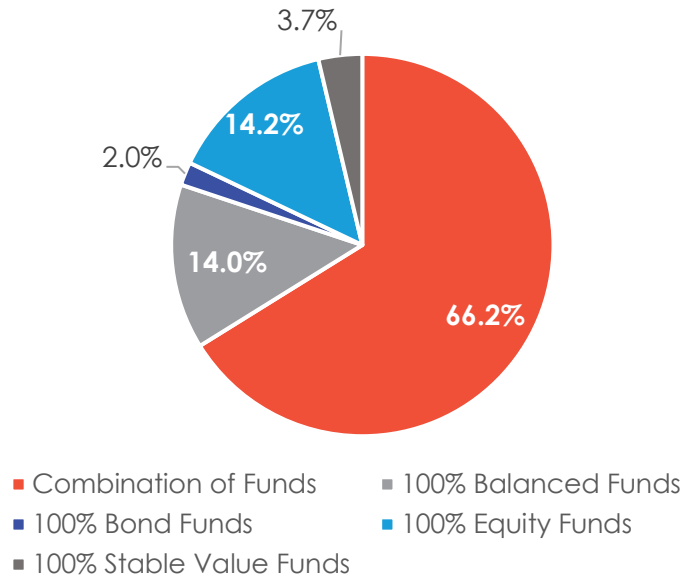
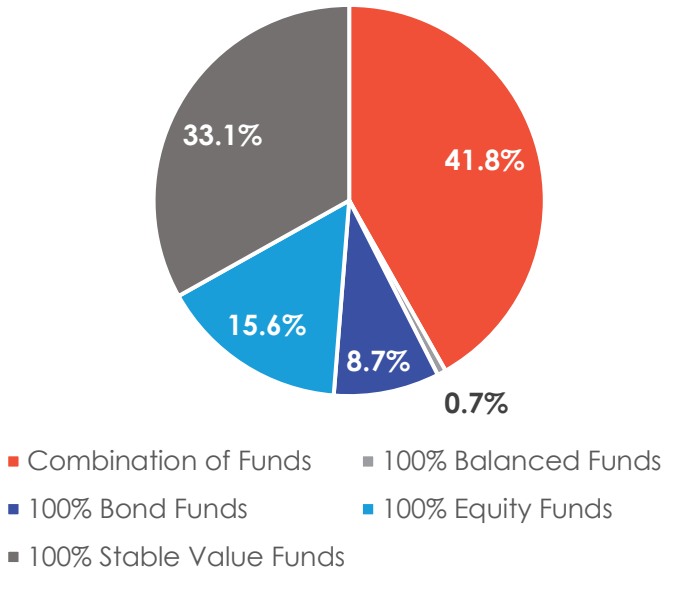


Figure 19
2019 Asset Allocations Among Individuals Who Held 0% TDFs in 2019 but Held >0% TDFs in 2021



CONCLUSION

This is the first longitudinal analysis of participants in the PRRL Database. The time period under study, 2019–2021, represents an interesting period of study of participants' retirement saving behaviors given the COVID-19 pandemic and subsequent economic uncertainty. Despite the pandemic, DC account balances and contributions were found to have steadily increased from 2019 to 2021. Moreover, account balances and contributions were also found to be higher among participants in older age groups with more tenure. The contribution rates as a percentage of annual salary also increased between 2019 to 2021 and were higher among participants in older age groups with more tenure. Despite similar patterns, age and tenure have a weaker impact on the contributions as a percentage of annual salary relative to the contributions in dollar amounts. This analysis likely reflects the fact that participants' salaries increase with age and tenure.

More than 86 percent of consistent plan participants had at least some exposure to equities in their retirement plans from 2019 to 2021, with younger participants having higher average total equity exposure than older participants. Younger participants also had a higher concentration of target-date fund allocations, while older participants had higher allocations to equity funds, bond funds, and stable-value funds. In 2019, 38.8 percent of the consistent sample participants allocated their entire portfolio to target-date funds. In 2021, 94.3 percent of these participants were still fully allocated to TDFs.

Among the participants who did not remain fully allocated to TDFs in 2021, two-thirds had moved their assets to a combination of asset types. These findings reflect the stability of target-date-fund utilization, so the choice of the default TDF is an important consideration for plan sponsors.

Although some participants stopped contributing due to employment termination, the plan sponsors need to understand why they stopped contributing and be aware of what individuals do after leaving employment for those who stopped for that reason. As account balances continue to grow, as shown in this study, plan sponsors should consider how the DC balances and DB plan benefits can better work together to improve workers' retirement security.

SAMPLE SELECTION CRITERIA

The 1.1 million participants analyzed in this report are a subset of all participants in the PRRL Database. These consistent participants had accounts at the end of each year from 2019 through 2021. Limiting the analysis to the set of consistent participants removes the effects of participants and plans entering and leaving the database. Information on all characteristics is not available for every participant (e.g., salary information is unavailable for most participants); each figure consists of the entire sample of individuals for which information is available on the factor(s) being studied.

The age and tenure cross-tabulations presented in this report are based on characteristics of the participants as of 2019 (the first year in the sample period). Thus, the age and tenure cross-tabulations should be interpreted as analyses of participant cohorts whose characteristics are fixed as of 2019.

Each cohort has some natural rate of job transitions, the extent of which may vary by cohort. While participants' ages necessarily increase year-over-year, their tenures with a given employer do not. If a participant continues with the same plan, then their tenure increases, but the participant's tenure may decrease if they switch jobs and transfer their retirement assets to another public-sector employer who participates in the PRRL Database.

ABOUT PRRL

The Public Retirement Research Lab is a retirement-industry-sponsored collaborative effort of the Employee Benefit Research Institute (EBRI) and the National Association of Government Defined Contribution Administrators (NAGDCA). The PRRL analyzes data from its Public Retirement Research Database, the first-ever database specific to public-sector defined contribution data, to produce unbiased, actionable research aimed at enhancing understanding of the design and utilization of public-sector defined contribution retirement plans to better inform public plan design, management, innovation, and legislation. To learn more, visit www.prrl.org.

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ENDNOTES

[1] See Gropper, Michael, "The State of Public Sector DC Plans: 2021", PRRL Research Study, (September 2023), available at https://www.prrl.org/uploads/1/4/0/1/140176219/prrl_study_the_state_of_dc_plans_2021-v2.pdf.
[2] Participants' accounts with defined contribution plan sponsors that do not participate in the PRRL are not included.
[3] Throughout this report, "average" and "mean" are used to refer to the arithmetic average, which is a measure of the "center" or "typical value" of a collection of data. The median is an alternative measure of central tendency and is defined as the number such that half of the data points are above and half are below; the median is less sensitive to outlier observations than the mean.
[4] Analyses of contribution rates are limited to participants for whom salary information is available for all three years and are based on fewer participants than other analyses due to some recordkeepers not having or not providing salary information. The pattern in the amount of dollars contributed by age and year in the sample with salary information was similar to that of the overall sample. Thus, despite the sample with salary information being smaller, the results on contribution rates being more similar across ages than were the dollar amounts contributed should be reflective of the overall sample.
[5] Figures 18 and 19 do not take into consideration whether or not a participant has a TDF available in their menu of investment options or whether or not a TDF is the default investment option. The figures do not include participants whose 2019 TDF allocation was more than 0 percent but less than 100 percent.