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THE STATE OF PUBLIC SECTOR DC PLANS: A FIRST LOOK AT THE PRRL DATABASE

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Key Findings

ACCOUNT BALANCES

- Mean account balances for public plan participants in their 60s reach just over \$96,000; median account balances top out at nearly \$32,000.

CONTRIBUTIONS

- Mean employee contributions for participants in their 60s reach nearly \$3,900 annually; median contributions just over \$1,300 annually.

LOANS

- Loan use peaks at 7.3% for public plan participants in their 40s.
- The average loan as a percentage of account balance reaches 19% for those in their 60s.

ASSET ALLOCATIONS

- The use of target-date funds is significantly higher by participants in their 20s (~63%).
- The use of stable value products increases steadily as plan participants approach retirement age, reaching 29% by participants in their 60s.

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INTRODUCTION

Public sector retirement research has largely focused on the defined benefit (DB) pension plan as the sole source of retirement income for state and local government employees. Public sector defined contribution (DC) plans, consisting of IRS code 457(b), 401(a), 401(k), and 403(b) plans, have traditionally garnered less attention and are, as a result, less understood.

There are two primary reasons for this lack of attention. First, state and local governments have maintained DB plans in far greater percentage than their private sector peers, making it understandable that the bulk of public sector research has not shifted toward DC plans as it has in the private sector. However, public sector DB research is often framed around pension system health, usually expressed in terms of plan funded status, and often neglects the topic of retirement readiness of public sector employees.

Second, public sector DC data is difficult to aggregate. Unlike private sector plans, public DC plans are packaged in an incredibly diverse variety of structures. A single government can have any or all of the IRS codes identified here available for their employees. Public plans also have a far higher prevalence of the use of multiple record keepers for their plans, which leads to a fragmented picture of the total retirement assets for any single participant.

The Public Retirement Research Lab (PRRL) was created specifically to address the significant lack of attention to and understanding of the role of public sector DC plans in helping public sector employees adequately prepare for a secure retirement.

This need is more urgent now than at any time in the past. According to our colleagues at the National Association of State Retirement Administrators (NASRA), "Since 2009, every state has made meaningful changes to their pension plan benefit structures, financing arrangements, or both."¹ Newer pension tiers are often less generous, and a substantial number of state and local government employees are not covered by Social Security. Both of these factors increase the importance of DC savings.

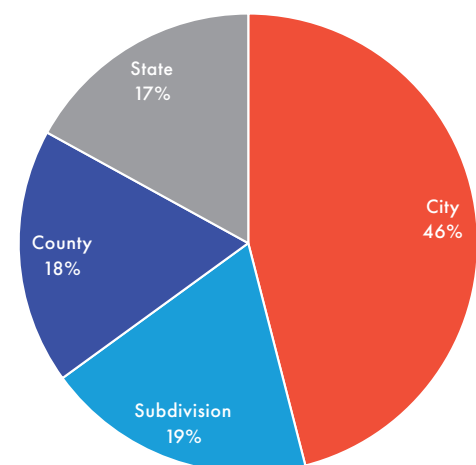
The creation of the PRRL and analysis of the data contained in the Public Retirement Research Database are the first steps in a long journey toward overcoming this lack of necessary insight to effectively address public sector employee retirement preparedness.

THE PUBLIC RETIREMENT RESEARCH LAB DATABASE

The PRRL Database is the repository for the data collected by the PRRL. Plan- and participant-level data is transferred from record keepers on behalf of plan sponsors that positively affirm their interest in participating in the PRRL; no data is transferred without their consent.

The opening PRRL Database contains year-end 2019 data for 213 457(b), 401(a), 403(b), 401(k), and other defined contribution plans; nearly 2.3 million state, county, city, and subdivision government employees; and \$113 billion in assets. The overall composition of participating plans is shown in Figure 1. While the number of governments participating in the dataset appears small when measured against the thousands of state and local government entities in the United States, it is important to note that many state plans serve as the primary DC vehicle for lower-level governments within their respective states. The state plans in the PRRL Database represent as many as 1,800 participating employers, even though they are counted as a single plan.

Figure 1
PRRL Database Universe



¹ <https://www.nasra.org/pensionreform>

METHODOLOGY

To demonstrate the complexity of public DC plan system structures, this initial assessment of the PRRL Database consists of four distinct categories of DC plan use (account balances, contributions, loans, and asset allocation) filtered through the lens of two different types of data analysis.

One method of analysis, consistent with NAGDCA's past efforts through its Annual Benchmarking Survey, is a description of the four categories by plan type. While this method provides an incomplete picture of retirement readiness at the participant level, as it does not include participant use of multiple plan types, it remains an essential contribution to administrators' understanding of public DC plan use.

The second method of analysis combines all participant-level data across record keepers and plan types. This aggregation of total DC assets at the participant level is an important innovation, exclusive to the PRRL, that provides an unprecedented opportunity to understand public sector employees' retirement readiness.

PARTICIPANT DEMOGRAPHICS AND ASSETS BY PLAN

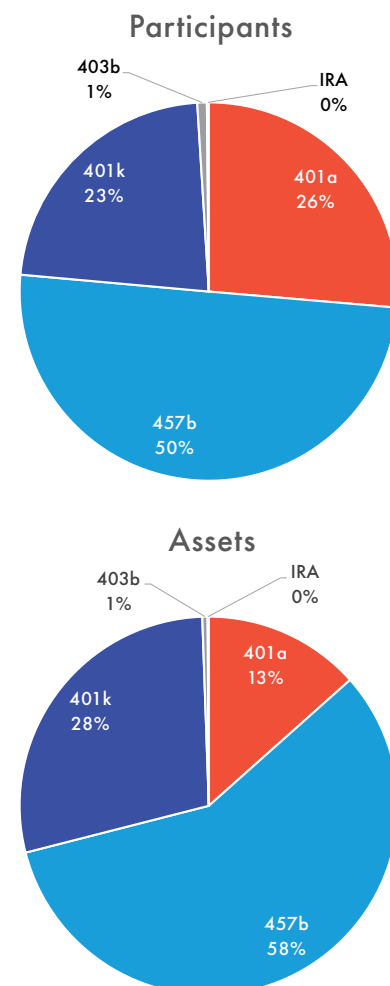
Figure 2 shows the representation of different plan types by both number of participants and plan assets. The most common plan in the PRRL Database by both measures is the 457(b) plan. 457(b) plans are typically used in the public sector as voluntary supplemental savings vehicles in conjunction with a DB pension, though this is not always the case.

Conversely, 401(a) plans represent about one quarter of the total participants in the PRRL Database, but only about 13% of the total assets. One potential explanation for this difference is the increased use of 401(a) plans as a hybrid vehicle in a DB/DC or cash balance pension in newer pension tiers, possibly indicating that while more newly hired employees are enrolled in the plans, they have yet to accumulate significant assets in them.

Non-ERISA 401(k) plans also represent about one quarter of the PRRL Database, and the measure is consistent across both participants and assets. 401(k) plans in the public sector are dissimilar from their private sector counterparts in that they are legacy accounts; only those established prior to 1986 continue to operate.

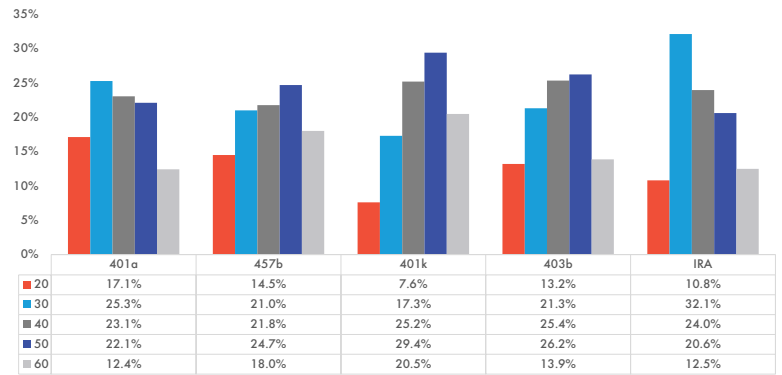
Finally, a small number of 403(b) and IRA plans are represented in the initial PRRL Database dataset. 403(b) plans are often used by public educational institutions (higher education or K-12) and hospitals. A large percentage of public DC assets are held in 403(b) plans, offering a significant area for potential growth of the PRRL Database. IRAs, also called Deemed IRAs, are separate, in-plan retirement accounts for employees that follow IRA guidelines. They are less common than other plan structures and do not represent a significant segment of the PRRL Database.

Figure 2
Participants and Assets by Plan Type



The age distribution of public sector employees described in Figure 3 further illuminates the underlying characteristics of each plan type. 401(a) plans, and to a lesser extent IRAs, are becoming increasingly common in newer pension tiers and show a skewed distribution toward younger workers, as would be expected. Conversely, plan types more historically used in the public sector (e.g., 457(b), 403(b), 401(k)) all skew in the opposite direction, with the most frequent use by the 50s age cohort.

Figure 3
Participants and Assets by Plan Type



TOTAL ASSETS

While knowledge of the use of different DC plan types in the public sector is critical to plan administrators, looking at each plan separately does not advance the understanding of retirement readiness for public sector employees.

The data in Figure 4 represents a landmark shift in that understanding. For the first time, these data are representative of total DC assets for public employees in aggregate. Again, the distinct method employed by the PRRL to acquire data and combine it at the participant level creates a picture previously unavailable to researchers and practitioners in public sector retirement.

The mean and median account balances in Figure 4 are combined across all plan types and record keepers in the database. Nearly 21% of participants have money in more than one type of plan, with breakdowns by plan type depicted in Figure 5. These combinations come in many different varieties, too numerous to list for the purposes of this assessment. However, some participants in the database held assets in as many as four different DC plans.

Figure 4
Mean and Median Account Balance by Age for All Plan Types Combined

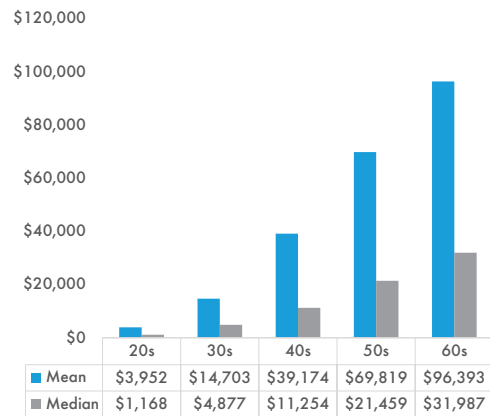
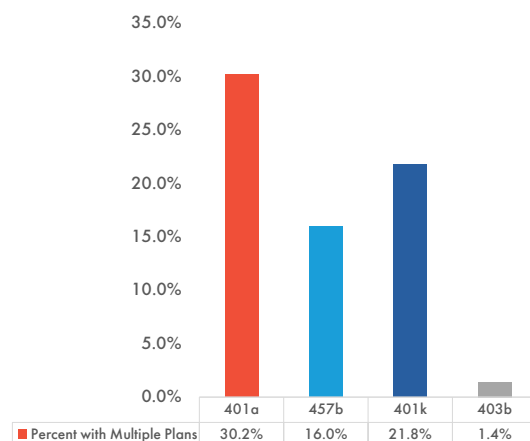


Figure 5
Percent of Participants with Multiple Plans by Primary Plan Type



As shown, there's a considerable difference in the mean and median measures. The mean is the arithmetic average of a distribution (the sum of sampled values divided by the number of items in the sample). It is a commonly used measure of central tendency, but best suited for normal distributions, not those heavily influenced by outliers. The median is a numeric value computed by listing all the numbers in ascending order and locating the number in the center of a distribution. It is better suited for deriving a more robust central tendency from skewed distributions such as this.

The findings are further broken down in Figure 6 to show average account balance by both age and tenure. Tenure calculations are inherently difficult to represent accurately. For this study, tenure is defined as the time an employee spends in their current job. A potential shortcoming of these calculations is tracking an employee as they change jobs. For example, if a teacher leaves one district for another in the same state, but continues to participate in the state 457(b) plan, PRRL analysis would show a break in tenure. However, as shown in previous PRRL research², public sector workers tend to stay in their jobs longer than their private sector counterparts, mitigating some of the potential shortcomings associated with tenure-based calculations.

Ultimately, the ability to aggregate public sector DC data enables the closest comparison with the private sector data available to date (Figure 7). The accumulated DC savings for public employees in Figure 6 clearly lags the comparable data from 2016 for private employees in Figure 7 in nearly every category of age and tenure. These results are expected for one primary reason: DB plans remain the primary retirement vehicle for most public sector employees.

As such, to clearly show the retirement readiness of public sector employees, DB pension assumptions must be included. Further, public sector employees from 14 states do not participate in Social Security, which must also be accounted for. Both items will be incorporated in future PRRL research to provide a comprehensive understanding of retirement readiness for the public employee.

Figure 6
Average Account Balance by Age and Tenure

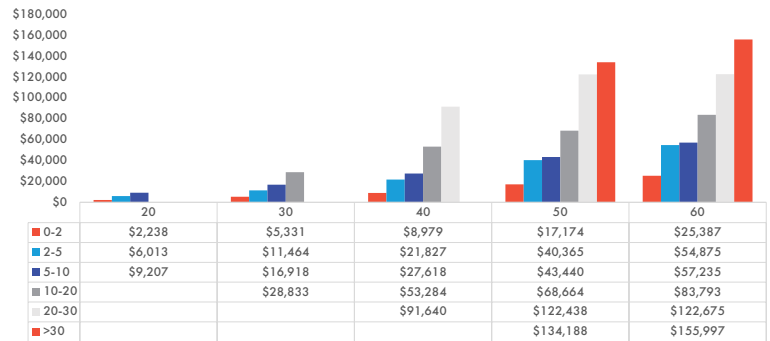
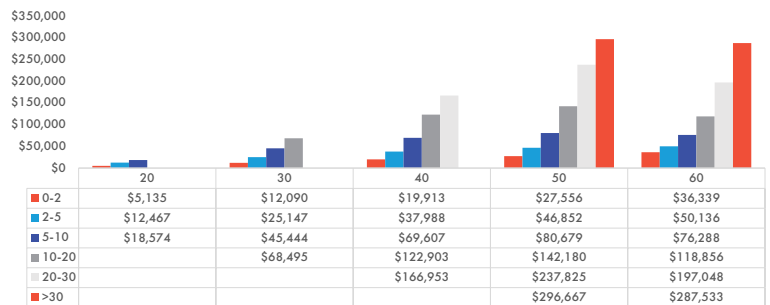


Figure 7
Average Account Balance by Age and Tenure - Private 401(k) Plans



Source: Jack VanDerhei, Sarah Holden, Luis Alonso, and Steven Bass. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2016." EBRI Issue Brief, no. 458, and ICI Research Perspective, Vol. 24, no. 6 (September 2018).

² https://www.ebri.org/docs/default-source/prrl/study-snapshots-t/01-ssi-tenure_21may2020.pdf

ACCOUNT BALANCE BY PLAN TYPE

The data in Figures 8–11 show the average account balances for participants in each plan type by tenure quartile (quartiles are defined as <3, 3-7, 7-17, and >17 years). While each plan type has distinct characteristics, accumulated assets rise with age and tenure as expected. The average account balances for 403(b) plans appear to be significantly different from those of other plans, which could be the result of the limited sample size for these plans in the PRRL Database.

Figure 8
Average Account Balance by Age and Tenure Quartile - 457(b) Plans

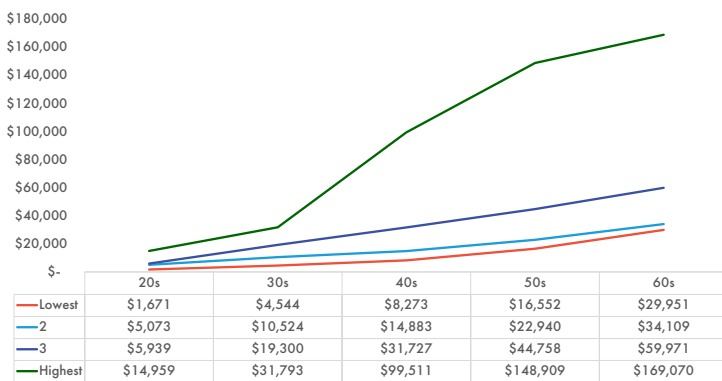


Figure 9
Average Account Balance by Age and Tenure Quartile - 401(k) Plans

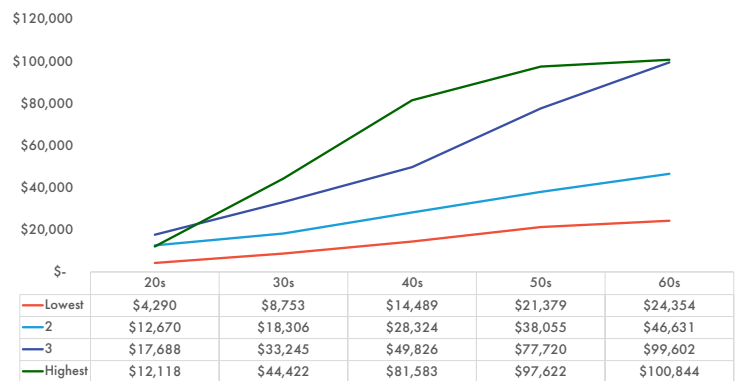


Figure 10
Average Account Balance by Age and Tenure Quartile - 401(a) Plans

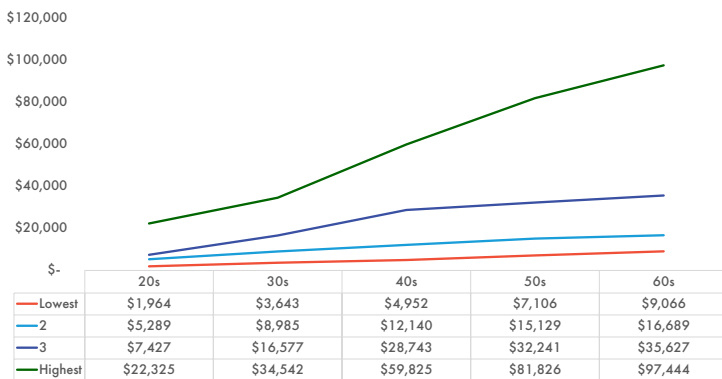
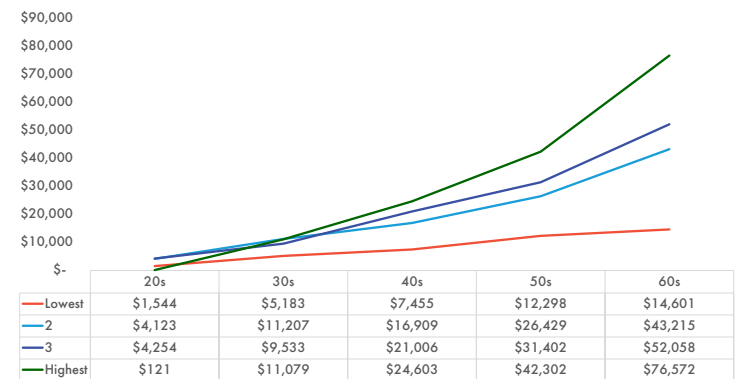


Figure 11
Average Account Balance by Age and Tenure Quartile - 403(b) Plans

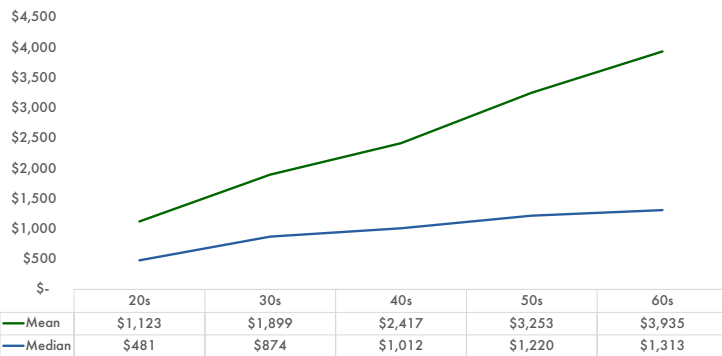


CONTRIBUTIONS BY PLAN TYPE

Figures 12 and 13 show the dollar amounts contributed by employees to their plans by age. Again, these data are aggregated to show total contributions across all DC plans, per participant. As expected, contributions increase as employees approach retirement age. The data in Figure 13 represents a significantly smaller number of participants due to the dearth of salary data shared between governments and their DC plan record keepers. Many record keepers simply do not have salary information, making calculations of contribution rates impossible. Future datasets would be greatly aided by the inclusion of additional salary information.

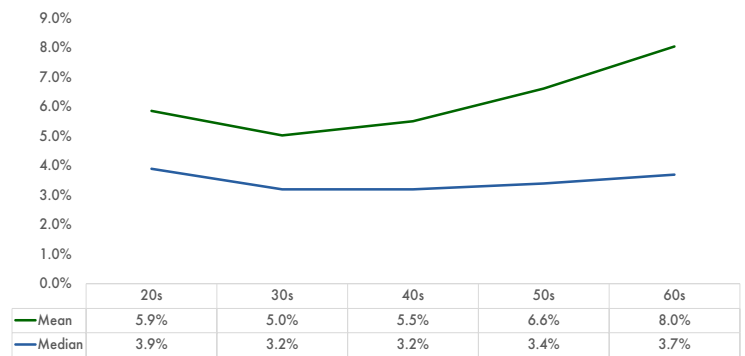
Contribution amounts and rates detailed in Figures 14 and 15 include any employer contribution. Distinct to the public sector, employers may have either mandatory contributions, voluntary contributions, or both. In hybrid pension structures a mandatory contribution is common, typically into an employee's 401(a) plan. Since employers often have mandatory contributions for the DB plan, voluntary employer contributions are far less common than in the private sector. When voluntary employer contributions are offered, often in the form of an employer match, they are typically to either 401(k) or 457(b) plans.

Figure 12
Mean and Median Employee Contributions by Age



Note: Excludes participants who did not make a contribution in 2019.

Figure 13
Mean and Median Employee Contribution Rate by Age



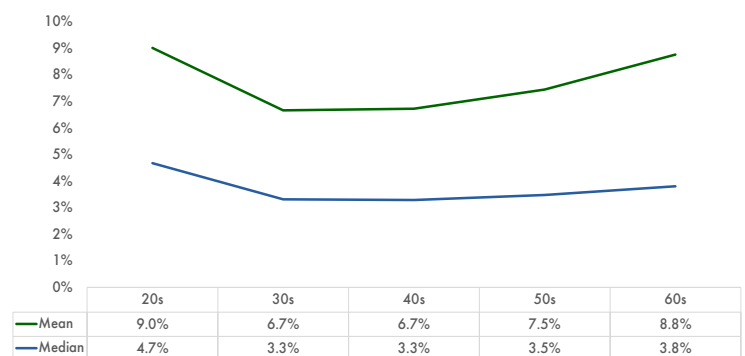
Note: Excludes participants who did not make a contribution in 2019 and those with salary < \$10,000.

Figure 14
Mean and Median Total Contributions by Age



Note: Excludes participants who did not make a contribution in 2019.

Figure 15
Mean and Median Total Contribution Rate by Age



Note: Excludes participants who did not make a contribution in 2019 and those with salary < \$10,000.

LOAN USE

The use of loans in public DC plans is shown in Figures 16–18. Offering loans is optional for plan sponsors, and many are cautious about allowing their participants early access to their retirement funds. However, many also recognize that unusual circumstances arise, and so offer loans as a source of emergency funds.

The percentage of participants who have an outstanding loan balance associated with any of their plans is shown in Figure 16, which reveals a peak of more than 7% for the 40s age cohort. While the percentage of participants with outstanding loan balances then begins to decrease, the average amount of the remaining loans in Figure 17 increases up to traditional retirement age. In a potentially worrying trend, the average loan amount as a percentage of account balance in Figure 18 continues to increase as well. Only 3% of the 60s age cohort have a loan, but for those who do, the balance, on average, equals nearly a fifth of their DC assets across all accounts.

Figure 16
Percent of Participants with a Loan Outstanding by Age

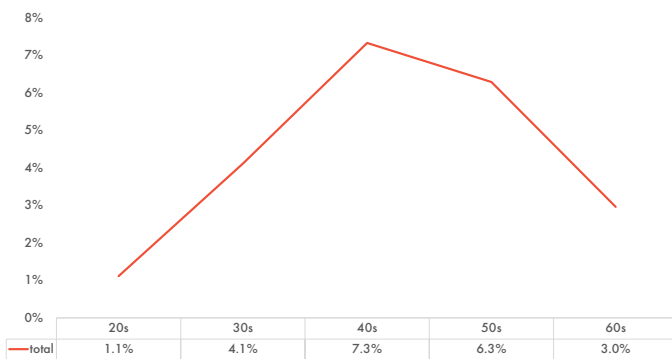
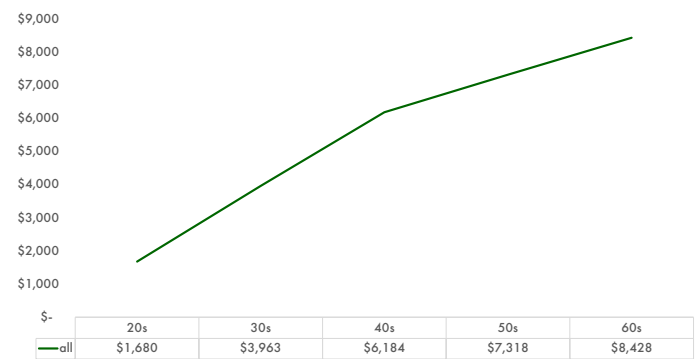
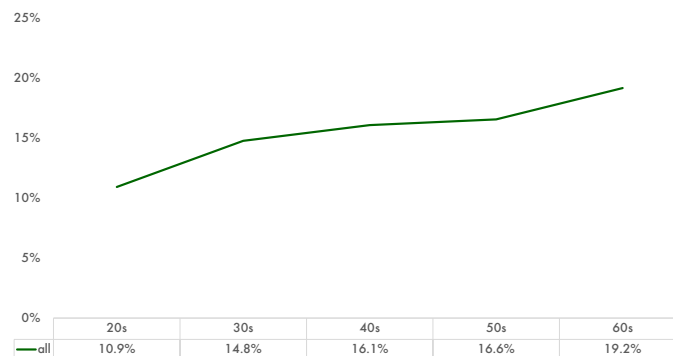


Figure 17
Average Amount of Loans by Age



Note: Excludes those with no loans.

Figure 18
Average Loans as Percentage of Account Balance by Age



Note: Excludes those with no loans.

ASSET ALLOCATION

Asset allocation is a critical component in understanding the retirement readiness of plan participants. As stated previously, the prior inability to aggregate public sector DC data at the participant level has prevented the development of a complete asset allocation picture for public sector employees. Figure 19 provides this aggregated view of public sector DC data for those plans participating in the PRRL.

Figure 19 also reveals allocations in line with behaviors demonstrated by private sector plan participants shown in Figure 20. Equity assets increase until the 40s age cohort, at which time allocations to safer assets, such as bonds, money market accounts, and stable value products, increase in cohorts approaching traditional retirement age. The use of target date funds is concentrated in younger cohorts, not because the products are not used by older employees, but because they represent a higher portion of the assets for new employees. Other products are used sparingly in the public sector, with company stock, obviously, not a factor.

The results in Figure 21, which are organized by tenure, provide similar insights, although equity allocations do not decrease in a similar manner for employees with longer tenure as they approach retirement age.

Figure 19
Asset Weighted Allocations by Age

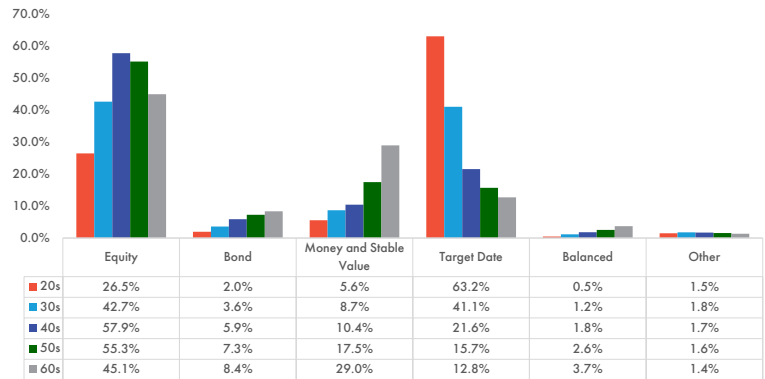
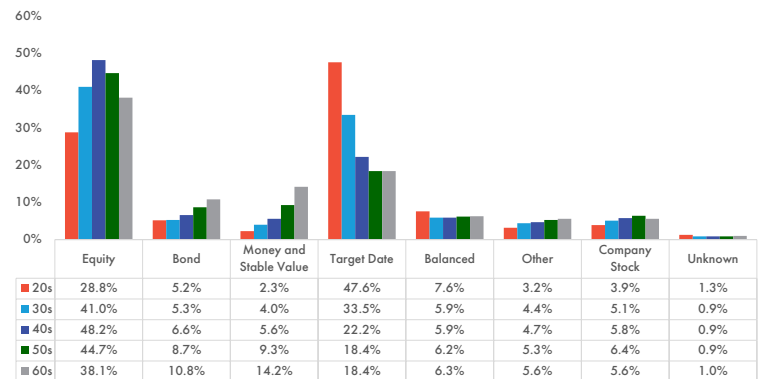
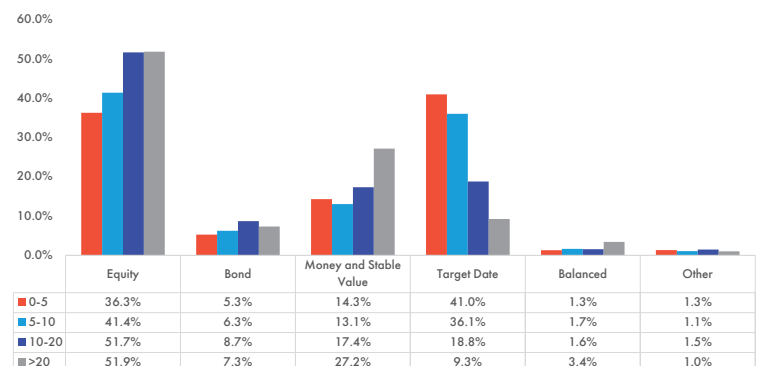


Figure 20
Asset Weighted Allocations by Age – Private 401(k) Plans



Source: Jack VanDerhei, Sarah Holden, Luis Alonso, and Steven Bass. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2016." EBRI Issue Brief, no. 458, and ICI Research Perspective, Vol. 24, no. 6 (September 2018).

Figure 21
Asset Weighted Allocations by Tenure



ASSET ALLOCATION BY DC PLAN TYPE

The four major asset categories in the dataset (equities, bonds, money/stable value, target date funds) are broken out by plan type in Figures 22–25. Participants in 401(a) plans allocated significantly fewer assets to stocks and bonds than participants in other plan types, and more to stable value products and target date funds overall. Much of this difference could potentially be explained by the nature of the different plan types. For example, many 401(a) plans are mandatory retirement vehicles with default investments of either stable value products or target date funds. This explains the higher use of these asset classes in such plans.

Figure 22
Asset Weighted Allocations to Equity by Age and Plan Type

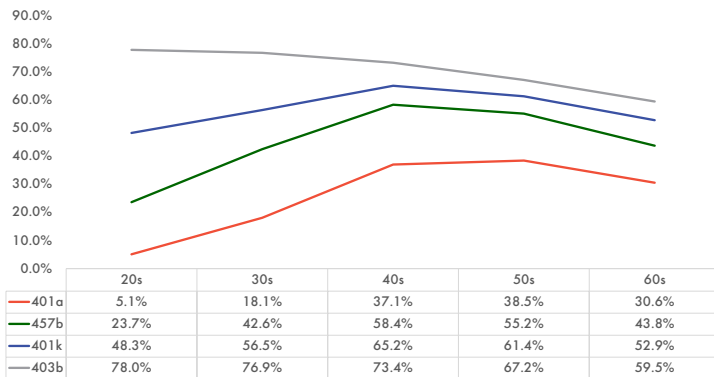


Figure 23
Asset Weighted Allocations to Bonds by Age and Plan Type

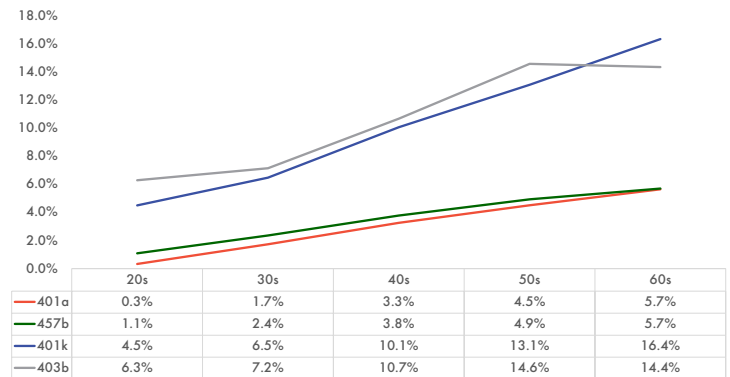


Figure 24
Asset Weighted Allocations to Money and Stable Value by Age and Plan Type

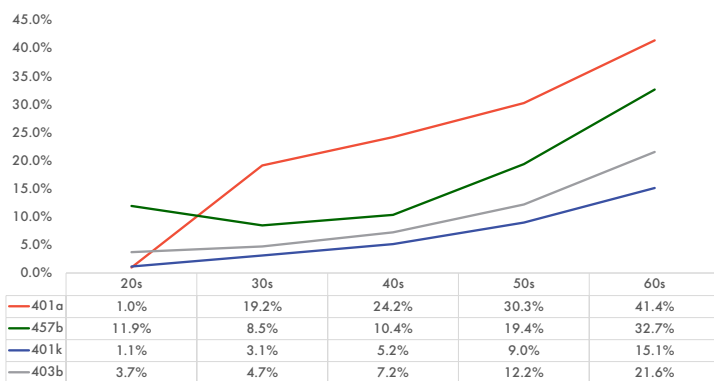
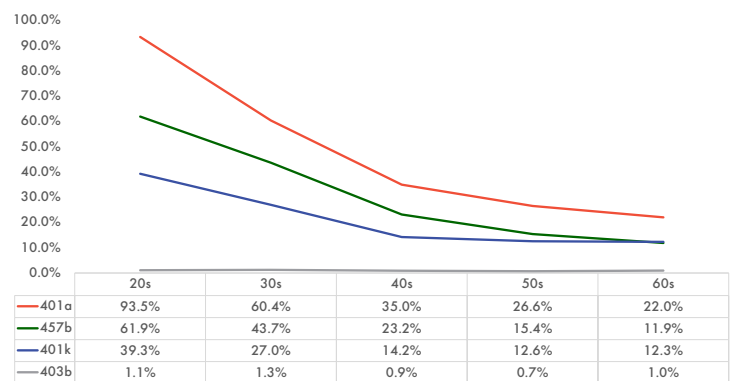


Figure 25
Asset Weighted Allocations to Target Date Funds by Age and Plan Type



CONCLUSION

The state of public sector DC plans is evolving. As DB pension reform continues, the importance of public sector DC plans will only increase. This inaugural analysis using the PRRL Database provides a baseline for tracking public sector DC plan evolution. Going forward, the PRRL will leverage the PRRL Database to identify trends in plan design as well as utilization. Further, the PRRL Database will inform PRRL analysis on the retirement income adequacy gaps faced by various public plan cohorts, as well as the potential impact on those gaps of potential policy, plan design, and product initiatives.

Much work remains in understanding how public employees use their DC plans. For example, this report does not address the differences between plans with mandatory DC pensions, voluntary supplemental retirement vehicles, or a combination of the two. A nuanced approach is necessary to parse the relevant information needed to accurately inform the work of plan practitioners, service providers, and policy makers. The PRRL is dedicated to employing such an approach, and future work will address each of these different aspects specifically. Additionally, in 2021 the PRRL will collect data on both standard loans and those associated with the CARES Act, to provide insight into public sector employees' use of DC assets for purposes other than retirement.

As the PRRL Database expands, it will create an even more comprehensive picture of various plan types, governments, and regional differences. The ultimate goal of the PRRL is to enable a financially secure retirement for the nation's public sector employees. The key to achieving this goal is the development of unbiased, actionable findings such as those contained in this report.

About PRRL

The Public Retirement Research Lab is a retirement industry-sponsored collaborative effort of the National Association of Government Defined Contribution Administrators ([NAGDCA](#)) and the Employee Benefit Research Institute ([EBRI](#)). The PRRL mines data from its Public Retirement Research Database, the first-ever database specific to public sector plan- and participant-level defined contribution data, to produce unbiased, actionable findings to better inform public plan design, management, innovation, and legislation. The overarching goal of the PRRL is to enhance understanding of the design and utilization of public sector defined contribution retirement plans as a means of helping public sector employees achieve a secure retirement. To learn more, visit www.prrl.org.

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