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# Where Are Households Spending Their Defined Contribution Plan Loans: An Examination of Public-Sector Participants

*By Craig Copeland, Michael Conrath, and Sharon Carson*


## AT A GLANCE

Workers' finances can face many challenges over their careers, potentially leading them to have to take on debt or find other sources of financing to cover the various financial challenges. This study builds on prior work done by the Employee Benefit Research Institute (EBRI) and J.P. Morgan Asset Management focused on defined contribution (DC) plan participants' behavior when faced with one specific financial challenge: irregular expenses. Specifically, changes in credit card utilization, DC plan contributions, and/or DC plan loan use were examined after these participants experienced a significant spending "spike." This analysis goes the next step to examine where participants who took a DC plan loan are spending that money. Key findings from this study include:

- In this sample of public-sector DC plan participants where a loan option is available, 10.9 percent took a loan during the year of interest. The likelihood of a participant taking a plan loan increased with age through the 50s then declined. Household incomes of $30,000 or above did not appear to have an impact on the likelihood of a plan loan being taken, as the percentage taking a loan in each income group was in the 10–11 percent range, and once the account balance reached $10,000, the likelihood of taking a loan was similar through balances of $100,000 or more. The percentage who took a loan increased substantially with credit card utilization, as 6.9 percent of participants in households with no outstanding credit card balances took a loan compared with 19.8 percent of those who had outstanding credit card balances equivalent to 80–100 percent of their credit card limits.

- DC plan participants in households with higher credit card usage had lower average contribution rates across all ages except for those ages 60 or older. For example, for participants in their 50s, those from households with higher credit card utilization had an average contribution rate of 4.7 percent, compared with 5.6 percent for those with lower credit card utilization. As a result, participants in households with high credit card utilization had lower average account balances.

- Among those with a new DC plan loan, health care spending was the most likely to have increased, as 58.5 percent of households where a participant took a loan saw their spending on health care increase by more than 10 percent in the year they took the loan. This was followed by travel (22.4 percent), entertainment (19.0 percent), and non-specified cash spending (18.9 percent). Comparing the spending increases by categories with those who did not take a loan, only health care spending showed a higher likelihood of having increased by more than 10 percent among those taking loans. Otherwise, spending changes were very similar between households with or without a plan loan.

- Loan usage increased among those with higher credit card utilization, which would be an indicator of households being more likely to be financially stressed. Spending increases on health care were more prevalent among the financially stressed households whose plan participants were ages 50 or older, as 63.3 percent of the households where a loan was taken had this increase compared with 56.8 percent of the households where a loan was not taken.

- In an alternative test, the share of total spending that each category represented was compared between the year prior to the loan incidence and the loan year to see if any category spending share increased by more than 5 percentage points. The spending categories most likely to have seen an increase in their share of total spending of this size were unspecified cash spending (24.9 percent of the households), health care (23.3 percent), and housing (21.0 percent).

- Only housing spending and unspecified cash spending had higher likelihoods of share increases for those taking a loan vs. those who did not. Otherwise, the likelihoods of the changes in the shares of spending in each of the other categories were either similar between the households or less for the households with a participant taking a plan loan.

- Households who started mortgage payments in the year of the loan incidence analysis were more likely to have taken a plan loan than those who did not start mortgage payments in that year — 15.6 percent vs. 10.7 percent. This was true for households with plan participants of all ages. Looking at this correlation in the opposite direction, the percentage of those having a new mortgage given that they had taken a plan loan was 5.8 percent, compared with 3.8 percent starting a new mortgage when they had not taken a plan loan. Again, a higher likelihood of starting a new mortgage for those who had taken a plan loan was found across all ages. Regardless of whether the household took a plan loan, when a new mortgage was started, the probability of having an increase in housing spending of more than 10 percent was significantly higher. For example, 60.0 percent of those who took a plan loan and started a new mortgage had a housing spending increase compared with just 6.6 percent of those without a new mortgage but having a new plan loan.

This research, like prior J.P. Morgan/EBRI studies, found that higher debt can have a long-lasting impact on retirement security, since higher credit card utilization is correlated with lower DC plan contributions and account balances. Thus, the availability of emergency savings to help cover expenses can be a critical factor in preventing or stalling a cycle of increasing debt that can significantly impact retirement readiness, wherever the individual works. Furthermore, the finding that many participants have spending increases on health care when taking a plan loan suggests that examining the health insurance available to DC plan participants could also help improve finances, showing the intersection of health and wealth. While not an emergency expense, another common reason for taking a plan loan is buying a home, which is typically a household's largest investment. A plan loan can help reduce the borrowing costs of a home purchase or even make the home purchase possible.

Craig Copeland is Director of Wealth Benefits Research at the Employee Benefit Research Institute (EBRI). Michael Conrath is the Chief Retirement Strategist and Head of the Retirement Insights Strategy Team for J.P. Morgan Asset Management. Sharon Carson is a Retirement Strategist on the J.P. Morgan Asset Management Retirement Insights Strategy team. This *Issue Brief* was written with assistance from the Institute's research and editorial staff. Any views expressed in this report are those of the authors, and should not be ascribed to the officers, trustees, or other sponsors of EBRI, EBRI-ERF, or their staff. Neither EBRI nor EBRI-ERF lobbies or takes positions on specific policy proposals. EBRI invites comment on this research.

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## Introduction

Workers' finances can face many challenges over their careers including irregular expenses, buying a new home, or financing higher education. All of these events can lead workers to have to take on debt or find other sources of financing for them. In some cases, workers' only source of significant savings is an employment-based retirement savings plan, typically a 401(k) plan or other defined contribution (DC) plans. Thus, some DC plan participants could take a loan from their plan, while others could access credit outside of a plan or use some combination of the two. Balancing these decisions is a key component of participants' financial wellbeing.

This study builds on prior work done by the Employee Benefit Research Institute (EBRI) and J.P. Morgan Asset Management focused on DC plan participants' behavior when faced with irregular expenses.[1] Specifically, changes in credit card utilization, DC plan contributions, and/or DC plan loan use were examined after these participants experienced a significant spending "spike." This analysis goes the next step by examining where participants who took a DC plan loan are spending that money.

Although DC plan loans are a source of leakage from retirement savings if they are not paid back in full when a participant leaves their employer, they do provide flexibility that can lead to higher participation and contributions.[2] As a result, plan loans are an option in some public-sector DC plans. Results from the Public Retirement Research Lab (PRRL) Database cross-sectional studies show the incidence of loans and the loan amounts across specific participant demographic factors but not in regard to the participants' overall finances or potential reasons for taking the loans.[3]

The analysis presented here, which links public-sector DC plan data and banking data, builds on the cross-sectional PRRL results and the evaluation of the impact of financial factors outside of the DC plan, such as overall spending levels and debt accumulation, on behavior inside the plan to see where the funds from the DC loans are spent.[4, 5] In this analysis, changes in spending amounts and the share of total spending on a specific spending category are calculated to see if any specific spending categories such as housing, health care, travel, or transportation increase when a loan is taken vs. prior to taking the loan.

This study is part of a joint effort between the Employee Benefit Research Institute (EBRI) and J.P. Morgan Asset Management to deliver data-driven research to better understand how the financial factors faced by defined contribution plan participants outside of these plans impact their retirement preparations. Thus, the aim is to provide unique, fact-based insights to help policymakers, plan sponsors, and plan providers build a stronger retirement system.

Specifically, public-sector DC plan participants who had taken a new plan loan are compared with those who did not take a new plan loan to see which spending categories experienced increases among those who took a plan loan that are different from those who did not take a loan. First, the sample of households is described, and the likelihood of DC plan loan incidence across various demographic characteristics is shown. For the households where the DC plan participant has taken a plan loan, any significant increases in spending in each of 12 categories or increases in the share of total spending that these categories represent are determined, including for certain demographic characteristics. The spending category increases are then compared with those of households whose DC participant did not take a plan loan to see where the households with DC plan loans differ. Finally, the effects of starting a new mortgage on DC plan loans and changes in housing spending are investigated.

## Data Sources

**PRRL Database** — The PRRL Database is an opt-in collaboration among public retirement plan sponsors, the Employee Benefit Research Institute (EBRI), and the National Association of Government Defined Contribution Administrators (NAGDCA). The database includes data from two hundred eighty-one 457(b), 401(a), 401(k), and 403(b) defined contribution (DC) plans of over 3 million state, county, city, and subdivision government employees with $168 billion in assets as of year-end 2022.[6]

**Chase Data** — JPMorgan Chase Bank, N.A. (Chase) serves 66 million U.S. households with a broad range of financial services including checking, savings, investments, credit cards, and loans. Chase's scale and wide reach allows for a comprehensive view of household finances. In this analysis, the Chase data sample is restricted to the households in 2021–2022 who use Chase as their primary banking institution, and their total household spending through all payment mechanisms (select credit and debit card transactions, electronic payment transactions, check and cash payments) and sources of income including wage income, Social Security, annuity, pensions, etc. can be linked to the PRRL Database. For more information about Chase, visit the following website: https://www.chase.com/digital/resources/about-chase.

**Data privacy is fully protected.** No personally identifiable information is contained within the data and all spending and saving attributes analyzed in this research are kept completely anonymous.[7]

## Longitudinal Sample Construction

In this study, spending and public-sector DC plan data from 2021–2022 at the household level are examined. In order to create this household view, the following steps were taken to merge the spending data from Chase and the public-sector DC plan data from the PRRL Database to create the full data sample:

1) Using the unique participant/customer identifier (not personally identifiable information) in each dataset, the individuals in both sets of data are established. These individuals with both the spending and the saving data are then grouped into households using Chase's method for determining members of a household.[8] The unit of observation in this study is the household. The number of people in these households may not truly reflect the exact household size, as the household size can only be approximated based on the number of unique individuals who have Chase accounts. As an example, if only one spouse has a Chase account, this will be considered a one-person household. This household unit observation necessitates the defining of specific data variables.

2) In order to ensure that the data sample only includes households where the Chase data have all or the majority of their spending, filters are applied to the households to meet the full (majority) spending criteria. These filters include but are not limited to: all 12 months of spending data, households with spending more than 50 percent of their estimated gross income, and households with credit card spending outside of Chase of less than 30 percent of their overall spending.[9]

3) Once these households are identified, at least one of the individuals in the household must also be a public-sector DC plan participant where a loan is available in their plan. The demographic and financial characteristics of the person identified as the DC plan participant in the household are those used in the analysis.

4) Since the status of many of the variables must be known at the beginning and the end of the study year, these households must have two contiguous years in the sample to be included. Thus, each household having complete DC plan and credit card data in 2021 and 2022 is an observation for this analysis. This results in 17,720 household observations.

## Data Definitions

**Spending** — Total spending is the annual sum of the monthly spending captured through credit and debit cards, electronic payment transactions, Chase checks, and cash across 10 specific spending categories: apparel & services, education, entertainment, food & beverage, health care, housing, transportation, travel, charitable contributions, and other. For cash and check spending that cannot be categorized, two additional categories are created: unspecified cash and check spending.

**Income** — Since all the spending data are at the household level, the income used in this study is also at the household level. There are two income values used in this study from the Chase data:

> **Net Income** — This is the observed deposited amount from the Chase data for salaries and wages that is net of any taxes and deductions taken out before the paycheck is deposited. This income source is used for calculating the spending ratios.
>
> **Gross Income** — This is an estimate based on net income described above with the addition of estimated federal income and Federal Insurance Contributions Act (FICA) taxes for the household.

**Credit Card Utilization** — This is measured by the ratio of the revolving credit card balances in the last month of the year to the credit limit on those cards. A ratio of 0 percent means that the household has no revolving credit card debt, while 100 percent means that the household has used the full allowable credit on their credit card(s). The ratio used will be that of the end of the year prior to the year of the incidence of any loan.

**New Plan Loan or New Loan** — Plan loan data are only available at year end, so any participant who has no outstanding loan balance at the end of the prior year one but has a balance at the end of study year is considered to have a new loan in the study year. In addition, any participant who has a higher outstanding loan balance at the end of the study year than they had at the end of the prior year is also considered to have taken a new loan in study year. Any use of plan loan in the text refers to a new plan loan, not one outstanding from a prior year.

**Contribution Rates** — The contribution rates in this study are calculated by taking the dollar amount of the DC plan contribution from the DC plan data in the year of the loan incidence and dividing it by the gross household income from the banking data plus the DC plan contribution amount.

**Account Balances** — The account balance is the end-of-year total amount that the DC plan participant has in their public-sector DC plan(s) in the year of the loan incidence.

**Spending Ratio** — This is the ratio of total annual spending to annual net income of the year of the loan incidence.

## Household Demographics

The household participants were widely distributed across ages and incomes (Figure 1). For example, 8.9 percent of the households had a DC plan participant younger than age 30, 26.6 percent ages 40–49, and 13.2 percent ages 60 or older. For gross household incomes, 3.3 percent of the households had incomes of $20,000–$29,999, and 32.7 percent had incomes of $100,000 or more.

As far as financial factors, 8.8 percent of the household participants had DC plan account balances of less than $2,000, and 7.2 percent had balances of $2,000–$4,999, while 19.3 percent had balances of $100,000 or more (Figure 2). Over two-fifths (46.8 percent) of these households had no revolving credit card debt at the beginning of the year, while 13.4 percent were using 80–100 percent of their credit card limit. Nearly one-half (49.3 percent) of the households had spending ratios of 1.05 or more, while two-fifths (39.2 percent) had ratios of less than 0.95. Furthermore, nearly one-half (49.1 percent) of the participants in these households had employee contribution rates of 5 percent or less, and 24.5 percent had contribution rates greater than 10 percent.[10]

Public-sector DC plan participants in most cases are also covered by a defined benefit plan, and the DC plan is considered a supplemental plan to the DB plan. These participants could be covered by hybrid plans as well. However, not all public-sector defined contribution plans offer a loan option, and the plan types that more typically offer a loan option are a 457 plan or a non-ERISA 401(k) plan.[11] In this study, 93 percent of the public-sector DC plan participants who were in a plan with a loan option available were in those plan types.

Figure 1
**Demographic Characteristics of the Sample**

| | |
|---|---|
| **Age** | |
| <30 | 8.9% |
| 30–39 | 30.3% |
| 40–49 | 26.6% |
| 50–59 | 20.9% |
| 60+ | 13.2% |
| | |
| **Gross Income** | |
| $20,000–$29,999 | 3.3% |
| $30,000–$49,999 | 18.2% |
| $50,000–$74,999 | 27.2% |
| $75,000–$99,999 | 18.6% |
| $100,000 or more | 32.7% |

Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

Figure 2
**Financial Characteristics of the Sample**

| **Account Balance** | **Percentage** |
|---|---|
| Less than $2,000 | 8.8% |
| $2,000–$4,999 | 7.2% |
| $5,000–$9,999 | 9.5% |
| $10,000–$14,999 | 7.8% |
| $15,000–$19,999 | 6.0% |
| $20,000–$49,999 | 24.7% |
| $50,000–$99,999 | 16.7% |
| $100,000 or more | 19.3% |
| | |
| **Credit Card Debt/Limit Ratio — Beginning of the Year** | |
| 0% | 46.8% |
| >0%–19% | 16.2% |
| 20%–59% | 17.3% |
| 60%–79% | 6.3% |
| 80%–100% | 13.4% |
| | |
| **Spending-to-Income Ratio** | |
| <0.80 | 20.4% |
| 0.80–0.94 | 18.9% |
| 0.95–1.04 | 11.5% |
| 1.05–1.49 | 30.2% |
| 1.50–1.99 | 10.2% |
| 2.00 or more | 8.8% |
| | |
| **Contribution Rate** | |
| 0% | 10.6% |
| >0%–2% | 14.5% |
| >2%–5% | 23.9% |
| >5%–10% | 26.4% |
| Greater Than 10% | 24.5% |

Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

## Loan Incidence

To determine where plan loans were spent, the participants who took a loan must first be identified. In this sample of public-sector DC plan participants where a loan option was available,[12] 10.9 percent took a loan during the year of interest (Figure 3).[13] The likelihood of a participant taking a plan loan increased with age through the 50s then declined. Household income of $30,000 or above did not appear to have an impact on the likelihood of a plan loan being taken, as the percentage taking a loan in each income group was in the 10–11 percent range. Participants with the smallest account balances had the lowest likelihood of taking a loan, but once the account balance reached $10,000, the likelihood of taking a loan was similar through balances of $100,000 or more, landing in the 11–13 percent range. The percentage who took a loan increased substantially with credit card utilization, as 6.9 percent of participants in households with outstanding-credit-card-balance-to-credit-card-limit ratios of 0 percent took a loan compared with 13.5 percent of those with ratios of 20–59 percent and 19.8 percent of those with ratios of 80–100 percent.

Figure 3

**Percentage of Participants Taking a New Loan in a Year and the Average Balance of the Loans at Year End, by Various Demographic Characteristics**

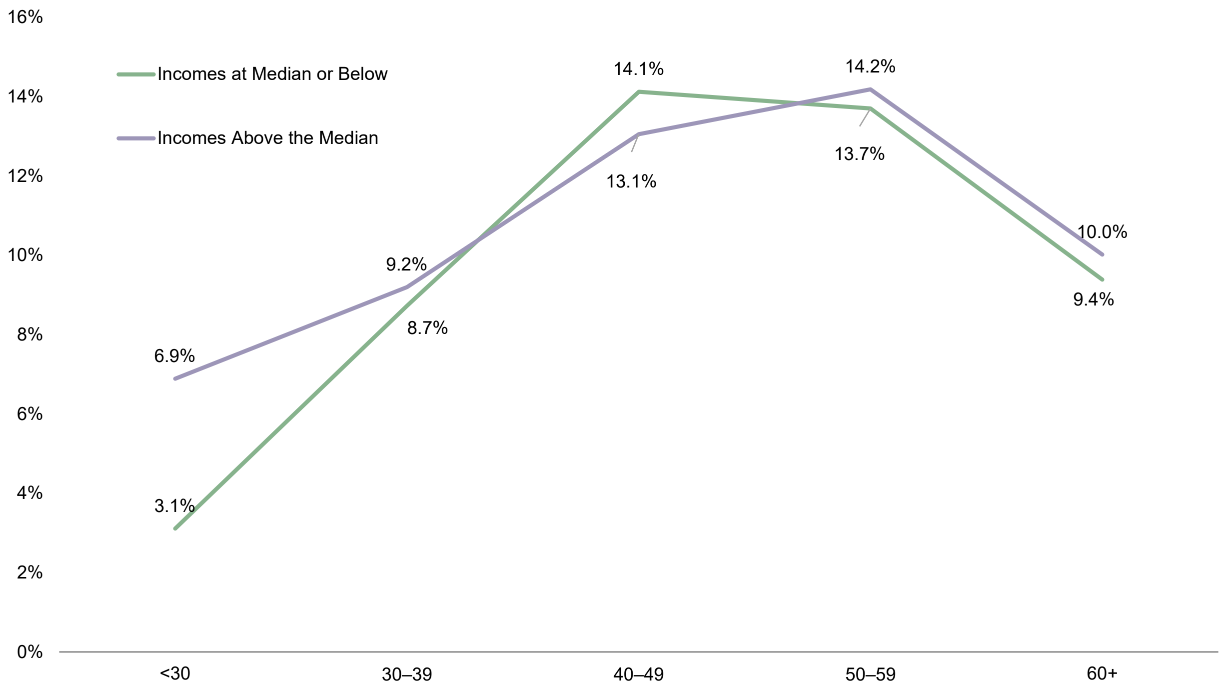
| | Percentage Taking Loan | Average Amount | Account Balance | Percentage Taking Loan | Average Amount |
|---|---|---|---|---|---|
| **All** | 10.9% | $14,014 | Less than $2,000 | 3.0% | $3,350 |
| | | | $2,000–$4,999 | 7.4% | $4,054 |
| **Age** | | | $5,000–$9,999 | 8.9% | $5,528 |
| <30 | 4.6% | $12,186 | $10,000–$14,999 | 10.6% | $6,011 |
| 30–39 | 9.0% | $13,365 | $15,000–$19,999 | 13.2% | $7,534 |
| 40–49 | 13.5% | $15,168 | $20,000–$49,999 | 13.7% | $13,854 |
| 50–59 | 14.0% | $13,784 | $50,000–$99,999 | 12.1% | $19,222 |
| 60+ | 9.7% | $13,254 | $100,000 or more | 11.8% | $21,595 |
| | | | | | |
| **Gross Income** | | | **Credit Card Debt/Limit Ratio — Beginning of the Year** | | |
| $20,000–$29,999 | 8.0% | $6,568 | 0% | 6.9% | $15,871 |
| $30,000–$49,999 | 11.0% | $8,249 | >0%–19% | 9.7% | $13,752 |
| $50,000–$74,999 | 10.3% | $12,610 | 20%–59% | 13.5% | $14,586 |
| $75,000–$99,999 | 11.4% | $15,088 | 60%–79% | 18.6% | $12,665 |
| $100,000 or more | 11.4% | $18,086 | 80%–100% | 19.8% | $12,006 |

Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

In all age groups except for the 40s, participants with above-median household incomes were more likely to have taken a loan than participants from households with incomes at or below the median (Figure 4).[14] For example, among those ages 50–59, 14.2 percent of participants in households with incomes above the median took a loan, compared with 13.7 percent of the participants in households with incomes at or below the median. The likelihoods among participants in their 40s saw participants in at- or below-median-income households at 14.1 percent taking a loan vs. 13.1 percent of participants in households with incomes above the median.

The average overall outstanding loan balance at the end of the year when the loan was taken was $14,014 (Figure 3). For incomes and account balances, the average outstanding loan balance increased as incomes and account balances increased. The average outstanding loan balance increased with age through the 40s before declining for those in their 50s or ages 60 or older. The average outstanding loan balance generally decreased as credit card utilization increased, going from $15,871 among those in households with ratios of 0 percent to $12,006 for those in households with ratios of 80–100 percent.

Figure 4
**Percentage of Participants Taking a Loan in a Year, by Income and Age**

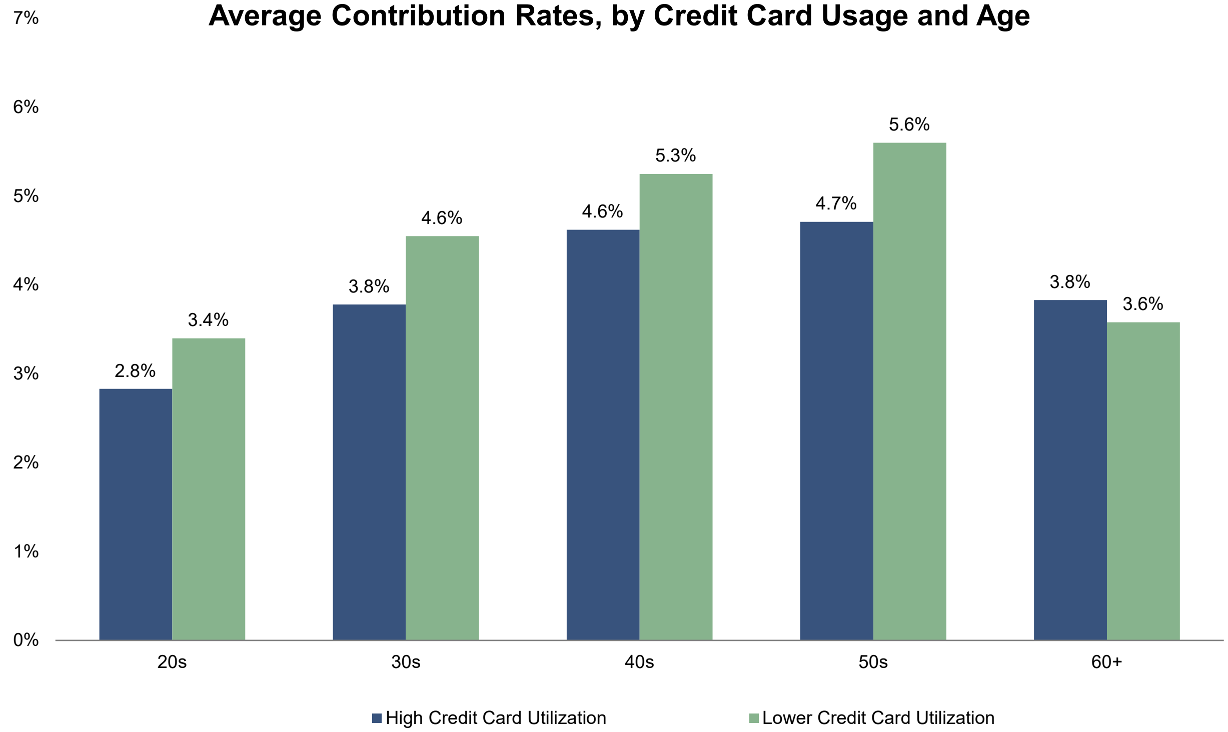



Note: The median gross household income of the sample was $76,600.
Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

It is not surprising that the average loan balance is lower for those in households with higher credit card ratios, as participants in households with higher credit card utilization are more likely to have less in their plans available to take as a loan. Participants in households with higher credit card usage have lower average contribution rates (the percentage of total gross household income that contributions to the DC plan represent) across all ages except for those ages 60 or older (Figure 5).[15] For example, for participants in their 50s, those from higher-credit-card-utilization households had an average contribution rate of 4.7 percent, compared with 5.6 percent for those with lower credit card utilization. This, in fact, leads to lower average balances among those with high credit card utilization across all age groups (Figure 6). Looking at participants in their 40s again, for example, the average account balance was $68,294 for those from lower-credit-card-utilization households, compared with $43,746 for those in high-credit-card-utilization households.

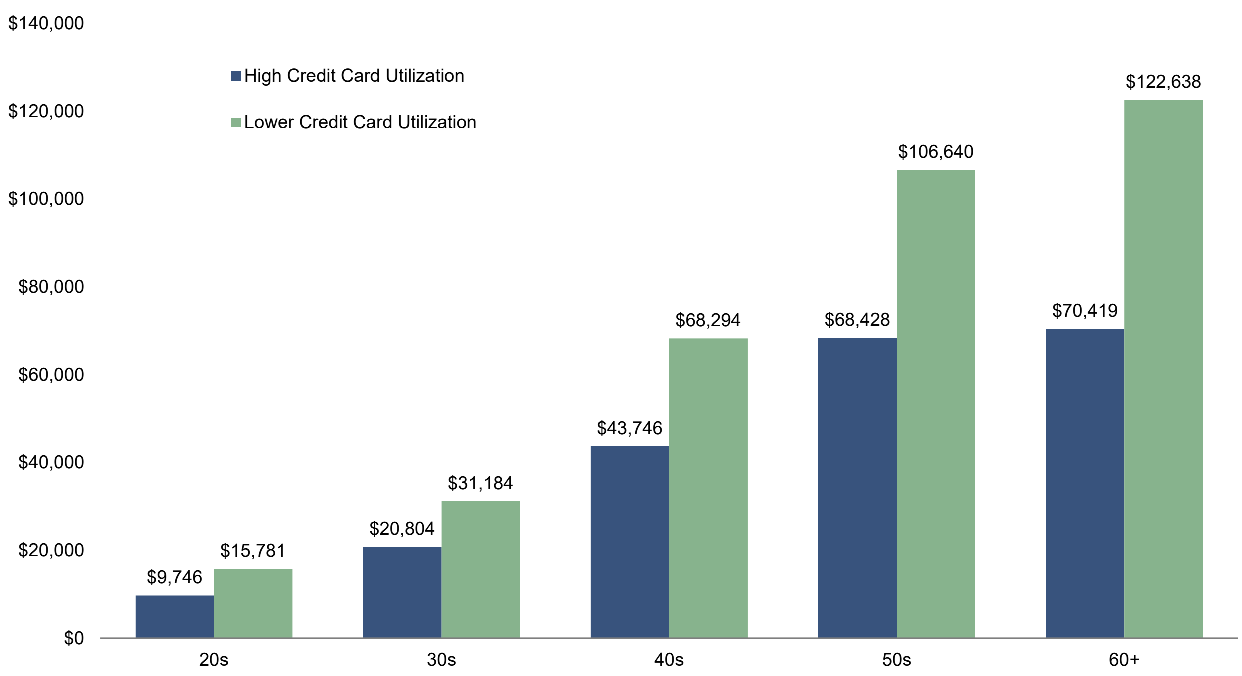
The link between credit card usage, plan loans, and plan outcomes is critical to understanding the connection between overall finances and retirement plan accumulations. Prior research in this collaboration as well as this research reinforce the importance of this relationship, but going the next step to find out what the plan loans appear to be used for has not been as well established with administrative data.[16] An investigation into where the plan loan funds are being spent is developed in the next section.

Figure 5
**Average Contribution Rates, by Credit Card Usage and Age**




Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.
Note: The high-credit-card-utilization category includes participants with households having outstanding credit card balances of more than 50 percent of their credit card limits, while the lower credit card utilization category includes participants in households having outstanding credit card balances of 50 percent or less of their credit card limits.

Figure 6
**Average Account Balances, by Credit Card Usage and Age**




Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.
Note: The high-credit-card-utilization category includes participants with households having outstanding credit card balances of more than 50 percent of their credit card limits, while the lower credit card utilization category includes participants in households having outstanding credit card balances of 50 percent or less of their credit card limits.

## Loan Incidence and Changes in Spending

To see where those who took plan loans spent their funds, each loan-taking participant's spending is compared in 12 specific categories between the year before the loan incidence was examined and the year that the loan was taken. The first test was to see if spending in any of the 12 categories increased by more than 10 percent. Among those with a new DC plan loan, health care spending was the most likely to have increased, as 58.5 percent of households where a participant took a loan saw their spending on health care increase by more than 10 percent in the year they took the loan (Figure 7). This was followed by travel (22.4 percent), entertainment (19.0 percent), and non-specified cash spending (18.9 percent). However, these expenses could have increased generally and were not necessarily specific to the loan. Therefore, the likelihoods of the spending increases of this magnitude were compared with those by households who did not take a loan. The same categories among those who did not take a loan were the most likely to have had increases, in the same order. The one category that showed a higher likelihood of having increased among those taking loans was health care spending, with 58.5 percent vs. 51.9 percent among those who did not take a loan. Otherwise, spending changes were very similar between households with or without a plan loan.

Figure 7

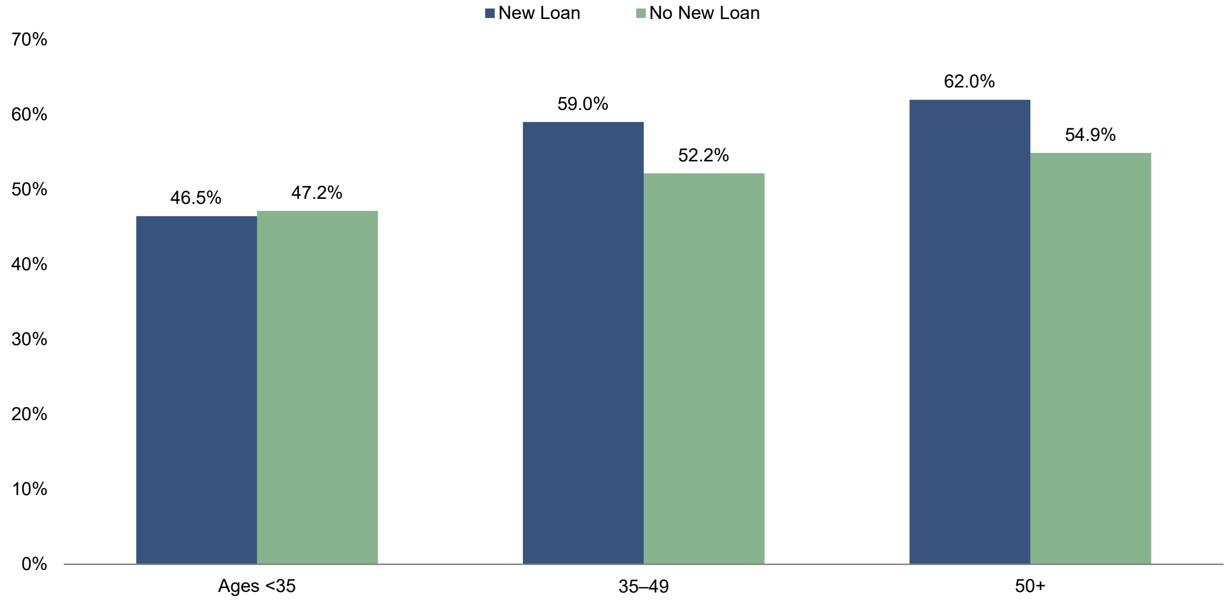
**Percentage of Participant Households With an Increase of More Than 10 Percent in Various Spending Categories, by New Loan Plan Status**

| Spending Category | New Loan | No New Loan |
|---|---|---|
| Apparel services | 9.1% | 10.4% |
| Cash | 18.9% | 18.6% |
| Charitable | 13.8% | 14.9% |
| Checks | 13.9% | 12.1% |
| Education | 12.9% | 13.4% |
| Entertainment | 19.0% | 20.2% |
| Food/Beverages | 3.9% | 3.3% |
| Health Care | 58.5% | 51.9% |
| Housing | 10.3% | 7.6% |
| Other | 5.3% | 4.3% |
| Transportation | 9.7% | 11.3% |
| Travel | 22.4% | 23.0% |

Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

There were age and income differences in taking loans shown previously that may have impacted the spending change results. When looking at the age of the household participant, only those in the two older age groups showed a higher percentage with a greater than 10 percent increase in health care spending among those who took a loan compared with those who did not take a loan (Figure 8). For example, among participants ages 50 or older, 62.0 percent of households with a participant these ages taking a loan had their health care spending increase by this amount, compared with 54.9 percent of the households without a participant taking a loan. For those households with participants younger than 35, the percentages between households with and without a plan loan were not significantly different.

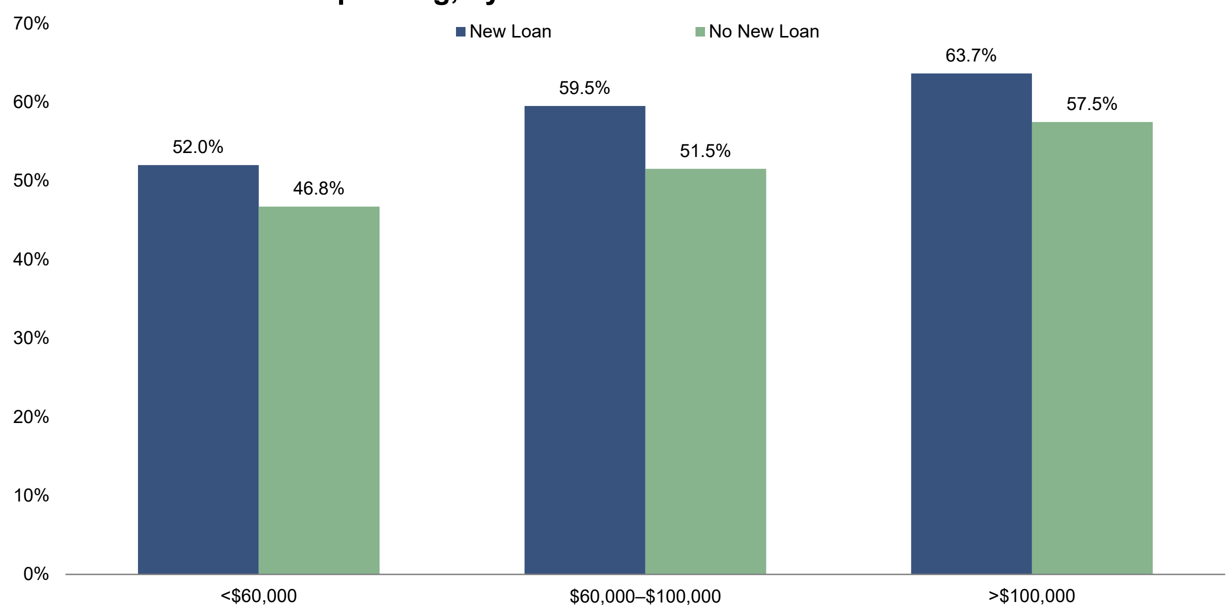
Figure 8
**Percentage of Participant Households With an Increase of More Than 10 Percent in Health Care Spending, by New Loan Plan Status and Age of the Participant**




Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

Higher likelihoods of increases in health care spending among those households with a participant taking a plan loan resulted across each income group (Figure 9). Those with the middle incomes ($60,000–$100,000) had the largest difference in the percentages who had an increase in health care spending — 59.5 percent for those who took a plan loan vs. 51.5 percent. Yet, the other two income groups also saw significant differences between households with and without a plan loan.

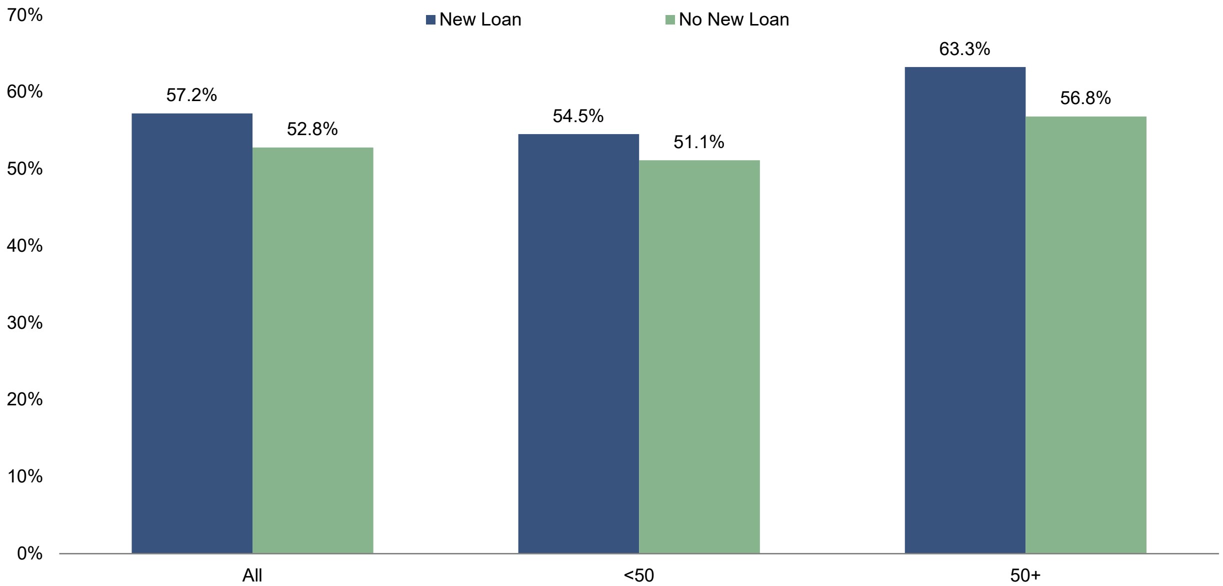
Figure 9
**Percentage of Participant Households With an Increase of More Than 10 Percent in Health Care Spending, by New Loan Plan Status and Household Income**




Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

Loan usage increases among those with higher credit card utilization, which would be an indicator of households being more likely to be financially stressed. Therefore, households that are likely to be financially stressed were identified to see if health care is still a category of spending that is more likely to have an increase in spending among those who took plan loans vs. those who did not. A financially stressed household is defined as having outstanding credit card balances larger than 75 percent of their credit card limits and having spent more than 110 percent of their net income. Among these financially stressed households, those who also took a plan loan were more likely to have had a spending increase of more than 10 percent than those who did not take a plan loan (Figure 10). Spending increases on health care were more prevalent among the financially stressed households whose plan participants were ages 50 or older, as 63.3 percent of the households where a loan was taken had this increase compared with 56.8 percent of the households where a loan was not taken.

Figure 10
**Percentage of Participant Households Who Are Financially Stressed* With an Increase of More Than 10 Percent in Health Care Spending, by New Loan Plan Status and Age of Participant**




Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.
*Financially stressed households have outstanding credit card balances larger than 75 percent of their credit card limits and spend more than 110 percent of their net income.

A spending increase may not have surpassed the 10 percent threshold, but it may have altered the composition of spending among the households. To determine the second test of spending changes, the composition of total spending that each category represented was compared between the year prior to the loan incidence and the loan year to see if any spending category's share increased by more than 5 percentage points. The spending categories most likely to have seen an increase in their share of total spending of this size were unspecified cash spending (24.9 percent of the households), health care (23.3 percent), and housing (21.0 percent) (Figure 11). Given their larger likelihoods of share increases, housing and cash were examined together to determine if there was a relationship between these categories, and together they were more likely to have a combined share increase of more than 5 percentage points at 30.5 percent, more than in either of the categories individually.

Again, the likelihoods of the share increases were compared with those who did not take a loan. For the households without a participant taking a plan loan, health care spending was the most likely to have seen its portion of total spending increase by more than 5 percentage points, at 22.2 percent. This was followed by housing (18.6 percent) and food/beverages (18.0 percent). Only housing spending and unspecified cash spending had higher likelihoods of share increases for those taking loan vs. those who did not. Otherwise, the likelihoods of the changes in the shares of spending in each of the other categories were either similar between the households or less for the households with a participant taking a plan loan.

Figure 11
**Percentage of Participant Households With an Increase of More Than 5 Percentage Points in the Share That Various Spending Categories Represent, by New Loan Plan Status**

| Spending Category | New Loan | No New Loan |
|---|---|---|
| Apparel services | 3.5% | 3.4% |
| Cash | 24.9% | 17.9% |
| Charitable | 0.4% | 0.5% |
| Checks | 16.2% | 14.3% |
| Education | 2.1% | 2.9% |
| Entertainment | 2.8% | 2.7% |
| Food/Beverages | 13.8% | 18.0% |
| Health Care | 23.3% | 22.2% |
| Housing | 21.0% | 18.6% |
| Other | 6.5% | 6.7% |
| Transportation | 14.2% | 14.8% |
| Travel | 5.4% | 7.3% |
| Housing+Cash | 30.5% | 24.4% |

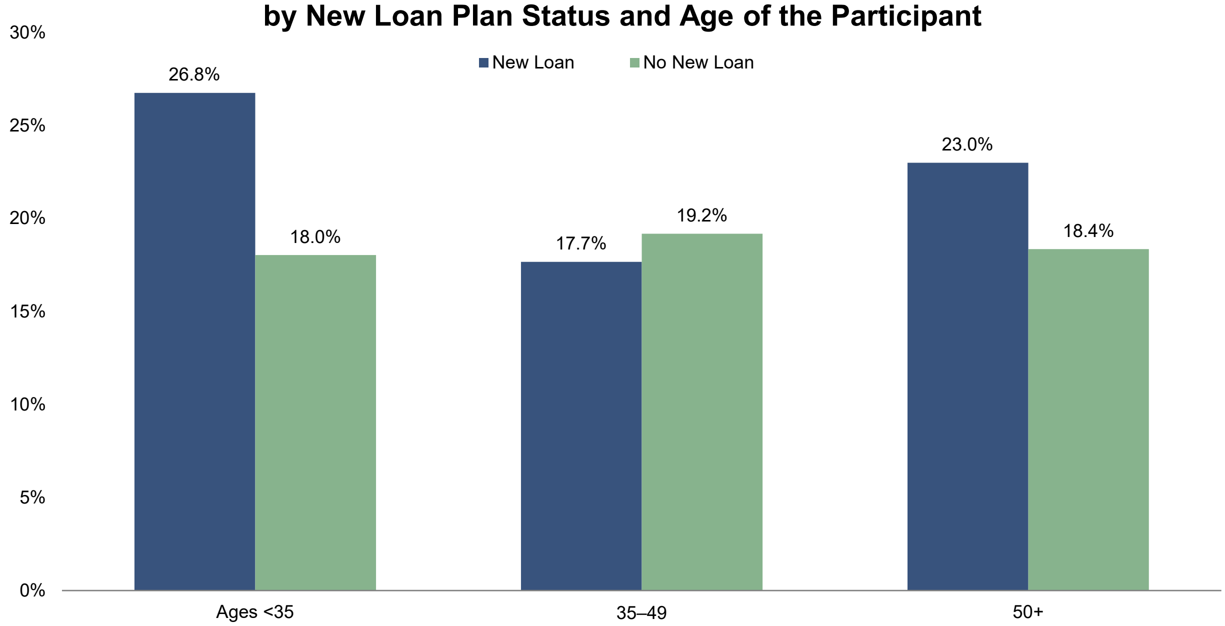
Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

Potential age and income differences are again examined between those with and without plan loans. The percentage of households with a larger than 5 percentage point increase in the portion of their total spending going to housing being higher for the households with participants who took a loan was more pronounced among households with participants younger than 35, at 26.8 percent vs. 18.0 percent for those who did not take a plan loan (Figure 12). Households with participants ages 35–49 who took a loan did not have a higher percentage of an increased share than the households who did not take a loan, but for the households with the oldest participants, those who took a loan had a significantly higher percentage of having had an increase in their share of spending on housing.

By household income, the households with the lowest incomes (less than $60,000) who had taken a loan were more likely to have had an increased share relative to the households without a plan loan (Figure 13). The difference did not appear to carry over to the households with incomes of $60,000–$100,000.

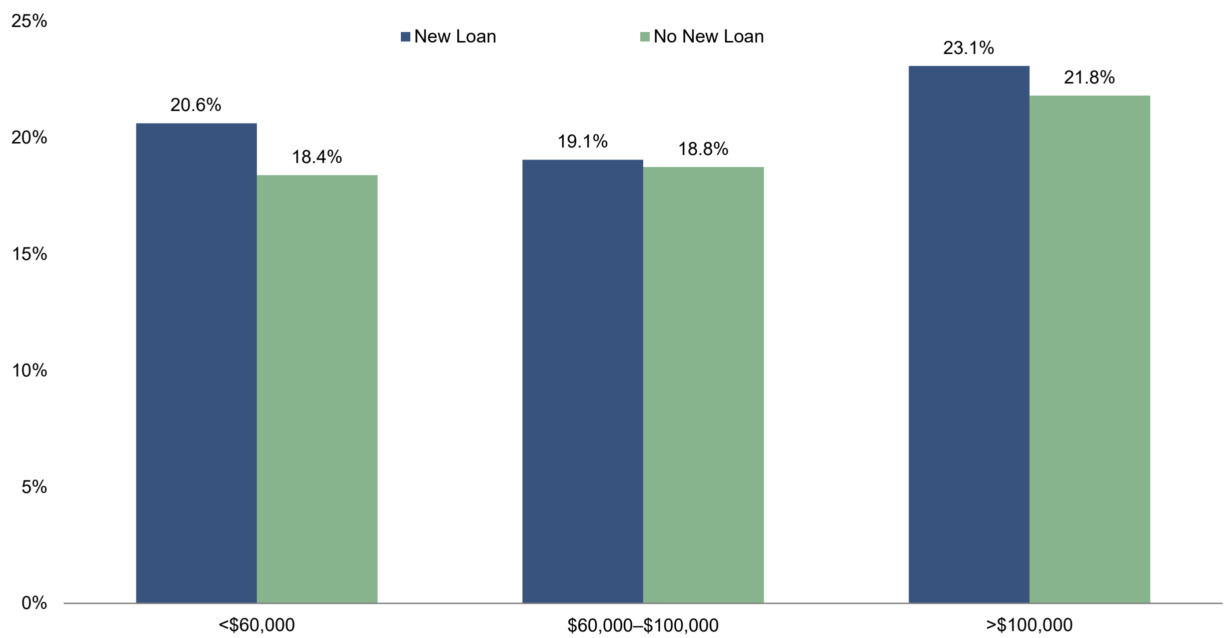
When the housing and cash categories are combined, the likelihood of a combined share increase being higher among the households with a plan loan was seen across each age group, with the largest differences among the households with the youngest and oldest participants (Figure 14). The difference in the likelihood of a share increase was largest among the households with the youngest participants, at more than 10 percentage points.

Figure 12
**Percentage of Participant Households With an Increase of More Than 5 Percentage Points in Housing Share of Total Spending, by New Loan Plan Status and Age of the Participant**



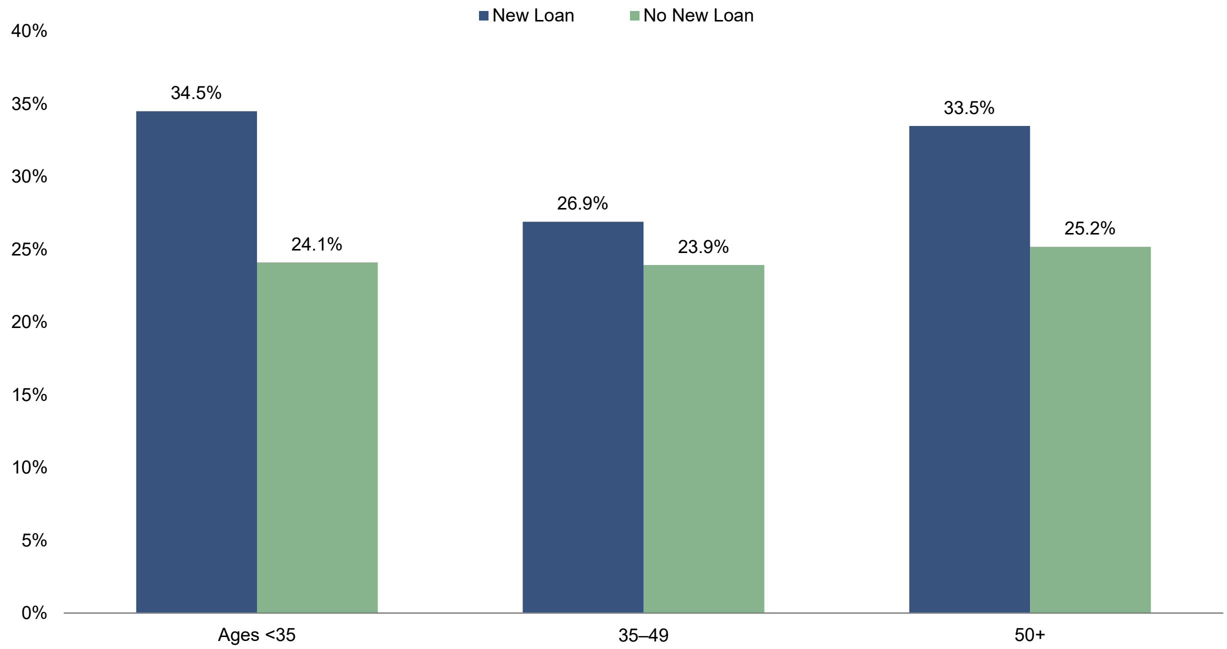

Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

Figure 13
**Percentage of Participant Households With an Increase of More Than 5 Percentage Points in Housing Share of Total Spending, by New Loan Plan Status and Household Income**




Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

Figure 14
**Percentage of Participant Households With an Increase of More Than 5 Percentage Points in Housing+Cash Share of Total Spending, by New Loan Plan Status and Age of the Participant**



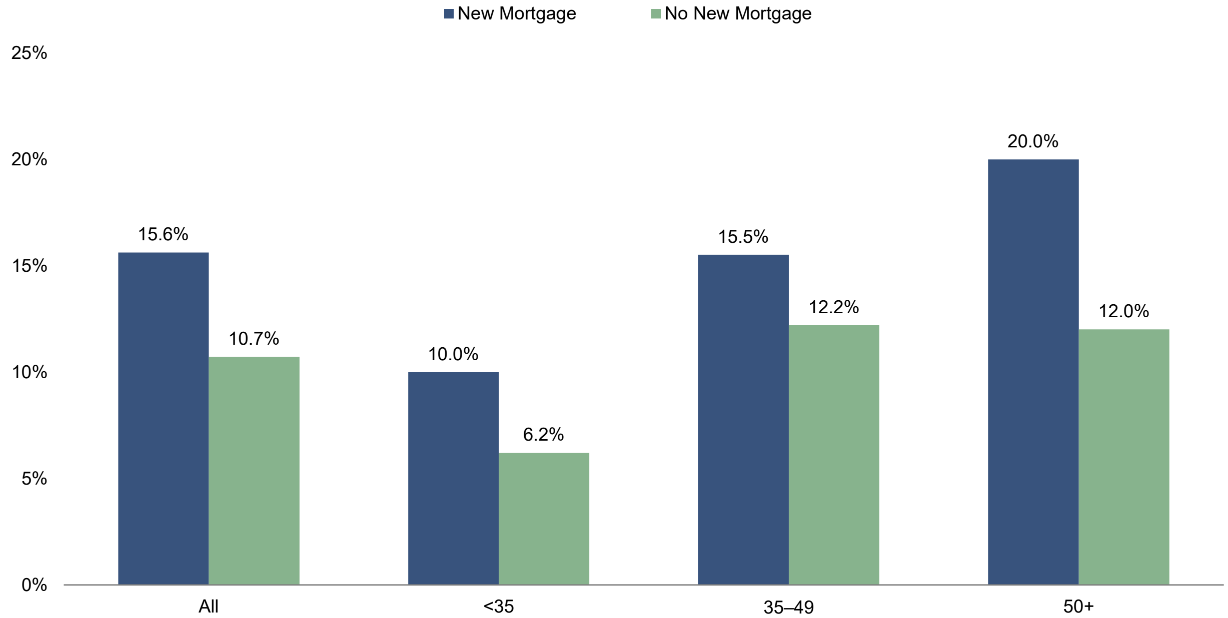

Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.

## New Mortgages

An important component of housing expenses is mortgage payments; as a result, starting a mortgage is likely to have a significant impact on housing expenses. A possible source of funds for a down payment when purchasing a house is a DC plan loan. In fact, households who started mortgage payments in the year of the loan incidence analysis were more likely to have taken a plan loan than those who did not start mortgage payments in that year — 15.6 percent vs. 10.7 percent (Figure 15).[17] This was true for households with plan participants of all ages. Looking at this correlation in the opposite direction, the percentage of those having a new mortgage given that they had taken a plan loan was 5.8 percent, compared with 3.8 percent starting a new mortgage when they had not taken a plan loan (Figure 16). Again, a higher likelihood of starting a new mortgage for those who had taken a plan loan was found across all ages.

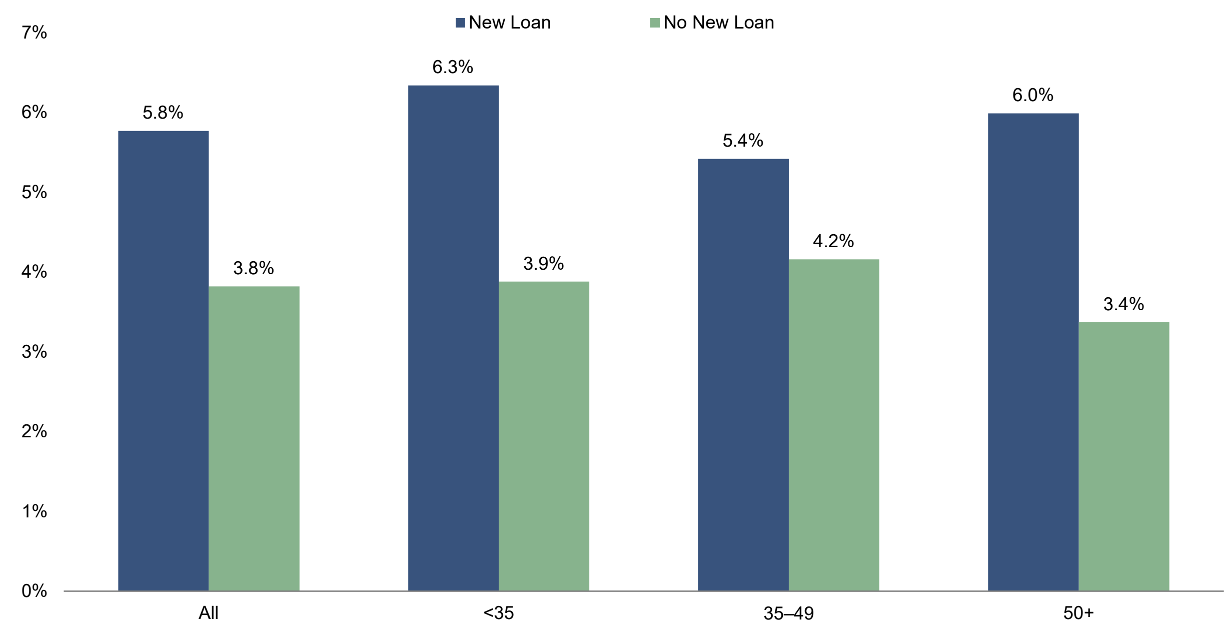
Regardless of whether the household took a plan loan, when a new mortgage was started, the probability of having an increase in housing spending of more than 10 percent was significantly higher (Figure 17). For example, 60.0 percent of those who took a plan and started a new mortgage had a housing spending increase, compared with just 6.6 percent of those without a new mortgage but having a new plan loan.

Figure 15
**Percentage of Participant Households Who Took a Plan Loan, by New Mortgage Status and Age of the Participant**



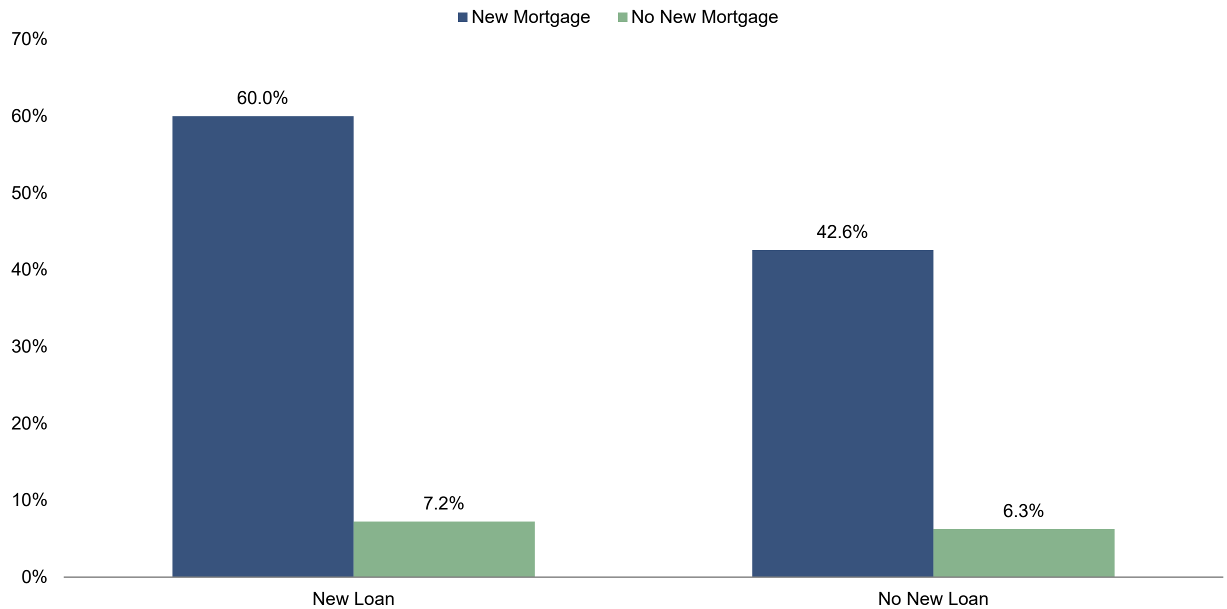

Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.
Note: The households who were identified as starting new mortgages were determined by finding those making mortgage payments in the loan incidence analysis who hadn't been making these payments in the year prior. In other words, any household who was found to not be making them in the prior year but making them in the analysis year were identified as having a new mortgage.

Figure 16
**Percentage of Participant Households Who Had a New Mortgage, by New Plan Loan Status and Age of the Participant**




Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.
Note: The households who were identified as starting new mortgages were determined by finding those making mortgage payments in the loan incidence analysis who hadn't been making these payments in the year prior. In other words, any household who was found to not be making them in the prior year but making them in the analysis year were identified as having a new mortgage.

Figure 17
**Percentage of Participant Households With an Increase of More Than 10 Percent in Housing Spending, by New Loan Plan Status and New Mortgage Status**




Source: Estimates from the PRRL Database and select Chase data. For more information, see the Data Sources box in the text.
Note: The households who were identified as starting new mortgages were determined by finding those making mortgage payments in the loan incidence analysis year who hadn't been making these payments in the year prior. In other words, any household who was found to not be making them in the prior year but making them in the analysis year were identified as having a new mortgage.

## Conclusion

This study builds on prior J.P. Morgan/EBRI studies that looked at the link between spending, credit card debt, and DC plan loans. These links between spending and debt suggest that retirement planning is not wholly different by place of employment, even where benefits availability may be dissimilar, but part of a broader, holistic financial planning journey where all factors need to be incorporated. In fact, participating in a budget webinar has been found to be associated with higher DC plan contributions.[18] Programs to help with workers' overall finances — for example, financial wellness benefits — could be indispensable. The decision to take a plan loan is not just dependent on what happens in the plan but on the total financial profile of the participant.

However, the prior studies did not identify what specific expenses were linked to the plan loans. In this study, spending increases among households with participants taking a plan loan showed that spending changes were across many spending categories, depending on the households' circumstances. Yet, health care and housing spending, particularly among the households starting a new mortgage, stood out as places where spending increases differed from the households where a DC plan loan was not taken. Thus, the loan usage does not appear to be tied to spending on luxury items but those involving their health care or investing in a home. This supports the idea that prohibiting plan loans would not necessarily improve participants' retirement security, as the loan usage is more likely to help with expenses in retirement — health and homes. Without the option of taking a plan loan, participants would seek loans outside the plan to fill spending gaps, and those loans may have terms more expensive than those of a plan loan. Yet, having liquid accounts, such as health savings accounts (HSAs) and emergency savings accounts that can provide funds for health care or housing, could help limit DC plan participants' need to tap their retirement savings accounts when faced with health events or investing in/repairing their homes.

This research, like prior J.P. Morgan/EBRI studies, found that higher debt can have a long-lasting impact on retirement security, since higher credit card utilization is correlated with lower DC plan contributions and account balances. Thus, the availability of emergency savings to help cover expenses can be a critical factor in preventing or stalling a cycle of increasing debt that can significantly impact retirement readiness, wherever the individual works. Furthermore, the finding that many participants have spending increases on health care when taking a plan loan suggests that examining the health insurance available to DC plan participants could also help improve finances, showing the intersection of health and wealth.

**DATA PRIVACY**: JPMorgan Chase has a number of security protocols in place which are designed to ensure all customer data is kept confidential and secure. Reasonable physical, electronic and procedural safeguards are used that are designed to comply with federal standards to protect and limit access to personal information. There are several key controls and policies in place which are designed to ensure customer data is safe, secure, and anonymous: (1) Before J.P. Morgan Asset Management (JPMAM) receives the data, all selected data is highly aggregated and all unique identifiable information, including names, account numbers, addresses, dates of birth and Social Security numbers, is removed. (2) JPMAM has put privacy protocols in place for its researchers. Researchers are obligated to use the data solely for approved research and are obligated not to re-identify any individual represented in the data. (3) JPMAM does not allow the publication of any information about an individual or entity. Any data point included in any publication based on customer data may only reflect aggregate information. (4) The data is stored on a secure server and can be accessed only under strict security procedures. Researchers are not permitted to export the data outside of J.P. Morgan Chase's (JPMC) systems. The system complies with all JPMC Information Technology Risk Management requirements for the monitoring and security of data. (5) JPMAM provides valuable insights to policymakers, businesses, and financial professionals, but these insights cannot come at the expense of consumer privacy. We take every precaution to ensure the confidence and security of our account holders' private information.

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## Endnotes

[1] See Copeland, Craig, Michael Conrath, Sharon Carson, Alex Nobile, and Matt Petersen, "How Financial Factors Outside of a Defined Contribution Plan Can Impact Retirement Readiness: An Examination of Public-Sector Participants," *EBRI Issue Brief*, no. 618 (September 5, 2024) and Copeland, Craig, Michael Conrath, and Sharon Carson, "How Financial Factors Outside of a 401(k) Plan Can Impact Retirement Readiness," *EBRI Issue Brief*, no. 591 (Employee Benefit Research Institute, September 7, 2023).

[2] For example, see Holden, Sarah, and Jack VanDerhei, "Contribution Behavior of 401(k) Plan Participants." *EBRI Issue Brief no. 238* (October 2001). Available at https://www.ebri.org/publications/research-publications/issue-briefs/content/full/contribution-behavior-of-401(k)-plan-participants-154; Munnell, Alicia H., Annika Sundén, and Catherine Taylor, "What Determines 401(k) Participation and Contributions?" CRR Working Paper, no. 2000-12. Chestnut Hill, MA: Center for Retirement Research at Boston College, December 2000. Available at https://crr.bc.edu/wp-content/uploads/2000/12/wp_2000-12.pdf; and US General Accounting Office, "401(k) Pension Plans: Loan Provisions Enhance Participation but May Affect Income Security for Some." *Letter Report*, GAO/HEHS-98-5 (October 1997). Washington, DC: US General Accounting Office. Available at www.gao.gov/assets/hehs-98-5.pdf.

[3] For the most recent results, see Thephasit, Samita, "The State of Public Sector DC Plans: 2022," *PRRL Research Study*, (PRRL December 19, 2024).

[4] In a prior study using the PRRL Database and Chase banking data, spending ratios of the public-sector DC plan participants who also had a DB plan were compared with those who only had a DC plan. Also, the spending ratios were compared among those with DB plans by their level of tenure. DC-plan-only participants were found to spend less relative their income, on average, than those with a DB plan, while the tenure of the DB plan participants did not appear to have an impact on the

amount spent relative to income. See Copeland, Craig, Kelly Hahn, and Matt Petersen, "Spending and Saving Behavior of Public-Sector Defined Contribution Plan Participants," *EBRI Issue Brief*, no. 570 (September 19, 2022).

[5] See Copeland, Conrath, Carson, Nobile, and Petersen (September 5, 2024) (endnote 1).

[6] For more information on the PRRL Database and the findings from the database see Thephasit, Samita, "The State of Public-Sector DC Plans: 2022," *PRRL Research Study* (Public Retirement Research Lab, December 19, 2024).

[7] See Lucas, Lori, Jack VanDerhei, Kelly Hahn, Je Oh, and Livia Salonen, "The 3% Difference: What Leads to Higher Retirement Spending?" Employee Benefit Research Institute & J.P. Morgan Asset Management Research Collaboration available at https://am.jpmorgan.com/us/en/asset-management/mod/insights/retirement-insights/the-3-difference-what-leads-to-higher-retirement-savings-rates/ and VanDerhei, Jack, and Kelly Hahn, "In Data There Is Truth: Understanding How Households Actually Support Spending in Retirement," *EBRI Issue Brief*, no. 531 (Employee Benefit Research Institute, June 24, 2021) for more information about the EBRI/JPMorgan Asset Management research collaboration.

[8] Data privacy of customers and contractual relationships with recordkeepers have been carefully protected, and no data were transferred to JPMorgan Asset Management. EBRI has no access to personally identifiable information.

[9] See the appendix in VanDerhei, Jack, and Kelly Hahn, "In Data There Is Truth: Understanding How Households Actually Support Spending in Retirement," *EBRI Issue Brief*, no. 531 (Employee Benefit Research Institute, June 24, 2021) for an example schematic of how the overlap of the Chase data with data from an EBRI database is determined.

[10] The contribution rates use the income from the Chase data, not the PRRL dataset, so these numbers will be different from the PRRL Database publication in Thephasit (2024) (see endnote 6).

[11] Certain public-sector plan sponsors have a 401(k) plan that was established before they were no longer allowed in the public sector. These plans were grandfathered to be continued to be offered, but they follow the Internal Revenue Service (IRS) code on these plans, not the rules exclusively in the Employee Retirement Income Security Act (ERISA).

[12] The PRRL Database includes loan information for 34 percent of the participants in the database.

[13] This number is lower than the percentage who had a loan outstanding, as a loan outstanding could have been taken in a different year but has still not been paid off. Thus, some loans are in the repayment stage but not taken in that year in any given year.

[14] The median household income used for these categories was a gross household income of $76,600. The income includes income from all individuals in the household, not just the participant's income.

[15] The high-credit-card-utilization category includes participants with households having outstanding credit card balances of more than 50 percent of their credit card limits, while the lower-credit-card-utilization category includes participants in households having outstanding credit card balances of 50 percent or less of their credit card limits. The contribution rates are calculated using the contribution amounts from the PRRL Database divided by the gross household income from the Chase dataset plus the contribution amount.

[16] There have been survey data on what participants report as the reasons for taking plan loans or withdrawals. For example, the EBRI/Greenwald Retirement Confidence Survey found that 35 percent of those saying they took a loan or withdrawal from their retirement savings plan bought a home, car, or other large purchase. Another 27 percent used them to pay off credit card debt, 22 percent to cover day-to-day expenses, 23 percent to pay for home or car repairs, and 21 percent to cover medical expenses.

[17] The households who were identified as starting new mortgages were determined by finding those making mortgage payments in the loan incidence analysis who hadn't been making these payments in the year prior. In other words, any household who was found to not be making them in the prior year but making them in the analysis year were identified as having a new mortgage.

[18] See "Field of Dreams? Measuring the Impact of Financial Wellbeing Initiatives on 401(k) Plan Utilization," *EBRI Issue Brief*, no. 554 (Employee Benefit Research Institute, March 10, 2022).