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The Retirement Breach in Defined Contribution Plans

Size, Causes, and Solutions

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Well over half of U.S. employers use 401(k)'s and other defined contribution (DC) programs to encourage their employees to save for retirement, now collectively spending over $118 billion in match contributions and encouraging employees to save another $175 billion every year. Yet, over 25 percent of households that use a DC plan for retirement have withdrawn, or breached, their DC balances for non-retirement spending needs, amounting to over $70 billion in annual withdrawals. These trends challenge key legal and financial assumptions used to govern the DC retirement market. In particular,

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Over 25 percent of households that use a 401(k) or similar DC plan have used all or some of their savings for non-retirement needs, amounting to over $70 billion in annual withdrawals.

Among the implications discussed in this paper, these data indicate that a large and growing share of plan participants are receiving investment advice that a) is misaligned with their investment needs (short-term savings should be in money market accounts, not equities and bonds), b) drives up the cost of their savings (mutual fund fees, trading fees, investment advice, etc, is not needed for short-term savings needs), and c) increases the likelihood of a tax penalty (distribution penalty). For many of these households, they may be better off not participating in the 401(k) until they build sufficient emergency savings.

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75 percent of breachers that cash-out their entire balance indicate that they have done so because they face basic money management challenges.

We also find that less than 8 percent of breachers say they take early distributions because they have been laid off. By not addressing basic financial needs, such as spending less than you earn and building emergency savings, some sponsors in high-employment industries with low job-switching costs believe they are providing their employees with an incentive to terminate their employment so they can gain access to their 401(k) savings, since this is often the only savings a worker has accumulated.

The lack of financial well-being has a very strong association with the likelihood members of a DC Plan will breach their retirement savings for non-retirement spending needs.

Over 27 percent of workers living in households with unmet basic financial needs, like budgeting and emergency savings, breach their retirement savings, compared to 8 percent in households with advanced financial needs, like the need to save more for retirement or optimize their investment portfolio. Similarly, workers are up to 6x more likely to have out a loan if they do not have sufficient emergency savings.

The value of penalized breached DC savings has steadily increased over time, growing from an estimate $36 billion in 2004 to $60 billion in 2010, the most recent year that data is available for.

Similarly, the percentage of tax units with retirement accounts or pension coverage that receive a penalty every year for non-retirement spending has increased from 7.9 percent in 2004 to 9.3 percent in 2010.

Workers between 40-49 are the most likely age group to breach their retirement savings.

By the time workers hit their 40s, they are highly likely to be burdened with mortgages and revolving credit card debt and have kids in high-school or on their way to college, creating the largest pressure to breach among any age group.

The findings indicate that employers are subsidizing an expensive retirement benefit that a large, and growing, share of workers do not use for retirement, signaling a broader misalignment between the advanced financial needs subsidized by employers and the basic, unmet financial needs of workers. Furthermore, because retirement plan breaching is not among the metrics reported by plan managers, this growing problem is largely invisible to employers sponsoring retirement benefits. Among our recommendations, we encourage employers and regulators to promote access to more personalized Total Rewards and talent management programs—with an increased focus on holistic money management needs —which more effectively align benefit spending with the actual benefit needs of their population. This will reduce costs for employers, improve worker engagement, and ultimately increase Rewards efficacy.

Content

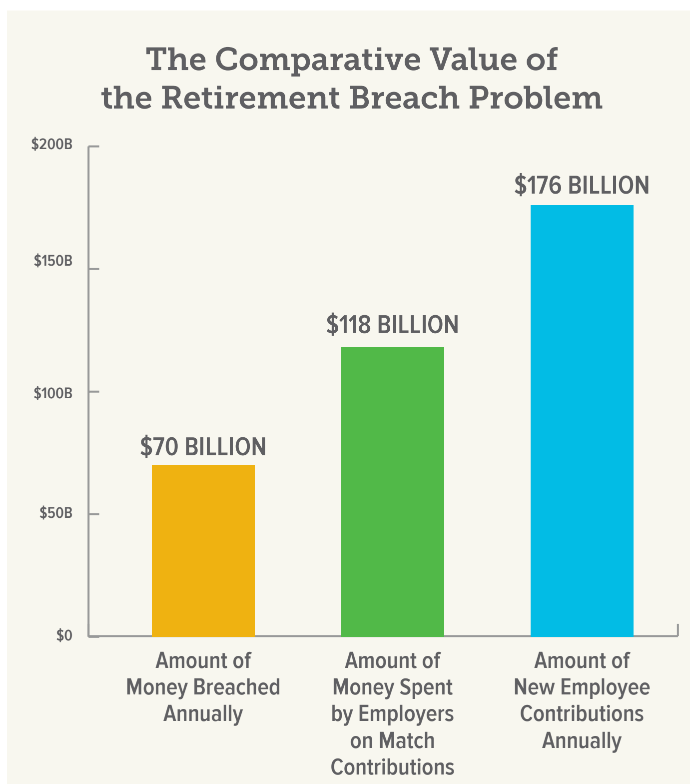
Introduction

Created as part of an obscure 1978 law designed to encourage workers to save more for retirement, 401(k)'s and other defined contribution (DC) plans are now the most widely used workplace retirement savings vehicle for U.S. workers.[1] As of 2010, about 40 percent of households included a worker with access to a defined contribution (DC) program and 79 percent of those workers actively participated in it, totaling over $4.5 trillion in managed assets.[2] Yet, as large as those numbers are, DC plans are a marginal contributor to the actual retirement needs of U.S. workers. In fact, DC balances constitute less than 7 percent of the gross asset value owned by all households near retirement.[3]

Alongside the evidence that DC plans are a modest relative contributor to the retirement needs of workers, there is a growing amount of work that assesses the share of workers that actually use their DC plan balances for their retirement needs.[4] Although workers are given access to DC plans to help save for retirement, they are eligible to withdraw funds from those plans for non-retirement purposes under three general scenarios: loans, cash-outs, and withdrawals.[5] At their discretion, employers can give plan participants the ability to borrow up to 50 percent of their vested DC balance or $50,000, whichever amount is lower. Cash-outs, a second mechanism for DC participants to spend their retirement savings on non-retirement needs, give terminated employees the ability to withdraw all or a portion of their DC funds, although those distributions are charged with a 10 percent tax penalty, capital gains taxes, and/or income taxes. Withdrawals are the final mechanism for DC participants to gain access to their funds for non-retirement purposes. Participants may withdraw funds for a variety of reasons, which can include financial hardships or crises, age (over 59 ½) and a number of non-hardship cases, subject to the discretion of individual employers.

In total, over $70 billion is withdrawn from retirement accounts for non-retirement spending every year. Of that, about $60 billion is withdrawn for non-retirement purposes and penalized by the IRS with a tax penalty.[6] Another $10 billion includes new loan originations in any given year.[7] There is an additional amount withdrawn for non-retirement spending using non-taxable withdrawal options by workers who are older than 59 ½, but because it is too difficult to distinguish between retirement and non-retirement needs, there is no reliable data that we have been able to find that accounts for that value. To put the $70 billion in annual non-retirement spending in perspective, employers contribute approximately **$**118 billion in DC match contributions every year, and employees contribute an additional $175 billion.[8]

In this paper, we extend the work published in the last decade by assessing which types of participants are most likely to use all or some of their DC balances for non-retirement purposes. We also examine how these patterns vary across withdrawal options and have changed over time. Often called "leakage," the large rate and systematic quality of the non-retirement uses



Source: Author's analysis of the 2010 SCF and SIPP; Argento, Bryant, and Sabelhaus (2012); Abstract of 2010 Form 5500 Annual Reports of DC assets indicate that these plans are actually now being "breached." This is a massive, systematic problem that now affects 1 out of every 4 participants, on average – which is more like a gaping hole in the DC boat than a pesky "leak."

Perhaps more stunning is the plan performance for large employers. According to recent research, the average participant in large DC plan is likely not using all or a large share of their DC plans for retirement.[9] That means that large shares of participants at these plans are unnecessarily paying investment management and advice fees, mutual fund, administrative, and trading fees, and are likely over-investing in risky equity and bond investments that are not appropriate for short-term savings needs.

The findings suggest a rethinking of the narrow focus on retirement savings goals at the expense of more basic financial needs that are going unmet in the workforce. Without those needs being addressed, retirement needs, are in name only and come with a hefty set of unnecessary fees and inappropriate investment choices for many workers.[10] Given that a large and, we will document, growing share of plan participants will use their retirement savings for non-retirement needs, some DC participants will now be much better off by storing all or a portion of their savings in short-term cash accounts rather than expensive and risky mutual or index funds.

Methodology

This analysis relies largely on two national surveys administered by the U.S. Government. One of these is the Federal Reserve's Survey of Consumer Finances (SCF), which is a triennial survey of household finances. These data are a nationally representative sample of U.S. households and are used by federal policymakers to make legislative and regulatory decisions related to consumer finances. It is the preeminent source of detailed information regarding the financial profile of U.S. households, which gives us the opportunity to assess how household finances are associated with the rate of breaching.

The other primary data source for this analysis is the Survey of Income and Program Participation (SIPP), which is administrated by the U.S. Census Bureau. The SIPP is a national panel survey that has been administered on a continuous basis since 1984, featuring panels between 14,000-36,700 households. The primary purpose of the SIPP is to gauge the effectiveness of government benefit programs, along with the overall financial health of U.S. workers. Because of the mismatched timing of the panels that ask about household finances and DC plan participation, these data are not ideal for assessing the relationship between household finances and breaching. However, the data are helpful for determining the self-reported reasons why plan participants breach. They also provide a useful way for us to validate the paper's findings from the Federal Reserve's SCF.[11]

Our primary sample of U.S. households includes all households with a working head of household who is under the age of 60 and had a current loan at the time the survey was administered or reported taking a full distribution of their DC balance before their 60th birthday – what is referred to as "cashing out." We focus on workers who are younger than 60 because it becomes too difficult in the survey data after the age of 60 to distinguish between retirement and non-retirement spending. This sample gives us the ability to include in the analysis the many millions of households that have cashed out their DC balances, but are not currently participating in a DC plan. It also has the advantage of including current participants who have breached their DC balances for non-retirement needs. When combined, we can get a much more holistic understanding of the types of households that are most likely to use DC plans for non-retirement needs. We also include other samples, such as the population of households that have taken full distributions or current participants, in select areas throughout the paper.

Variables used in this analysis are provided by either the Federal Reserve or the U.S. Census Bureau. One exception is the measurement of "retirement breaching," which is a new concept we introduce in this paper. Unless otherwise specified, a retirement breach is defined as occurring if a current DC participant has a current loan or has previously withdrawn or cashed-out all or a portion of their DC balance. "Breachers" are defined as households that have elected to use one or more of these distribution channels. Where relevant, we also isolate the different forms of breaching to explore differences between the underlying participants. In all cases, the primary unit of analysis in this paper is whether or not a household has breached. We focus on those households because they include participants that have used the 401(k) sub-optimally as a short-term savings vehicle, exposing themselves to higher than necessary investment risk, management and administrative fees, and tax penalties. We're interested in exploring whether those households can be distinguished, so that sponsors will be more able to align their benefits spending with the actual needs of their worker populations.

There are several complexities associated with the measurement of breaching that are important to point out.[12] Most of these complexities arise from the fact that breaching is not a commonly used metric to evaluate the fiduciary efficacy of a program.[13] Instead, retirement plan administrators, fiduciary boards, consultants, and regulators are focused on variables such as participation rates, plan rates, funds performance and fees, program costs, investment advice and asset value.[14] These variables give sponsors little or no insight into the long-term efficacy of their investments, or the share of their retirement investments and plan participants that actually use their match and the program for the intended purpose. Given the lack of past attention to these important data, there are important data complexities associated with studying breaching that are important to review.

First, the data sources used in this analysis systematically under-estimate the extent to which breaching occurs in the DC participant population. The SCF, for one, excludes any questions about withdrawals, one of the distribution options that participants use to gain access to their DC savings for non-retirement purposes. Private data on large U.S. plans indicate that about 7 percent of DC participants take advantage of this early distribution option. Public survey data indicate just 3 percent of participants use this option.[15]

Second, there is some evidence that breaching is dependent on both time and the economic environment.[16] While economic growth and unemployment have remained relatively stagnant between the survey and current year, we will show in this paper that utilization of breaching options has steadily increased in previous years, indicating that this analysis may further undercount the breaching prevalence if that trend has continued.

Third, the bulk of the data used in this analysis are household-level data, even though the act of breaching is executed by an individual participant. Assessing household-level data rather than individual data was a deliberate decision because one of the primary questions pursued in this paper is the relationship between household finances and breaches. However, this, again, likely creates a bias in the data, although the direction of that bias could be in either direction. Many households are dual-income and include two working ago adults who are participating in separate DC plans. Collectively they represent two participants, but they are counted in much of this analysis as a single participant. This decision allows us to examine the effect of household finances on the breaching decision.

Finally, we only count a breach as occurring if the household reported a loan or took a full distribution prior to the 60^{th} birthday of the working head of household. After that point, it becomes too difficult in the data to reliably distinguish between distributed funds that are used for retirement and non-retirement spending.[17] This is another data characteristic that likely downwardly biases our estimates of the share of workers that breach their retirement savings, since IRS data indicates that a substantive share of the penalized DC distributions occur among workers older than 59½.[18]

The Size of the Retirement Breach Market

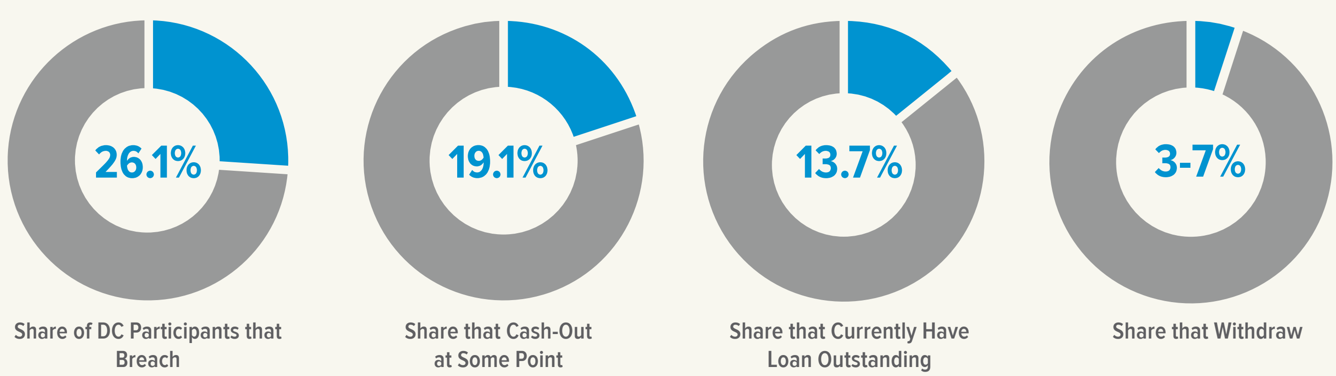
Over 25 percent of households that use a 401(k) or other defined contribution plan to build their retirement savings will spend all or some of their balance on non-retirement needs, amounting to more than $70 billion in withdrawals every year.[19] The bulk of the breach is driven by non-retirement cash-outs, although loans are a large and important share of the non-retirement DC spending as well. Across the entire U.S. household population who has used a DC plan for retirement savings, nearly 20 percent have at some point taken a full distribution of one or more of their DC balances. Similarly, about 13 percent of participants have an outstanding loan against their DC balance. And, up to 7 percent have been granted some type of withdrawal from their account.[20] Because some workers have used more than one of these early distribution options and there are different sample populations for breaching types, the share of all households that have taken an early distribution does not sum to 39%. Instead, it is at least 26%, and likely much higher, since we can not account in our data for the full share of households that take early withdrawals.[21]

We also consider how this trend has changed over time using IRS data on tax filings, which only considers the share of breached DC balances that receive a tax penalty.[22] According to these data, the value of penalized breached DC savings has steadily increased over time, growing from about $36 billion in 2004 to nearly $60 billion in 2010, the most recent year that data is available for. Similarly, the percentage of tax units with retirement accounts or pension coverage that receive a penalty every year for non-retirement spending has increased from 7.9 percent in 2004 to 9.3 percent in 2010.

Which Workers Use Their DC Balances for Non-Retirement Needs?

Financially unhealthy, low-income and workers as well as those between the ages of 40-49 years old, are the most likely to have taken early distributions from their retirement savings for non-retirement

The Size of the Retirement Breach Problem

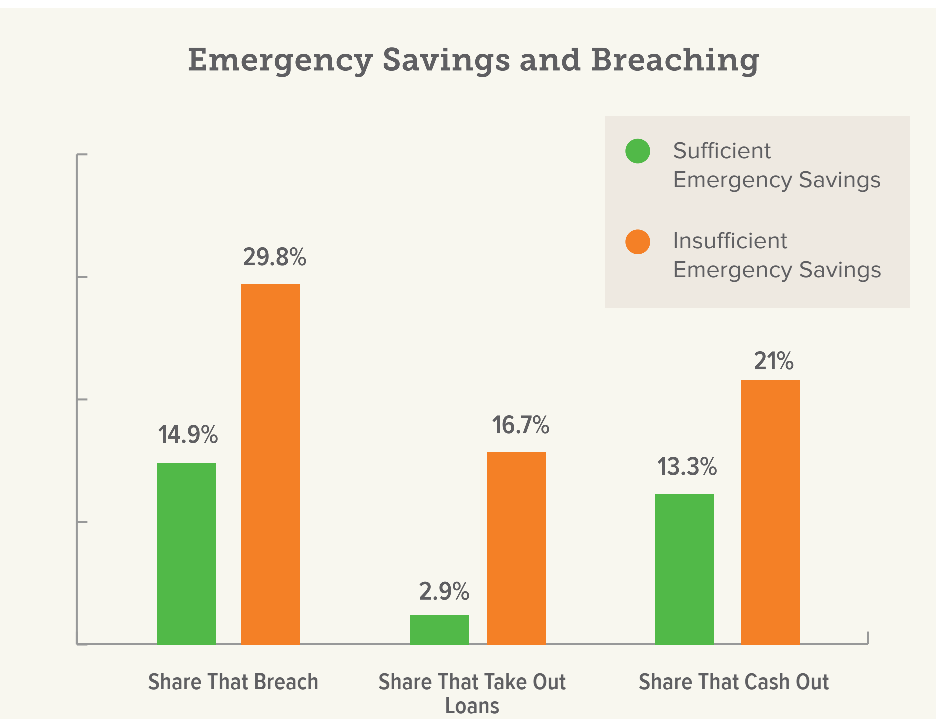


Source: Author's analysis of the 2010 SCF and SIPP; and Aon-Hewitt spending needs.[23] On their own, households that fit this profile are more likely than their demographic counterparts to breach their retirement savings for non-retirement spending needs. When combined, these households are the most likely to breach their retirement savings for non-retirement spending needs.

Financial Health Profile

Financial health may be positively or negatively associated with the probability that a household will breach their retirement savings for non-retirement needs. One would expect a neutral or positive relationship if breaching is used to address a one-time financial problem, such as an unexpected bill or too much debt. After a single breach, the household may be financially healthy again in this scenario. On the other hand, one might expect a negative relationship if breaching is emblematic of a pattern of money management problems, or the last resort for a household that has drained all other assets. In this case, breaching will have little to no material association with the financial health of an individual because their financial problems are like the childhood game Whack-a-Mole: once one problem is addressed, another one emerges.

To assess the relationship between breaching and financial health, we consider two different measures. The first measure of financial health is a straightforward measure of whether a DC participant has sufficient emergency savings to cover an expense equal to or less than 3 months of their annual income.[24] Absent that liquid savings, an economic shock, such as a car maintenance or health problem, may force the household to breach their retirement savings.[25] The second is a measure of their financial security, which we measure as a function of whether they have basic, intermediate, or advanced financial needs. These categories are drawn from widely used financial milestones by the financial planning community, which generally correlate with the financial security and health of a household.[26] A household is ranked as having basic needs if they lack a budget, have insufficient emergency savings, or are missing bill payments. Intermediate needs include revolving credit cards or lacking health insurance. Advanced needs are insufficient retirement savings or mortgage debt repayment needs.



Source: Author's analysis of the 2010 SCF

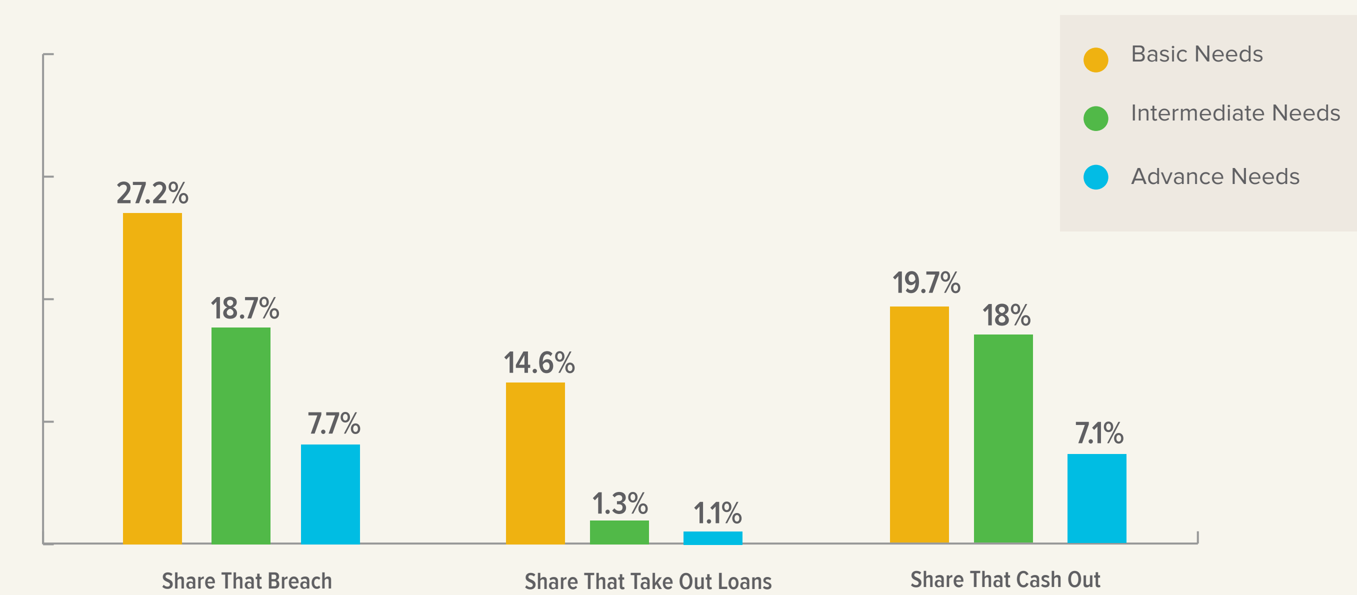
Insufficient emergency savings has the strongest association with breaching that we find in this analysis. If a household lacks emergency savings, it is twice as likely that they will breach their balances compared to households that have sufficient emergency savings. In fact, nearly 30 percent of households that lack emergency savings have breached their DC balances. Importantly, these are households that have already breached their balances, which indicates the withdrawn money has already been spent and they still lack sufficient emergency savings.[27]

The relationship between emergency savings and breaching is even more stark within different types of breaching. In particular, workers are up to 6x more likely to have a loan against their DC balance if they lack emergency savings.[28] In fact, just 3 percent of workers with sufficient emergency savings have a loan against their DC balance, compared to over 16 percent of households without sufficient emergency savings. While less stark, that same trend exists when we just consider cash-outs. Around 21 percent of workers without sufficient emergency savings have cashed out their balances for non-retirement needs, compared to about 13 percent of workers with sufficient savings. This evidence suggests that encouraging workers to build sufficient emergency savings is a method that employers can employ to guard against their workers taking early distributions.

We find similar trends when we expand the analysis to look at a broader definition of financial health. In particular, workers that have very basic financial needs that are unmet are over 3x more likely to breach their retirement savings than those households working on advanced financial needs. However, the propensity to breach does not linearly decrease as financial health increases. It is really not until households advance past basic and intermediate needs that they achieve a measurably lower probability in their expected breaching probability. For instance, around 20 percent of households working on basic and intermediate financial needs have cashed out their entire DC balance for non-retirement spending, compared to just 7 percent of households working on advanced issues.

Whether we consider emergency savings or a financial health index score value, there is a clear and strong association between financial health and workers' propensity to breach their DC balances. For these workers, the data that suggest they may have exhausted their options when they run into an unexpected expense or when the compounding effect of small errors becomes too great a burden to manage.[29] In the next section, we examine the reasons workers cite for taking full distributions, which provides further evidence that basic money management challenges lie at the root of breaching for a large share of participants.

Financial Wellness and Breaching



Source: Author's analysis of the 2010 SCF

Asset Profile

We next consider the relationship between assets and breaching. Our expectation is that there is a negative relationship between these two household characteristics, since breachers are, by definition, reducing the value of their assets. We utilize three different measures of assets. First, we use the sum value of all an individual's assets, including their home, car, financial accounts, and annuities. Second, we consider net wealth, or the difference between all of a household's assets and all of their liabilities. Finally, we consider the ratio of assets to household income, which controls for the relationship between household income and assets.

As expected, we find that households that breach their 401(k)'s and other DC plans own assets that are collectively worth much less money than those households that do not breach. In particular, the median breacher has total assets worth $188,000, compared to a median value of $332,000 among non-breachers. Similarly, the net wealth of households that breach is among just $63,000, compared to almost $200,000 for non-breachers. Finally, the typical breacher owns assets that are equal to about 110 percent of their annual income, compared to 260 percent among non-breachers. By any measure, then, breachers are worth much less money than their non-breacher counterparts.

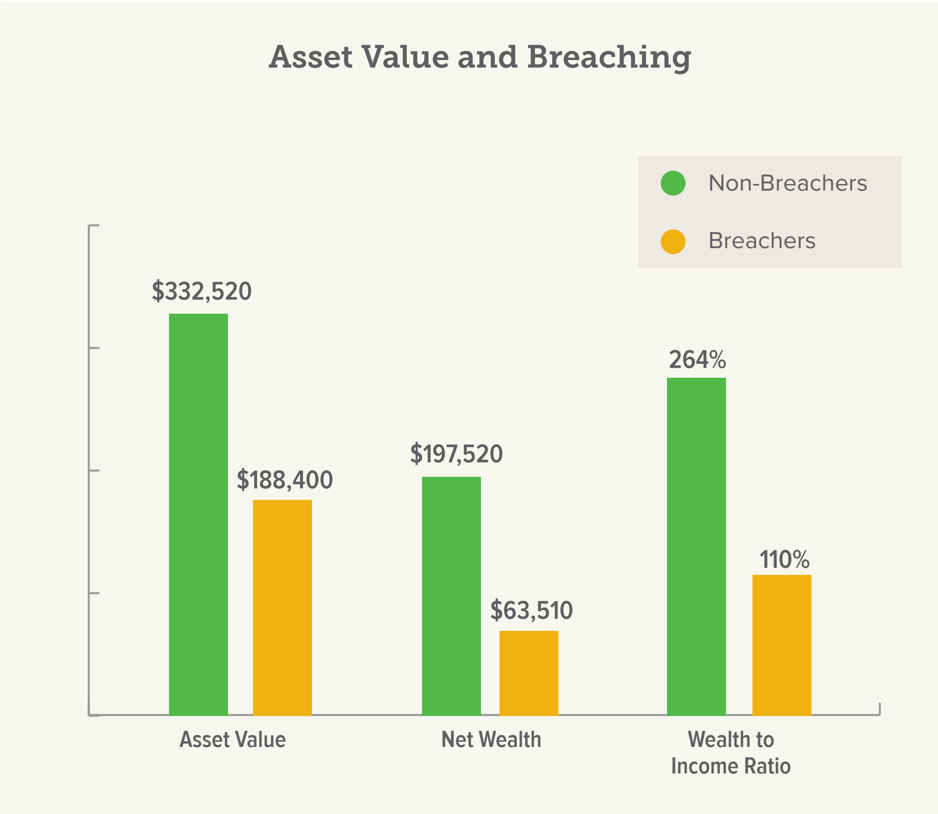
On one hand, these findings are entirely predictable. Breachers take distributions from their DC balances, which means that retirement account assets spend less time in the market compounding value over time, compared to non-breachers who preserve their DC balances over time. However, DC balances are a very small percentage of the typical worker's balance sheet. In fact, the typical household near retirement has a DC balance that accounts for just 7 percent of the total value of their assets. The bulk of household wealth resides in non-DC assets, like an owned home and Social Security annuity. This indicates that early distributions from a DC plan are not going to make large, substantive differences in a worker's wealth profile. Instead, these data suggest that a more likely explanation for the asset difference is that breachers have generally lower asset values to begin with and have fewer alternative borrowing options compared to non-breachers. That creates a higher demand among these households for short-term money when an unexpected expense arises. Since they lack the resources of non-breachers, they find this money in their retirement accounts.

Debt Profile

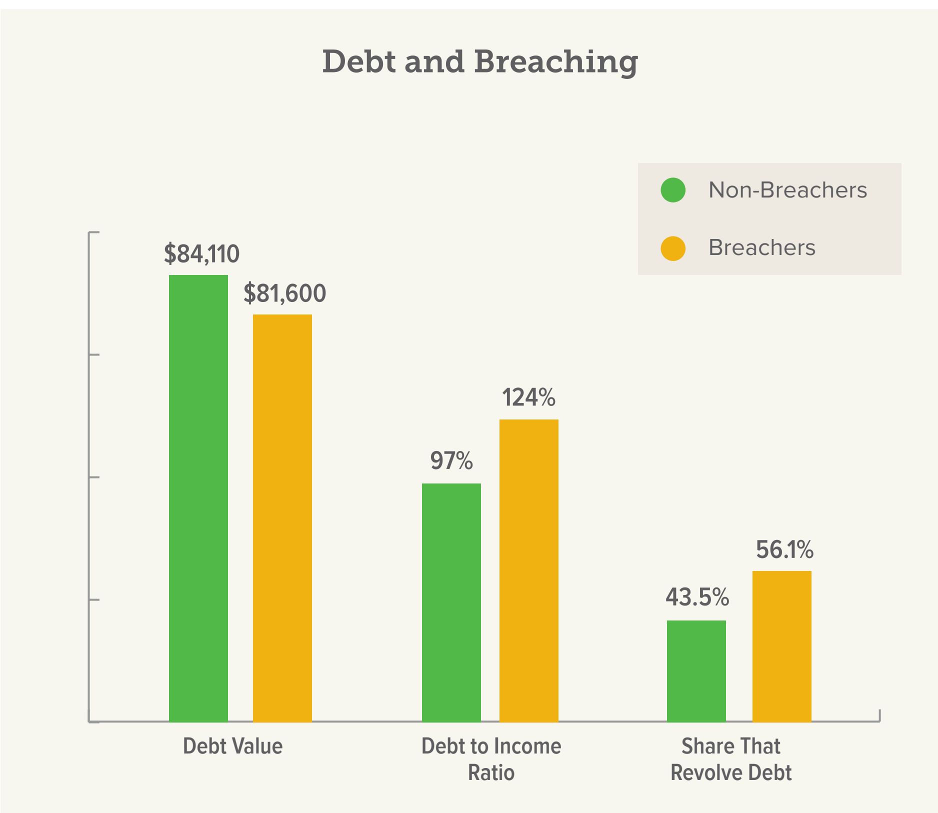
Next we consider the relationship between household debt and the probability that a household will breach their DC plans. One would expect a negative or inconclusive relationship between debt and breaching if households are using their DC balances to pay down debt one time. Alternatively, one would expect a positive relationship between household debt and breaching if households that breach are perpetually more indebted than non-breachers, indicating systematic debt management problems.

We rely on two different measures of debt. First, we consider the overall value of debt owned by a household, which includes mortgages, student loans, other installment loans, and revolving debt. Second, we measure household debt by looking at the difference between households that revolve their credit cards, and those that pay off their cards every month or do not use credit cards. The latter group is more able to generate insight into the ongoing financial health and management skills of the household.

We find that breachers and non-breachers have nearly no discernable difference between their overall debt profiles. In particular, the typical breacher is carrying approximately $82,000 in debt, which represents about 120 percent of their annual income. The typical non-breacher, by comparison, carries $84,000, which is a bit less than 100 percent of their annual household income. The data indicate that overall, debt loads are not strongly associated with the likelihood that a



Source: Author's analysis of the 2010 SCF



Source: Author's analysis of the 2010 SCF

particular worker will breach their retirement savings. This is a somewhat surprising finding in light of the evidence we reported in the previous section that found non-breaching households have considerably more valuable assets than non-breachers. One would expect their debt to also be higher, but we find that there is no relationship here between the two types of households.

However, there is a strong relationship between credit revolvers and breaching. In particular, 56 percent of breachers revolve their credit cards every month, which means that they do not pay off their balances every month and pay interest rate fees. In contrast, 43 percent of non-breachers revolve their cards. Although credit card debt is a fraction of the overall debt carried by the typical household and DC participant, it is a strong indicator of a deeper inability of households to manage their money effectively. Revolvers, by definition, spend more than they make, and are unable or unwilling to pay off their balances with their monthly income. This, in turn, is indicative of the broader financial health problems that lie at the heart of a household's decision to breach their DC plans.

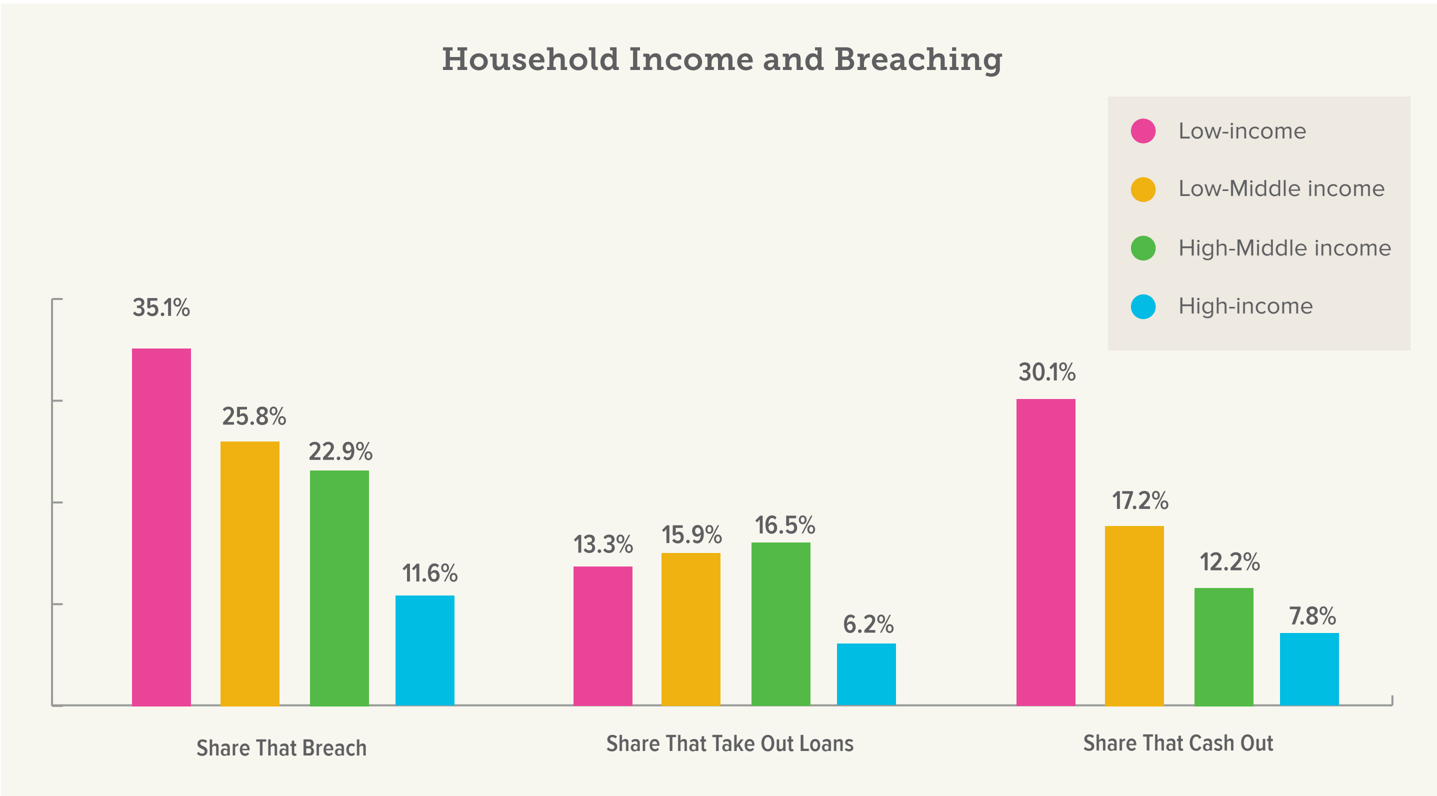
Income

We expect that household income is negatively related to breaching, since lower income households face higher prices for basic necessities and therefore have smaller disposable income margins.[30] That household finance dynamic should make it relatively more difficult for lower income households to keep up with their bills and basic financial responsibilities, spurring them to breach their DC plans at greater rates than higher income households. We measure household income as the sum of all income, which includes all of the worker wages generated in the household, in addition to dividend, rental, interest, and other income.[31]

We find that household income is also strongly related to breaching. As income increases, the probability that a worker will breach their retirement savings linearly decreases. For the lowest income workers living in households that earn less than $50,000 a year, they have a 35 percent chance of using or all or some of their DC balance on non-retirement needs. Similarly, 26 percent of households earning modestly more, between $50,000 and $100,000, will use their balance for non-retirement spending. But, just 12 percent of households earning more than $150,000 will breach their 401(k) balance.

However, there are acute differences in how those breaches occur across income groups. Cash outs, for instance, are sharply more likely to occur among households with low-income workers. Over 30 percent of households that earned less than $50,000 cashed-out their DC balance for non-retirement purposes. In contrast, 12 percent of households that earned between $100,000 and $150,000, and 8 percent households that earned more than $150,000 cashed-out their balances. That propensity to cash-out balances is high across all income groups, but low-income households are much more likely than any other income group to exercise that option.

These findings are consistent with other work that finds lower-income households have lower job tenures when compared to higher-income households.[32] Since cash-outs are only allowable when a termination occurs, lower income households are given more opportunities to cash-out compared to higher-income households.



Source: Author's analysis of the 2010 SCF

Some sponsors also believe that a DC plan may perversely encourage lower wage workers in high employment industries to leave their jobs to get access to their DC balances, an incentive that may be particularly strong among low-income workers because the job-switching costs are relatively lower.[33] We examine this in more detail below when we consider why people choose to self-report that they are breaching their balances.

Loans, on the other hand, are the most prevalent breach option among middle-income households. While just 13 percent of participants in the sample earning less than $50,000 had an outstanding DC loan, about 16 percent of households earning between $50,000 and $150,000 were currently breaching their DC balances with a loan. At 6% households earning more than $150,000 were the least likely income group to have an outstanding loan.

Similar trends exist with other types of traditional, consumer debt. For instance, one recent study found that lower-income households were much less likely than higher-income households to borrow traditional forms of capital.[34] However, lower-income households are much more likely to consume higher cost non-traditional debt, such as payday loans and pawnshops.[35] The relatively low consumption of low-cost traditional debt and high-cost non-traditional debt among low-income households is usually attributed to the fact that they generally have a relatively more risky credit profile, which may prevent them from accessing traditional credit markets. But, the findings here on 401(k) loans suggest an alternative explanation, since there is no credit assessment before a participant borrows money from their own DC account.[36] Instead, these divergent trends may be driven by the fact that lower-income households are less likely to understand or get access to the benefit guidance they need to get loans. We assess that possibility in our statistical modeling in Appendix 1.

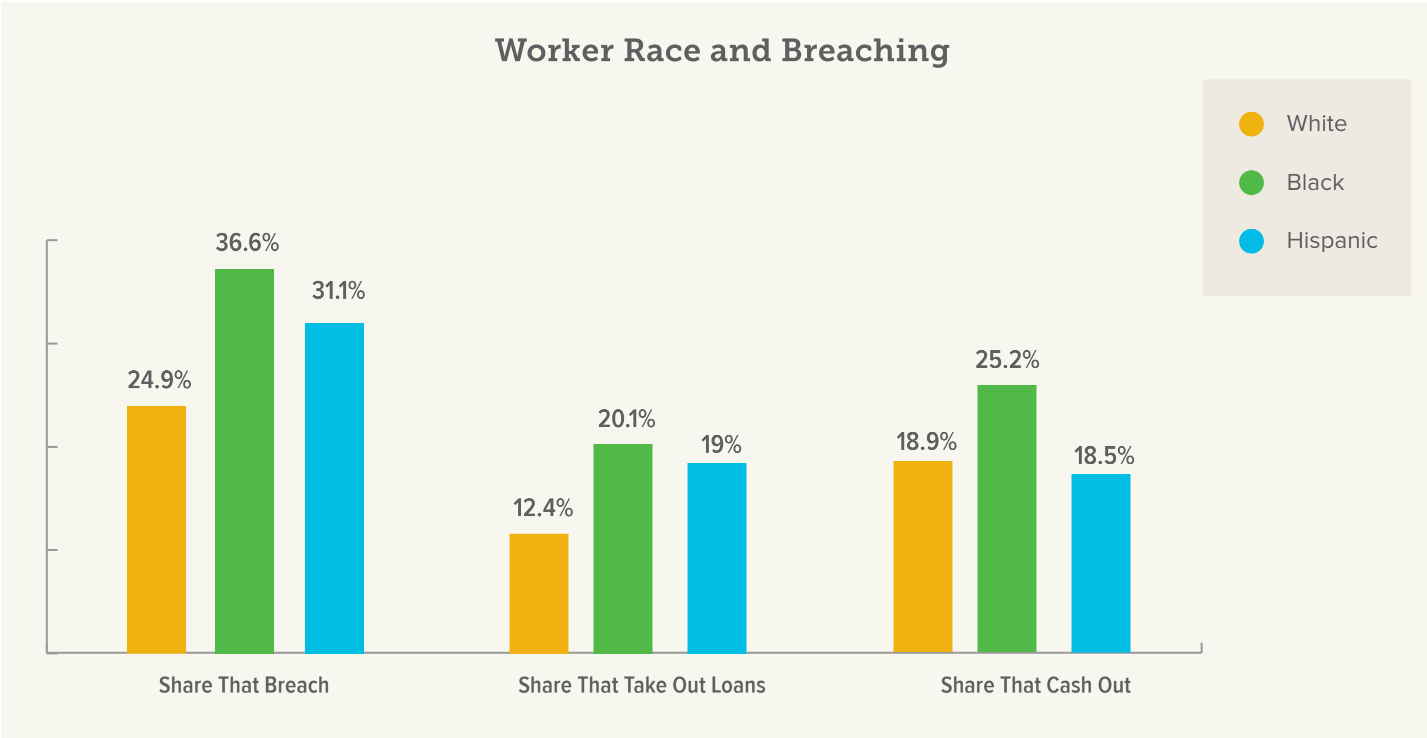
Race

The relationship between race and breaching is important to consider because of long-established evidence that minorities have less wealth and education, and fewer opportunities to save, making them potentially more likely to breach their DC savings compared to White households.[37] Although, the data on race and ethnicity is unfortunately very limited in the SCF, we are able to reliably assess the statistic differences between White, Black, and Hispanic households.

We find that the race of a worker is also related to breaching, although this relationship is weaker compared to other worker characteristics we examine. We also find in our models presented in Appendix 1 that the effect of race on breaching is not significant after other financial and demographic variables are accounted for.

In particular, the descriptive data indicate that over 36 percent of Black DC participants have breached their plans for non-retirement spending. Similarly, over 30 percent of Hispanic workers breach their savings. White workers are less likely than both minority groups, but nearly 25 percent have breached their DC balances for non-retirement spending.

These findings are similar to extant work that finds Black and Hispanic workers have lower levels of accumulated wealth and are less prepared for retirement compared to other households.[38] Their higher propensity to dip into their DC balances for non-retirement spending is a contributor to these trends. If minority households are more likely than White workers to use their DC balances for non-retirement spending, their capital has less relative time to mature in the capital markets. This compounds the savings difficulties they face, due to the fact that they are starting with systematically lower deferral rates and extant asset values.[39] Minority households have trouble accumulating assets if they save less and are more likely to dip into their savings compared to other households. Black and Hispanic workers also have shorter average job tenure, which may give them more opportunities to use their 401(k)



Source: Author's analysis of the 2010 SCF

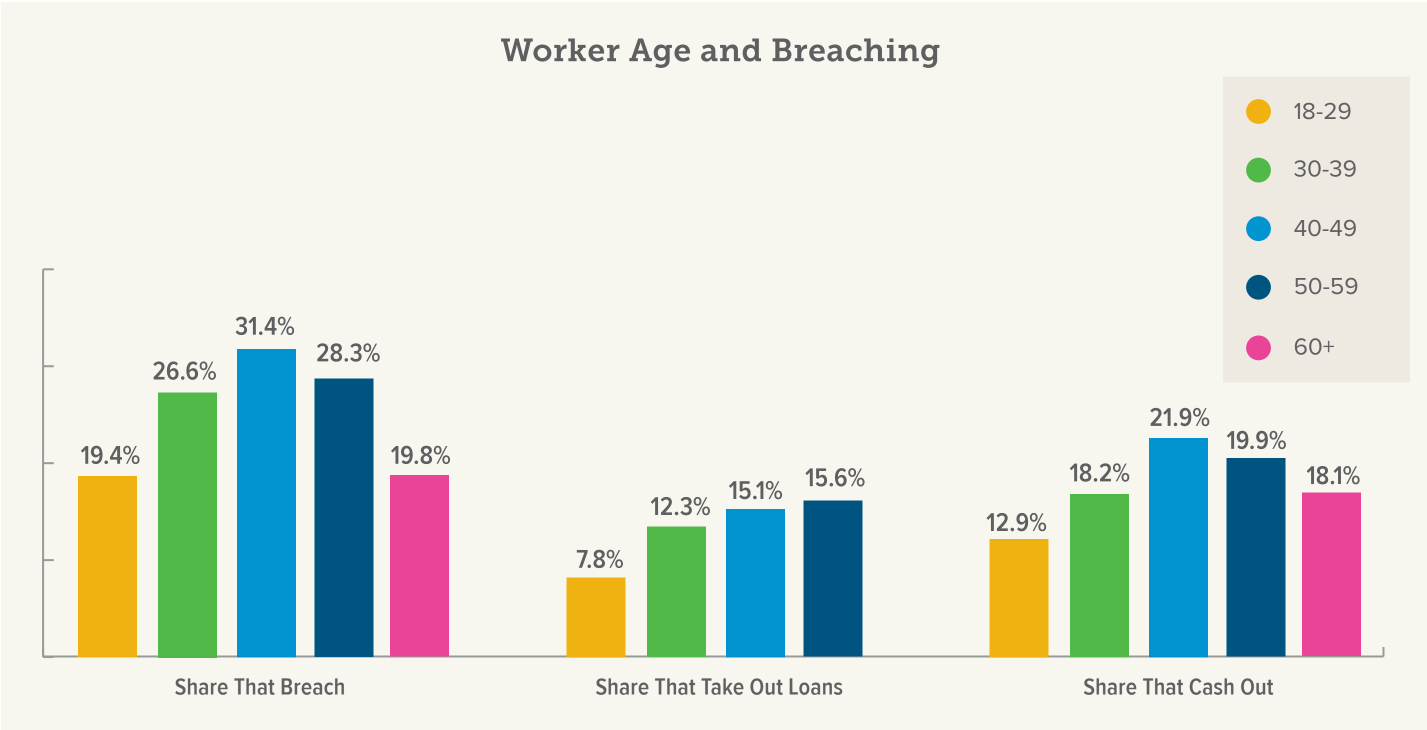
balances for non-retirement needs compared to their White counterparts.[40]

Differences also exist between racial groups in their utilization of different breaching vehicles. In particular, over 25 percent of Black participants have cashed-out their DC balances for non-retirement spending, while about 18 percent of both White and Hispanic workers have cashed-out their balances. However, the incidence of loans across the different racial groups suggest a different trend. For that breaching type, both Blacks and Hispanics are nearly twice as likely as households headed by White workers to have a current loan. In particular, about 20 percent of households headed by a Hispanic or Black worker have a current loan, compared to about 12 percent of households headed by a White worker.

However, minority households are much less likely than White households to borrow more traditional forms of credit. The share of minority-headed households with credit card, installment, and mortgage loans are all lower compared to households headed by White workers.[41] This is generally attributed to the fact that minorities have less access to credit compared to their White counterparts, in part because their credit scores tend to be lower.[42] In this instance, there is no credit review for a 401(k) loan, indicating that minorities may be substituting their 401(k) balances for debt that they would otherwise assume in the traditional capital markets.

Age

We next consider the relationship between age and breaching. We often hear from sponsors that they think younger workers are more prone to breach, since these workers are less focused on long-term retirement savings needs than older workers. Given that observation, one would expect that age has a negative relationship with breaching. On the other hand, the probability that a household will breach may increase over time, as their financial lives become more complicated and more financial demands are placed on their scarce resources. To consider that relationship, we assess the association between the age of the working head of household



Source: Author's analysis of the 2010 SCF

and the propensity of the household to breach their DC plans.

Worker age has one of the strongest associations with breaching that we find in this analysis. Workers between the ages of 40-49 are the most likely to have breached their DC balances for non-retirement spending. Nearly 1 in 3 households in that age demographic has withdrawn all or a portion of their DC accounts for non-retirement spending needs. The next most likely group to have breached their retirement savings are households with workers between 50-59. Conversely, households with workers between the ages of 18-29 are the least likely to have used their DC balances for non-retirement spending.

However, we are sensitive to the fact that our definition of breaching may be driving this trend, since the propensity to breach may increase as workers stay in the workforce longer. For that reason, we run another analysis that just considers the likelihood that workers currently have a loan or have recently breached within the years prior to survey administration. We find that the trend is identical within this sub-population: workers between 40-49 are still the most likely to breach their DC balances. However, when we just look at the population that has recently cashed out their DC balance, we do find support for the popular perception that younger workers are the most likely to breach.

These data clearly indicate that the breach threat actually increases as workers age. Workers may be more tempted to withdraw these funds as their balances grow. Similarly, their need for alternative funds may grow as they age. By the time workers hit their 40s, they are highly likely to be burdened with mortgages, revolving credit card debt, and have kids in high-school or on their way to college. Tapped out of credit alternatives and facing more spending demands than they have or will encounter at any other time in life, these households look to their DC balances as a form of short-term capital.

Education

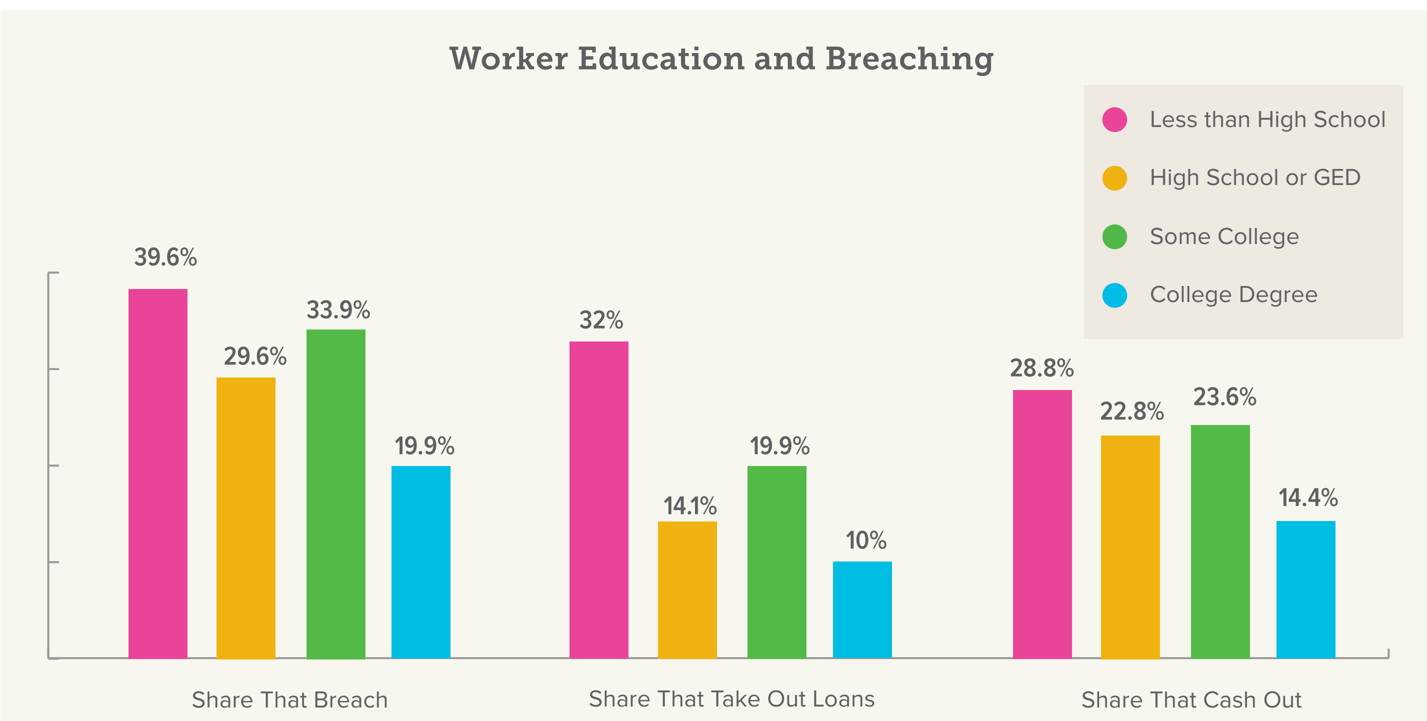
The last household characteristic we consider is the relationship between breaching and the educational level of the working head of household. Research has found that educational attainment is strongly correlated with financial literacy, which may indicate that workers are less likely to breach if they are highly educated compared to less educated workers. We measure education by looking at the differences between educational attainment categories: no high school degree, high school degree, some college experience, and college degree.

We find a sharp distinction between the breaching rates of college graduates and all other workers. In particular, 30 percent or more of workers that lack a college degree have breached their retirement savings for non-retirement spending, compared to about 20 percent of workers with at least a college degree. Both rates are high. But, a college degree ensures that workers have a lower probability of breaching their retirement savings.

The strong relationship between education attainment and breaching may be driven by a number of factors. Investment outcomes, for one, are associated with education attainment, which may suggest that workers will be less likely to withdraw retirement funds for non-retirement purposes as their education increases.[43] Educated workers may be more focused on driving long-term wealth creation than less educated workers. Another potential driver is related to the finding that education is associated with various job outcomes, including pay and length of tenure.[44] In this case, it could be that less educated workers will face a higher likelihood of needing retirement savings for non-retirement spending needs compared to more educated households.

DC Plan Design

Finally, we consider the effect of plan design on the propensity to breach retirement savings. Unfortunately, our plan data are quite limited, so we limit our analysis to just one plan design component: the effects of employer matches on motivating employees to breach their DC balances. We also have to limit the breaching analysis to only consider loans, since the SCF does not ask survey participants who have taken full distributions which plans they took those distributions



Source: Author's analysis of the 2010 SCF

from. The expectation is that employers that defer the wages of their employees by contributing to a DC plan may create a perverse incentive for their employees to borrow money from their plans to access those deferred wages or even worse, leave their jobs to get access to those funds.[45] We only test the effect of loans and are unable to consider the job tenure dynamic.

We find that employees are not more likely to take loans from their DC plans if their employer sponsors a match contribution. About 14 percent of employees who work at an employer with a match have withdrawn up to half of their DC balance for non-retirement spending, compared to about 13 percent of households working at an employer without a match. However, this lack of a relationship may say as much about the limitations of the plan data in the SCF data as it does about the underlying relationship. Besides the lack of data on participants who take full distributions, the existing plan data does not include information about vesting schedules, match specifics are sparse, and the historical performance in the accounts is not available. Together, these data indicate that more work needs to be done on the relationship between breaching and plan designs with richer data.

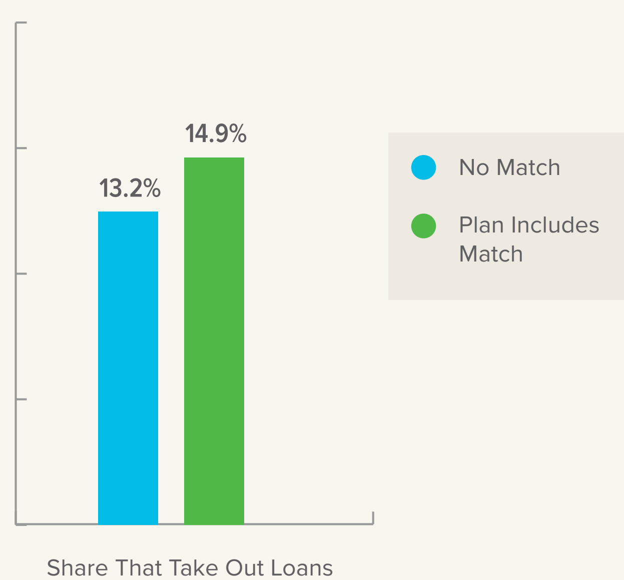
Why Do Workers Breach Their DC Plans?

Workers who live in financially unhealthy households are the most likely to breach their retirement savings, regardless of their other household, personal, or plan characteristics. We also find that low-income and minority workers, as well as those workers between the ages of 40-49 years old are the most likely to withdraw from their retirement savings.

In this section, we consider the self-reported reasons why households breach. Unfortunately, the data only ask survey respondents this question if they take a full distribution of their DC plan. However, cash-outs are the most common form of breaching, and we find in the previous section that the household and plan characteristics are highly correlated across different forms of breaching.

Basic money management problems are by far the most common reason cited for cashing out a DC plan. In particular, 73 percent of the households that cash-out their retirement accounts for non-retirement spending cite everyday basic financial management problems, from trouble paying bills to general expenses that they feel like they cannot keep up with.[46] Another 8 percent cite that they have cashed out their balances because they've lost their job. But, less than 6 percent of the entire population cite what might be called "frivolous" reasons, like the need to pay for a vacation or a consumer item of some form. Instead, the majority of households that cash-out their balance cite basic money management challenges as their primary motivation. This is consistent with the evidence presented in the previous section, which found that

Match Contributions and Breaching



Source: Author's analysis of the 2010 SCF

a lack of emergency savings has the strongest association with breaching.

Discussion and Conclusion

The findings in this paper show that the majority of DC participants are still on track to use their savings for retirement needs. However, a large and growing share are using these programs for non-retirement spending needs, amounting to over $70 billion in annual distributions by over 25 percent of all DC participants. Workers are now broadly voting with their wallets and demonstrating that they need retirement savings for non-retirement needs, in spite of the large, punitive penalties that are associated with most of that withdrawal activity.

We find a strong association between household financial health, income, race, age, and educational attainment. We also find that most measures of debt, either the absolute value or the debt-to-income ratio, are not strongly associated with breaching. The exception is households that revolve their credit cards, although that is one of a set of indicators that clearly indicates financial health has the strongest association with breaching. Households that have trouble managing basic financial needs are the most likely to breach, regardless of any other household or plan characteristics.

These findings have several implications for both employers and regulators. First, the findings suggest that retirement plan sponsors and administrators should carefully review the fact that a large and growing share of DC participants are receiving investment advice that is misaligned with their actual investment needs. Since more than 1 out of every 4 DC participants will use all or some of their balances for non-retirement spending, sponsors should consider requiring their investment advisors and management services to more effectively distinguish participants that are likely to actually use their DC plans for retirement. At large

Use of Cashouts	Percent Reporting Reason
Bill, loans, other debts	52.8%
Housing	12.3%
General expenses	10.7%
Other	9.1%
Expenses while laid off	7.5%
Savings	4.2%
Moving expenses	4.2%
Consumer purchase	3.2%
Family business or farm	3.1%
Medical	2.9%
Vacation or recreation	2.5%
Real estate	2.2%
Education	2.2%
Other savings or investment	2.1%
Taxes	1.9%
Investment	1.5%
Family or charity	1.5%
Save for retirement	1.1%
Other retirement program	0.7%

Note: Do not add to 100% because respondent could select multiple responses

Source: Author's analysis of the 2008 SIPP plans, this may be a very small share of the participants. Absent that consideration, participants will likely be defaulted into or receive guidance to choose equity and bond investments, which are inappropriate vehicles for short-term savings.[47] This challenge for sponsors is complicated further by the fact that no independent administrator or provider investment advice solution that we are aware of currently considers the likelihood that a worker will actually use their retirement savings for retirement in its investment advice. Rather, tools used to create custom line-ups, target date funds, managed accounts and investment advice generally make an unstated assumption that plan funds will be used for retirement. But, the data presented in this report and available to sponsors from their retirement plan administrators clearly indicate that a large share of participants will actually use those funds for alternative purposes.

Second, the evidence provides guidance about how plans can proactively take steps to reduce breaching in their population. As a basic first step, helping workers better manage their finances by reducing the prevalence of workers spending more than they make and meet their monthly recurring expenses could reduce the prevalence of breaching. Similarly, employers may very well consider proactively supporting emergency savings as an alternative to retirement savings, as the lack of emergency savings has the strongest association with the likelihood that workers will breach their retirement savings. Encouraging workers to save for emergencies prior to using the retirement savings program would potentially reduce the need to breach and both strengthen the integrity of a retirement plan and the sustainability of its assets over a worker's lifetime.

Third, the evidence indicates that further prohibiting distribution options for participants or insuring against a breach are potentially financially dangerous solutions for workers. Nearly all households that breach are financially unhealthy even after they receive distributions from their retirement savings. Draining money away from these participants to pay for insurance is only going to further exacerbate the basic money management problems that are strongly associated with breaching in the first place. Similarly, further restricting the access that participants have to their assets will only create greater financial strain in the workforce. For sponsors to address these issues, they must deal with the underlying causes of the breaching, which these data suggest is largely a function of a worker's inability to effectively manage their basic financial responsibilities and needs. There is a misalignment right now in the workforce between the advanced financial needs subsidized by employers and the basic financial needs of the U.S. workforce. Not addressing that root cause will only exacerbate the underlying financial problems.

Finally, the evidence indicates that the supervision of plans needs to extend past the current set of variables used by plan sponsors. The majority of plan sponsors that we talk to have never been provided with or asked their administrator to provide them with data on the breaching that is occurring in their plans. In fact, it is news to many sponsors that this trend exists and has existed for years. Plans need to know if they are incentivizing a share of their workforce to terminate their employment to get access to their DC balances, hence creating large unintended costs for their organizations. They need to know how many of their participants will actually use and value the benefit that they are subsidizing for its intended purposes. And, most importantly, they need to know that their workers are not being systematically pushed into overly risky investments with unnecessary fees, given that a substantive share (and a majority share at some large plans) will actually use their DC savings for short-term spending needs.

Appendix 1. Logit Model Results for Breach Outcomes

Variables	Current Loan	Any Leakage	Any Leakage	Any Cash-Out
Age	0.0093	0.0210***	0.0219***	0.0145***
	(0.284)	(0.000)	(0.000)	(0.000)
Age squared	-0.0001	-0.0002***	-0.0002***	-0.0001***
	(0.419)	(0.000)	(0.000)	(0.000)
Black	0.0372	0.0378	0.0436	0.0009
	(0.233)	(0.209)	(0.149)	(0.970)
Hispanic	0.0341	0.0031	0.0036	-0.0323
	(0.341)	(0.928)	(0.917)	(0.205)
Other Race	0.0039	-0.0606*	-0.0572	-0.0592**
	(0.918)	(0.084)	(0.109)	(0.030)
High School or GED	-0.0642**	-0.0546	-0.0616*	-0.0168
	(0.044)	(0.121)	(0.074)	(0.570)
Some College	-0.0399	-0.0134	-0.0220	0.0019
	(0.183)	(0.729)	(0.557)	(0.955)
College Degree	-0.1020*	-0.0953**	-0.1064**	-0.0424
	(0.053)	(0.022)	(0.011)	(0.195)
Low-Middle Income	0.0179	-0.0792***	-0.0802***	-0.0896***
	(0.421)	(0.000)	(0.000)	(0.000)
High-Middle Income	0.0380	-0.0873***	-0.0885***	-0.1109***
	(0.224)	(0.000)	(0.000)	(0.000)
High-Income	-0.0428	-0.1804***	-0.1789***	-0.1642***
	(0.113)	(0.000)	(0.000)	(0.000)
Has Children	-0.0159			
	(0.378)			
Insufficient Emergency Savings	0.1088***	0.0968***		0.0432**
	(0.000)	(0.000)		(0.014)
Revolve Credit Card Debt	0.0173	0.0581***	0.0668***	0.0345**
	(0.310)	(0.003)	(0.001)	(0.028)
Debt-to-Income Ratio	0.0030	0.0046*	0.0047*	0.0033*
	(0.506)	(0.073)	(0.075)	(0.097)
Employer Contributes to Retirement Plan	0.0105			
	(0.697)			
Intermediate Needs			-0.0755*	
			(0.078)	
Advanced Needs			-0.1115***	
			(0.002)	
Observations	**1,647**	**2,927**	**2,927**	**2,927**

Coefficients presented are marginal effects
pval in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix 2. Breach Proportions With Standard Errors

	Share That Ever Breach	Standard Errors	Share That Have Current Loans	Standard Errors	Share That Ever Cash-Out	Standard Errors
Total	**26.1%**	**1.0%**	**13.7%**	**1.0%**	**19.1%**	**0.8%**
Sufficient Emergency Savings	14.9%	1.6%	2.9%	1.0%	13.3%	1.5%
Insufficient Emergency Savings	29.8%	1.2%	16.7%	1.2%	21.0%	1.0%
Basic Needs	27.2%	1.0%	14.6%	1.1%	19.7%	0.9%
Intermediate Needs	18.7%	5.0%	1.3%	2.1%	18.0%	4.9%
Advanced Needs	7.7%	2.6%	1.1%	1.3%	7.1%	2.5%
Low-Income	35.1%	1.8%	13.3%	2.0%	30.1%	1.7%
Low-Middle Income	25.8%	1.7%	15.9%	1.8%	17.2%	1.4%
High-Middle Income	22.9%	2.4%	16.5%	2.5%	12.2%	1.9%
High-Income	11.6%	1.7%	6.2%	1.4%	7.8%	1.4%
White	24.9%	1.1%	12.4%	1.1%	18.9%	1.0%
Black	36.6%	3.3%	20.1%	3.5%	25.2%	2.9%
Hispanic	31.1%	4.0%	19.0%	4.0%	18.5%	3.3%
Age 18-29	19.4%	3.1%	7.8%	2.4%	12.9%	2.6%
Age 30-39	26.6%	2.1%	12.3%	1.8%	18.2%	1.8%
Age 40-49	31.4%	2.1%	15.1%	1.9%	21.9%	1.8%
Age 50-59	28.3%	1.9%	15.6%	1.9%	19.9%	1.6%
Age 60+	19.8%	1.9%	N/A	N/A	18.1%	1.8%
Less Than High School	39.6%	4.9%	32.0%	7.7%	28.8%	4.4%
High School Or GED	29.6%	1.9%	14.1%	1.9%	22.8%	1.7%
Some College	33.9%	2.5%	19.9%	2.8%	23.6%	2.2%
College Degree	19.9%	1.2%	10.0%	1.2%	14.4%	1.1%
No Match	N/A	N/A	13.2%	1.1%	N/A	N/A
Plan Includes Match	N/A	N/A	14.9%	2.2%	N/A	N/A

Endnotes

1. There are many different types of DC plans. Prominent examples include 401(k), 403(b), ESOP, and 401(a).

2. There are multiple estimates of DC plan coverage and participation. Since this paper relies on the Federal Reserve's Survey of Consumer Finances, we rely on the household estimate provided in: Alicia H. Munnell. 2012. "401(k) Plans in 2010: An Update from the SCF." Center for Retirement Research at Boston College, July 2012, Number 12-13. But, for a different interpretation of participation rates see John Turner, Leslie Muller, and Satyendra K. Verma. "Defining participation in defined contribution pension plans." 2003. *Monthly Labor Review*. Bureau of Labor Statistics.

3. Munnell (2012); and Authors analysis of the 2010 Federal Reserve Survey of Consumer Finances. These data points have to do with a number of factors, including persistently low 401(k) balances (the median is consistently around $17,000), uneven DC availability across employers, variable plan designs, a robust Social Security pension program, and the persistent preference of U.S. workers to use housing as their primary savings vehicle.

4. Importantly, though, the extant work focuses almost exclusively on just one form of breaching. One of pioneering studies of this problem was Leonard E. Burman, Norma B. Coe, William G. Gale. 1999. "What Happens When You Show Them the Money?: Lump-Sum Distributions, Retirement Income Security, and Public Policy." 1999. The Urban Institute. Report # 06750-003; more recent studies include John Beshears, James J. Choi, David Laibson, Brigitte C. Madrian. 2011. "The Availability and Utilization of 401(k) Loans." National Bureau of Economic Research, Working Paper 17118; and Aon-Hewitt. Leakage of Participants' DC Assets: How Loans, Withdrawals, and Cashouts Are Eroding Retirement Income. 2011; and Timothy Jun Lu and Olivia S. Mitchell. 2011. "Borrowing from Yourself: The Determinants of 401(k) Loan Patterns." University of Michigan Retirement Research Center, WP 2010-221.

5. The IRS provides a summary of these distribution rules as part of their 401(k) Resource Guide for Plan Sponsors.

6. Data on the volume of breaching is almost always systematically downward biased and attempts to address the sources of those biases create problematic levels of error. For the $60 billion estimate of taxable withdrawals, we rely on IRS tax receipt data, analyzed in Robert Argento, Victoria L. Bryant, and John Sabelhaus. 2012. "Early Withdrawals from Retirement Accounts During the Great Recession." Presented at the National Tax Association Annual Conference, November 2012. For a related analysis, see General Accounting Office. 2009. "Policy Changes Could Reduce the Long-term Effects of Leakage on Workers' Retirement Savings." Report to the Chairman, Special Committee on Aging, U.S. Senate, GAO-09-715 [but, please note the undercounting bias noted in this paper].

7. U. S. Department of Labor Employee Benefits Security Administration. 2011. "Private Pension Plan Bulletin: Abstract of 2009 Form 5500 Annual Reports," Table A3. Note that they estimate approximately $726 million of the outstanding loans defaulted in that year. Although total default volume is known to be substantially higher, attempts to define the size of that bias have been problematic. Finally, it is important to note that the primary unit of analysis in this paper is a dichotomous breaching event. We focus on that event because it indicates whether a household, at some point as a participant in a 401(k) plan, used the 401(k) sub-optimally as a short-term savings vehicle, exposing themselves to higher than necessary investment risk, management and administrative fees, and tax penalties.

8. U. S. Department of Labor Employee Benefits Security Administration. 2011. "Private Pension Plan Bulletin: Abstract of 2010 Form 5500 Annual Reports," Table A4.

9. For an indication of this trend, please see AON-Hewitt's limited analysis of 100 of the largest U.S. plans. AON-Hewitt. 2011. "Leakage of Participants' DC Assets: How Loans, Withdrawals, and Cashouts Are Eroding Retirement Income." 2011. The comparison of results in this paper with this extant work of the largest plans indicates that the breaching problem is most severe in the largest plans. Unfortunately, the data used in this report make it impossible to isolate very large plans from other plans.

10. All of the investment advice tools and companies that we have encountered in the large plan market do not consider that a large share of plan participants do not use their investments for retirement.

11. In particular, the SIPP data has the advantage of focusing on the individual consumer instead of the head of household focus in the SCF. For that reason, we used the SIPP to validate the individual-level findings in this analysis and confirmed that the associations reported in this paper are relationships that also exist in the SIPP.

12. For another discussion of these limitations please see in Argento, Bryant, and Sabelhaus (2012).

13. In fact, our consulting practice has found that most large U.S. employers are not provided with any breaching data as part of their regular quarterly reports from plan administrators and consultants.

14. In fact, we often encounter plan sponsors that have never considered breaching data and did not know that their plan providers have access to those data.

15. This estimate is derived from two sources. First, we find in the 2008 SIPP panel that 3 percent of active participants had withdrawn savings from the DC plans in the panel survey year. Second, Hewitt (2011) finds in a limited analysis of the 100 largest plans

that approximately 7 percent of plan participants had taken withdrawls from their DC plans in 2010.

16. For instance, Munnell (2012) finds that 401(k) balances are dependent on economic performance. While equity returns and contribution behavior contribute to this trend, the data in this paper indicate that families may also be more willing to breach their savings during these economic cycles. Also see Robert L. Clark and John Sabelhaus. 2009. “How Will the Stock Market Crash Affect the Choice of Pension Plans.” *National Tax Journal* 62(3): 1-20.

17. For a very interesting assessment of the difficulty near-retirement 401(k) plan participants have using their programs effectively, see James J. Choi, David Laibson, Brigitte C. Madrian. 2005. “$100 Bills on the Sidewalk: SubOptimal Saving in 401(k) Plans.” Working Paper 11554. National Bureau of Economic Research.

18. Argento, Bryant, and Sabelhaus (2012).

19. While those rates are high, they are still lower than reported elsewhere. For instance, Hewitt (2011) study found that 28 percent of participants have an outstanding loan, 7 percent have withdrawn funds for a hardship, and another share of workers will cash out their balances for non-retirement spending needs, which would suggest a number far higher than our 25 percent estimate. Similarly, Argento, Bryant, and Sabelhaus (2012) found that there was a 20 percent under-reporting of gross distributions in the SCF, compared to the IRS tax receipt data they analyzed. The discrepancy could be due to a variety of factors. Some extant studies, for one, only looks at a small sample of the largest plans in the U.S., whereas the data-source used in this analysis considers a representative sample of all U.S. households, regardless of the size of their employer. This is significant, in part, because EBRI has found that large plans are much more likely than small plans to offer loan programs to their 401(k) participants. Other reasons driving the discrepancy may be the year of the analysis, over-counting driven by treating individual breach events as individual participants, measurement error, or a sampling error.

20. Ibid

21. Please see the methodology section of this paper for a summary of the major sources of bias.

22. Argento, Bryant, and Sabelhaus (2012)

23. We look at simple associations in this section. However, please see Appendix 1 for a review of MLE models that we run to assess the independent effects of each of these variables.

24. There is no agreed upon value of “sufficient” emergency savings by financial planners. The Certified Financial Planner Board of Standards, for instance, provides no concrete guidance to its planners about the amount of emergency savings they should recommend to their clients. However, their public column and editorial work indicates a preference of about 9 months. We use a much more conservative number – just 3 months of emergency savings, since we are focused on households that are just a few paychecks away from economic catastrophe. However, if we used a more liberal number, like 9 months, the results in this analysis would only strengthen further.

25. There is very limited work on the relationship between economic shocks and breaching. The little work that does exist looks at major events (like a loss of job) or events that are found in extant work to largely be a function of financial health problems (like divorce). See, for instance, Argento, Bryant, and Sabelhaus (2012).

26. This is loosely based on the HelloWallet Financial Wellness Score™, which is a much more comprehensive assessment of the financial wellbeing of a household.

27. It is possible that these households had emergency savings prior to the withdrawal, but exhausted these savings before they took a distribution from their DC. Unfortunately, the SCF data make it impossible to directly establish this association. However, two data points suggest that these households’ DC balances represented all or nearly all of their savings prior to the distribution. First, most U.S. households lack sufficient emergency savings – over 70 percent; suggesting that there is a good chance that these households also had no or limited liquid savings prior to their withdrawal. Second, the SCF data do point to systematic money problems among breachers, suggesting that these money management problems likely existed before the withdrawal, in addition to after.

28. Ibid

29. As we discuss in the next section, only 7.5% of households that take full distributions indicate that they do so because they have been laid off.

30. Matt Fellowes. 2006. *From Poverty, Opportunity: Putting the Market to Work for Lower Income Families.* Washington, DC: The Brookings Institution.

31. We consider a linear measure of income, quartiles, and increments of $50,000, which is how we often hear sponsors think about income groups. We present the later, but there are no substantive differences between these measures.

32. Bureau of Labor Statistics. 2012. “Employee Tenure in 2012.” United States Department of Labor, USDL-12-1887.

33. We frequently hear this from large sponsors. We also discuss data in the next section that finds only 7.5% of participants that take full distributions indicate that they do so because they have been laid off. This stands in contrasts to the “wage-tilt” theory, which economists believe encourages pension recipients to extend their tenure at a firm if they will be eligible for growing

pension compensation. However, this theory does not contemplate the very real need large shares of DC participants have to smooth their short-term income to cover economic shocks, which they have no alternative sources of capital to address. For one explanation of this theory, see Richard A. Ippolito. 1997. *Pension Plans and Employee Performance: Evidence, Analysis, and Policy.* Chicago: The University of Chicago Press.

34. Matt Fellowes and Mia Mabanta. 2007. "Borrowing to Get Ahead, and Behind: The Credit Boom and Bust in Lower-Income Markets." Washington, DC: The Brookings Institution. Also see: Matt Fellowes. 2007. "Making Markets An Asset for the Poor." *Harvard Law and Policy Review.* 1 (2); and Patrick Bolton and Howard Rosenthal (eds). 2006. *Credit Markets for the Poor.* New York: Russell Sage Foundation.

35. Matt Fellowes and Mia Mabanta. 2008. "Banking on Wealth: America's New Retail Banking Infrastructure and Its Wealth-Building Potential." Washington, DC: The Brookings Institution.

36. This is because plan participants are essentially borrowing money from themselves.

37. Peter R. Orszag and Eric Rodriguez. 2005. "Retirement Security for Latinos: Bolstering Coverage, Savings and Adequacy." Washington, DC: The Brookings Institution and National Council of La Raza; William G. Gale, J. Mark Iwry, and Spencer Walters. "Retirement Saving for Middle- and Lower-Income Households: The Pension Protection Act of 2006 and the Unfinished Agenda." Washington, DC: The Brookings Institution; Ariel Education Initiative and AON-Hewitt. 2012. "401(k) Plans in Living Color: A Study of 401(k) Savings Disparities Across Racial and Ethnic Groups."

38. Peter R. Orszag and Eric Rodriguez. 2005. "Retirement Security for Latinos: Bolstering Coverage, Savings and Adequacy." Washington, DC: The Brookings Institution and National Council of La Raza; William G. Gale, J. Mark Iwry, and Spencer Walters. "Retirement Saving for Middle- and Lower-Income Households: The Pension Protection Act of 2006 and the Unfinished Agenda." Washington, DC: The Brookings Institution; Ariel Education Initiative and AON-Hewitt. 2012. "401(k) Plans in Living Color: A Study of 401(k) Savings Disparities Across Racial and Ethnic Groups."

39. Ibid.

40. Bureau of Labor Statistics (2012); also see Yingda Bi, Pia Orrenius and Madeline Zavodny. 2012. "Limited English Skills, Relative Youth Contribute to Hispanic Poverty Rates." Federal Reserve, Bank of Dallas, First Quarter 2012.

41. Fellowes and Mabanta (2007).

42. Matt Fellowes. 2006. "Credit Scores, Reports, and Getting Ahead in America." Washington, DC: The Brookings Institution; also see Matt Fellowes. 2008. "Financial Access without Expertise: Consumer Implications of the Credit Crisis." Presented at the 2008 Federal Reserve Board of Governors Credit Symposium.

43. For a suburb review of this literature and related work, please see John Y. Campbell. 2006. "Household Finance", Presidential address to the American Finance Association, *Journal of Finance,* 61:1553-1604, August 2006.

44. Bureau of Labor Statistics (2012); or Sean F. Reardon. 2011. "The Widening Academic Achievement Gap Between the Rich and the Poor: New Evidence and Possible Explanations," in Greg Duncan, Richard J. Murnane (eds), *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances,* New York: Russell Sage Foundation.

45. Please see earlier discussion of Ippolito (1997) and "wage-tilt" theory.

46. The reasons included in our definition of financial management problems include: paying bills and debts, general expenses, paying or saving for education, paying taxes, housing, and paying moving expenses. If we use a more conservative definition that only includes paying bills, debts, and general expenses, the portion citing these reasons is still over 58 percent.

47. EBRI consistently finds, for instance, that the majority of plan assets are invested in equities. This reflects an investment allocation assumption that the funds in these plans will actually be used for retirement, which a large, and growing value of, will not. See, for instance, Employee Benefit Research Institute. 2011. "401(k) Plan Asset Allocation, Account Balances, and Loan Activity In 2010." December 2011, Issue Brief #366.

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