The Mixed Bag of 401(k) Loans

Christian E. Weller, Ph.D.

Professor
Department of Public Policy and Public Affairs
University of Massachusetts Boston

and

Senior Fellow
Center for American Progress Action Fund
Washington, D.C.

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# Summary

The growth of retirement savings accounts such as 401(k) plans has raised key policy questions related to getting people to save more money for retirement than they have in the past. Giving employees the option to borrow from their 401(k) plans is, at least in theory, one tool to get people to save more money than they otherwise would in their retirement savings accounts. Current U.S. policy allows employees to borrow within limits from their own 401(k) plans as long as they are employed. Knowing that money will be available in an emergency or for large-scale purchases such as a first home should increase employees' willingness to put money into their retirement savings accounts. A number of research studies indeed suggest that there is a positive correlation between the ability to borrow from one's 401(k) plans and the share of earnings that employees contribute to their accounts. And households often borrow from their 401(k) because they have to—because a household member is sick, for example[1]—further underscoring that households indeed rely on their 401(k) savings in an emergency and may have knowingly contributed more to their savings plans than they otherwise would have.

There are downsides to 401(k) loans, though. Taking out a loan during one's working years can substantially reduce retirement savings—up to 22 percent if a household takes out a loan early in one's career and only slowly repays the loan.[2] And the link between being able to borrow from a 401(k) loan and contributions is substantially weaker among households that already have a hard time saving for the future because they lack financial sophistication, they are myopic, or they look for instant gratification than other households.[3] Furthermore, having the ability to borrow from one's 401(k) plan seems to be associated with more overall debt such as credit cards and mortgages, possibly because households feel that they can easily dip into their 401(k) plans if they encounter trouble paying back other loans.[4] That is, increased contributions due to the ability to borrow from one's 401(k) plan seem to be offset in some instances by households' characteristics and behavior in other aspects of their finances.

The distinctly mixed evidence on 401(k) loans points to several public policy lessons. First, 401(k) loans fill a critical role for the economic security of households. They tend to rely on those loans for a number of reasons, including paying bills when a household member is ill. Eliminating these loans could thus cause substantial economic hardships for some households.

Second, restrictions on 401(k) loans should remain in place. There is no evidence that households frivolously borrow from their 401(k) loans—the chance of borrowing and loan amounts are moderate, although both have been growing over time.[5] And households typically borrow from their 401(k) loans when access to other forms of credit is costly or unavailable, such as for down payments on a first home or for a college education.[6] Existing loan restrictions, especially on the reasons for taking out a loan from a 401(k) loan, seem to work and policymakers should keep those in place.

Third, there may be room to strengthen the link between a borrowing option from and contributions to a 401(k) plan. The evidence suggests that the link is particularly strong for households, who already handle their finances well, while the link is weaker for households, who seem to struggle in managing their finances in other areas. One possibility may be to make the borrowing option contingent on past contributions. A plan that has a default contribution rate of 3 percent of earnings, for instance, could grant employees the option to borrow from their 401(k) plan if they contributed more than the default contribution rate—four percentage points more, for example (that is, if they contributed at least 7 percent of earnings during the past 12 months or 24 months).[7] The additional required contribution could be lower than this and could be phased in—it is important that the loan option is contingent on additional contributions. The borrowing option would no longer exist if contributions were on average lower than the minimum during the look-back period.

# Introduction

Dear Chairman Harkin, Ranking Member Alexander, and members of the committee, thank you very much for inviting me here today to discuss my research on 401(k) loans.

The Great Recession of 2007–2009 put the issue of inadequate retirement savings into sharp relief. Many U.S. households had insufficient savings to maintain their standard of living in retirement well before 2007, but the loss of wealth during the crisis meant that 60 percent of households were not fully prepared for retirement in 2009.[8] The majority of U.S. households had saved too little just as the baby boomer generation started to enter the retirement phase of their lives.

Households clearly need more retirement savings than they have now and they need more than previous generations did. Life expectancy has increased, the growth of Social Security benefits has slowed such that those benefits have declined relative to households' preretirement earnings, fewer households have defined-benefit pensions than in the past, and rising health care costs will require additional spending from retirees.[9] The bottom line is that households need to save more than they have in the past just to maintain their standard of living in retirement.

Public policy in the United States incentivizes savings by giving employees the option to contribute to a range of retirement plans on a tax-advantaged basis. Contributions to these retirement plans typically are not subject to income taxes and neither are capital gains that accumulate in these savings accounts during employees' working careers. Employer-sponsored retirement savings plans such as 401(k) plans are the most common form of these tax-advantaged retirement savings. And employees typically decide how much to contribute to their 401(k) plans,[10] although there are frequently employer contributions to their employees' retirement savings accounts as well. The widespread lack of adequate retirement savings outside of Social Security suggests that contributions to all types of retirement accounts, especially 401(k) plans, are likely too low.

Allowing employees to borrow from their 401(k) plans, for instance, should theoretically raise employees' contributions to their accounts. Current U.S. policy indeed allows employees to borrow within limits from their own 401(k) plans as long as they are employed. Knowing that money will be available in an emergency or for large-scale purchases such as a first home should increase employees' willingness to put money into their retirement savings accounts. A number of research studies indeed suggest that there is a positive correlation between the ability to borrow from one's 401(k) plan and the share of earnings that employees contribute to their accounts. And households often borrow from their 401(k) because they have to—because a household member is sick, for example[11]—further underscoring that households indeed rely on their 401(k) savings in an emergency and may have knowingly contributed more to their savings plans than they otherwise would have.

There are downsides to 401(k) loans, though. Taking out a loan during one's working years can substantially reduce retirement savings—up to 22 percent if a household takes out a loan early in one's career and only slowly repays the loan.[12] And the link between being able to borrow from a 401(k) loan and contributions is substantially weaker among households that already have a hard time saving for the future because they lack financial sophistication, they are myopic, or they look for instant gratification than other households.[13] Furthermore, having the ability to borrow from one's 401(k) plan seems to be associated with more overall debt such as credit cards and mortgages, possibly because households feel that they can easily dip into their 401(k) plans if they encounter trouble paying back other loans.[14] That is, increased contributions due to the ability to borrow from one's 401(k) plan seem to be offset in some instances by households' characteristics and behavior in other aspects of their finances.

The distinctly mixed evidence on 401(k) loans points to several public policy lessons. First, 401(k) loans fill a critical role for the economic security of households. They tend to rely on those loans for a number of reasons, including paying bills when a household member is ill. Eliminating these loans could thus cause substantial economic hardships for some households.

Second, restrictions on 401(k) loans should remain in place. There is no evidence that households frivolously borrow from their 401(k) loans—the chance of borrowing and loan amounts are moderate, although both have been growing over time.[15] Most households borrow from their 401(k) plans, if they do so at all, to pay for large-scale expenses, for which other credit is costly or unavailable—for a down payment on a first home or for a college education, for example.[16] Existing loan restrictions, especially on the reasons for taking out a loan from a 401(k) loan, seem to work in getting people the money that they need, while preventing the financing of conspicuous consumption. Policymakers should keep those in place.

Third, there may be room to strengthen the link between a borrowing option from and contributions to a 401(k) plan. The evidence suggests that the link is particularly strong for households who already handle their finances well, while the link is weaker for households who seem to struggle in managing their finances in other areas. One possibility may be to make the borrowing option contingent on past contributions. A plan that has a default contribution rate of 3 percent of earnings, for instance, could grant employees the option to borrow from their 401(k) plan if they contributed four percentage points more, for instance—that is, if they contributed at least 7 percent of earnings during the past 12 months or 24 months.[17] The minimum required contribution for having the loan option could differ or could be phased in as long as there is a requirement for additional contributions to 401(k) plans. The borrowing option would no longer exist if contributions were on average lower than the minimum during the look-back period.

## Background on 401(k) loans

A 401(k) loan enables the borrower to act like a bank to himself or herself, albeit within some limits.[18] Households that have the option to borrow from their 401(k) plan can borrow up to $50,000, or one-half the vested balance from the account, whichever is less. Loans must be repaid within five years, except for loans that have been taken out for the first-time purchase of a home. Home loans for first-time purchases can be repaid over a period of up to 15 years. Loan repayment is not tax deductible and neither are interest payments unless the primary residence secures the loan.

The interest rates on these loans are generally favorable. Of those 401(k) plans that allowed borrowing, approximately 70 percent charged an interest rate equal or less than the prime rate—the rate that banks charge their best customers—plus one percentage point in 1996, according to the Government Accountability Office in 1997.[19]

Borrowers can incur penalties if they fail to repay their pension loan. The outstanding loan amount is then considered a taxable distribution from the 401(k) plan and subject to income tax on the outstanding loan amount plus an additional 10 percent as excise tax. The excise tax disappears for borrowers over the age of 59 ½.

401(k) loans have risen over time.[20] More people have 401(k) plans; their account balances have grown, and with them the ability to borrow from their 401(k) plans; and employers have made the loan option more widely available, leading to more people borrowing from their 401(k) plans. Data from the major mutual fund firms, which handle most of the assets in 401(k) plans, for example, show that 21 percent

of 401(k) plans showed an outstanding loan in 2011. This share had risen from 18 percent in 2007 and 2008 to 21 percent in 2009 and thereafter.[21] The average loan balance has hovered around $7,000 from 1998, the first year for which data are available, to 2011 and stood at $7,027 in 2011.[22]

Table 1 summarizes the probability and amount of 401(k) loans in 2010, the last year for which data from the Federal Reserve are available.[23] These data show a 12.1 percent chance of having an outstanding loan in 2010 if the household has a 401(k) plan—the highest share on record, dating back to 1989. And the average loan amount totaled $13,976 in 2010, which is again the highest on record.

TABLE 1

**Probability of having a 401(k) loan and average 401(k) loan amounts by select demographic characteristics, 2010**

| Categories | Has 401(k) loan, contingent on having a 401(k) plan | Amount of 401(k) loan, if household has such a loan |
|---|---|---|
| Total | 12.1% | $13,976 |
| **Age** | | |
| 18 to 24 | 7.0% | $584 |
| 25 to 34 | 9.1% | $4,916 |
| 35 to 44 | 14.9% | $6,966 |
| 45 to 54 | 13.8% | $8,781 |
| 55 to 64 | 11.5% | $44,921 |
| 65 and older | 3.1% | $2,026 |
| **Race/ethnicity** | | |
| White | 10.9% | $8,521 |
| Black | 18.6% | $3,963 |
| Hispanic | 17.3% | $11,797 |
| **Income** | | |
| Bottom quintile | 3.6% | $19,175 |
| Second quintile | 11.1% | $2,320 |
| Middle quintile | 13.7% | $6,939 |
| Fourth quintile | 13.2% | $6,891 |
| Top qunitile | 11.2% | $27,017 |
| **Personal characteristics** | | |
| Self-identifies as saver | 9.8% | $20,966 |
| Planning horizon of more than five years | 10.1% | $11,566 |
| Relies on professional advice for investments | 11.2% | $18,538 |
| Homeowner | 12.1% | $16,435 |

Notes: Calculations based on: Board of Governors, Federal Reserve System, "Survey of Consumer Finances" (2012). All demographic characteristics refer to the head of household. Racial and ethnic categories are mutually exclusive. Income refers to normal household income. The upper limit for the bottom income quintile was $20,330, $35,578 for the second quintile, $57,941 for the third quintile, and $94,535 (in 2010 dollars) for the fourth quintile. Self-identified savers are those househols who indicated that they save regular or irregular amounts each month. Professional investment advice refers to investment advice from regulated professionals such as lawyers, accountants, investment brokers, insurance brokers, and certified financial planners.

The data summary further shows that the probability of having a loan and the average loan amount tend to move in opposite directions. That is, some population groups such as African Americans have a high probability of having a 401(k) loan but below-average loan amounts, while other population groups such as self-identified savers show comparatively low probabilities yet large loan amounts. (see Table 1) Low probabilities and large loan amounts tend to reflect large savings both in retirement accounts and elsewhere, which lower the need to borrow but also give households more assets in their 401(k) assets to borrow from.

## The economics of 401(k) loans

Standard economic theory suggests that offering households the option to borrow from their 401(k) plans is unambiguously desirable since it should increase contributions beyond where they otherwise

would be. A more nuanced perspective that accounts for potential heterogeneity in households' outlook on the future and for differences in households' savings behavior as a result finds indeed differences in contributions between groups of households, although the 401(k) loan option indeed increases 401(k) contributions.

## 401(k) loans and contributions in standard economic theory

Standard life-cycle models of consumption and saving in economics indicate that the 401(k) loan option will likely increase retirement savings. The assumption in these models is that well-informed workers have stable lifetime preferences, will save in accordance with these preferences, and will save optimally to maintain a preferred level of consumption over their lifetime. With fixed preferences over time, there is no need for added incentives to save and thus also no need for precommitment devices such as limits on 401(k) loans.[24] Individuals and households will save less in their 401(k) plans if there is no loan option than if they can borrow. Alternatively, households will save more in their 401(k) plans if they have a loan option than if they didn't.

Research indeed finds that the borrowing option increases the contribution amount, consistent with the predictions of standard discounting in a life-cycle model. The Government Accountability Office, for instance, finds, based on the 1992 Survey of Consumer Finances, that when plans offered a loan option, workers significantly increased the contribution rate.[25] Similarly, Jack VanDerhei from the Employee Benefits Research Institute and Sarah Holden from the Investment Company Institute find that a loan option increased contribution rates by 0.6 percentage points compared to participants who did not have such a loan option.[26]

These analyses, though, ignore the potential heterogeneity of households and thus ignore the possibility of different effects of 401(k) loan options on household contributions—a point I will return to below.

Looking at reasons for 401(k) loans is another way to understand the standard economic model at work. Households should borrow in this model for unforeseen events, for which they will unlikely have access to other forms of credit.

The reasons for 401(k) loans are not widely studied, but evidence indicates that households borrow out of necessity from their 401(k) plans. An earlier study by two economists at the Federal Reserve summarized data from the 1998 Survey of Consumer Finances and found that 37.7 percent of loans from 401(k) plans were taken out for a home purchase, improvements, and repairs; another 21.6 percent of loans were borrowed to consolidate bills; followed by 16.5 percent for car purchases; and the remaining reasons being education (9.6 percent), nondurable consumption (8.5 percent), medical, legal, or divorce expenses (4.5 percent), and investment purposes (1.6 percent).[27] A later, more detailed study by Jeffrey Wenger and me finds that poor health is a consistent and statistically significant predictor of both the likelihood of having a 401(k) loan as well as the amount borrowed from a 401(k) plan. We also find that poor health is a more important determinant of 401(k) loans than homeownership and that households in poor health with 401(k) loans are most likely to use the loan proceeds to pay for health related expenditures.[28] The systematic link between health status and 401(k) loans suggests that households indeed use these loans when they encounter an unforeseen event, for which they cannot easily borrow from other sources.

This result leads to an obvious implication of 401(k) loans. Households may face economic pressures in the present that force them to borrow from their retirement savings plans. But the same pressures may slow repayment of the loan and make additional 401(k) plan contributions beyond the loan repayments difficult. A 401(k) loan essentially hits the pause button on accumulating new retirement savings and

gaining access to some of the tax advantages of a 401(k) plan until the loan is fully repaid. Gradual repayment and the lack of additional 401(k) contributions beyond the loan repayments can hence substantially slow retirement savings accumulations. The exact impact of a 401(k) loan on total retirement savings will depend on the interest rate charged for the loan, the interest rate earned on savings, whether the borrower keeps up with contributions to the retirement savings plan in addition to repaying the loan, and when the loan is taken out. A loan taken out early in a worker's career can reduce retirement savings by more than 20 percent, particularly if there are no additional 401(k) contributions beyond the loan repayments.[29]

## A behavioral economics view on 401(k) loans and contributions

Taking a loan from a 401(k) plan can have detrimental effects, even in the standard economic model, but the loss of potential retirement savings is likely to be small or even nonexistent if having the loan option leads to higher 401(k) contributions than otherwise would be the case.[30] Contributions not only need to be higher than they would be without a 401(k) loan option, but they need to be high enough to offset the potentially detrimental effects of taking a loan from a 401(k) plan.

This condition that additional contributions need to be high enough to offset the adverse effect of 401(k) loans on retirement savings is an important caveat. The standard economic model sees only one type of household saving for retirement. Allowing for heterogeneity in household behavior, though, can change the conclusion on the link between 401(k) loans, additional contributions, and retirement savings. Additional contributions may in some instances be too small to offset the negative effects of a 401(k) loan and the combined effect of taking a loan and additional contributions may still leave the household with less retirement savings than they would have had without a 401(k) loan option.

This may occur if households do not save optimally because people have dynamically inconsistent preferences, are myopic, or are unsophisticated such that their current desire for future savings is undone by their own future decisions to not save more—by borrowing from a defined-contribution plan, for example. Restricting access to savings before retirement could raise retirement savings and lifetime consumption and may enhance the total savings accumulation of this subset of households.

Jeffrey Wenger and I, in our most recent research on 401(k) loans, thus develop a methodology to separate households into two groups.[31] One group (Type A) represents standard discounting where people behave in ways that are consistent with the standard model and another group (Type B) comprises "inconsistent" discounting whereby households exhibit nonstandard economic behavior. There are many reasons why a household may demonstrate Type B behavior such as hyperbolic discounting, mental accounts, myopia, and lack of financial sophistication. The bottom line, though, is that there are households that systematically exhibit financial behavior that is inconsistent with optimizing financial outcomes.

We identify households that objectively engage in financial decisions that do not easily fit into an optimizing framework and thus their lifetime consumption as Type B households, while all others are Type A households. Specifically, if the household has an outstanding credit card balance beyond the grace period, they compare the credit card interest rate for the card with the largest balance to the interest rate on their home equity line of credit, or HELOC. Households with credit card interest rates larger than HELOC interest rates are Type B households. All other households are Type A households. This measures preference heterogeneity as any household that carries a credit card balance but also has

untapped home equity at a lower interest rate. The assumption is that these households are not optimizing in the standard way if they choose a higher-cost form of credit when a lower-cost one is available to them. Approximately 68 percent of households in the sample are Type A—a percentage that has varied from 59 percent in 1989 to 73 percent in 2001.[32]

The research shows that preference heterogeneity indeed matters for total retirement savings because of varying effects of the availability of 401(k) loans on 401(k) contributions. This research finds that the contribution rate for people with Type B preferences is about two-thirds lower than that of people with standard preferences when the borrowing option is present in 401(k) plans. Type A households increase their contributions by 3.7 percentage points of earnings in the presence of a loan option, whereas Type B households only increase their contribution by 1.4 percentage points.[33]

This research further finds that having the option to borrow from a 401(k) loan is also associated with more overall debt. One explanation is that households, who have the option to borrow from their 401(k) plans, may borrow more on their credit cards and mortgages than other households because they know that they can fall back on their 401(k) plans if they encounter problems in repaying their non-401(k) loans.

The combined effect of higher savings and more debt can again differ between households with different behaviors. Type B households, who contribute somewhat more with a 401(k) loan option than without, could see less retirement savings than in a situation where borrowing from a 401(k) plan would not be possible. Type A households, who show behavior consistent with optimizing financial outcomes, likely end up with more total savings because of the higher contribution rates than would be the case if borrowing from a 401(k) plan was not an option, even if they increase their total amount of debt.[34]

## Policy implications

The arrival of 401(k) loans creates a curious situation for households. They can save for themselves and borrow from themselves with the same financial instrument. The existing research on the implications of the ability to borrow from a 401(k) loans is somewhat limited, but a few key findings that are of policy relevance emerge nevertheless.

First, 401(k) loans fill a critical role for the economic security of households. They tend to rely on those loans for a number of reasons, particularly for paying for health care and other consumption when a household member is ill. Eliminating the ability to borrow from a 401(k) plan could thus cause substantial economic hardships for some households who already struggle financially.

Second, restrictions on 401(k) loans should remain in place. There is no evidence that households frivolously borrow from their 401(k) loans—the chance of borrowing and loan amounts are moderate, although both have been growing over time.[35] And summary data on the reasons for taking out these loans indicate that most loans are taken for large-scale projects for which other loan options are either costly or do not exist—for the down payment on a first home, for college education, and for health care and related consumption, for example.[36] Existing loan restrictions, especially on the reasons for taking out a loan from a 401(k) loan, seem to work and policymakers should keep those in place.

Third, there may be room to strengthen the link between a borrowing option from and contributions to a 401(k) plan. The evidence suggests that the link is particularly strong for households who already

handle their finances well, while the link is weaker for households who seem to struggle in managing their finances in other areas. One possibility may be to make the borrowing option contingent on past contributions. A plan that has a default contribution rate of 3 percent of earnings, for instance, could grant employees the option to borrow from their 401(k) plan if they contributed four percentage points more—that is, if they contributed at least 7 percent of earnings during the past 12 months or 24 months.[37] The additional contributions could vary and could be phased in over time as long as people needed to contributed more money to get access to the loan option in their 401(k) plans. The borrowing option would no longer exist if contributions were on average lower than the minimum during the look-back period.

Being able to borrow from one's 401(k) plan can prove valuable to households under the right circumstances. And policymakers can set the terms to make sure that households can balance present demands and future needs with their retirement savings in a thoughtful manner.

# Endnotes

[1] Christian E. Weller and Jeffrey B. Wenger, "Easy Money? Health and 401(k) Loans," *Contemporary Economic Policy* 30 (1) (2012): 29-42.
[2] Christian E. Weller and Jeffrey B. Wenger, "Robbing Tomorrow to Pay for Today" (Washington: Center for American Progress, 2008).
[3] Jeffrey B. Wenger and Christian E. Weller, "Boon or Bane: 401(k) Loans and Loan Provisions," unpublished manuscript, University of Georgia. Paper available from authors upon request.
[4] Ibid.
[5] Weller and Wenger, "Robbing Tomorrow to Pay for Today." Jack VanDerhei and others, "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2011" (Washington: Employee Benefits Research Institute, 2012)
[6] Weller and Wenger, "Robbing Tomorrow to Pay for Today."
[7] The recent estimate shows that the borrowing option increases contributions by 3.7 percentage points for households who have a good handle on their finances, but that the contribution increase is only 1.4 percentage points for households who do not have a good handle on their finances in other areas. Requiring an additional 4 percentage points for the loan option would thus make no difference for good financial planners, but it would boost retirement savings for households who arguably need a stronger commitment device to save for their retirement. Wenger and Weller, "Boon or Bane."
[8] Center for Retirement Research, "National Retirement Risk Index Fact Sheet No. 2" (2010).
[9] Working longer than in the past is an obvious theoretical alternative, but the experience of the Great Recession has shown that older households need to spend more time working longer exactly when fewer job opportunities are available. Labor and financial markets regularly move in tandem, so that the experience of older households in the Great Recession—looking for work after financial markets and labor markets crashed—is the rule not the exception. See: Christian E. Weller and Jeffrey B. Wenger, "Integrated Labor and Financial Market Risks: Implications for Individual Accounts for Retirement," *Journal of Aging and Social Policy* 21 (2) (2009): 256–276.
[10] This testimony uses 401(k) plans as shorthand to refer to all employer-sponsored defined-contribution accounts.
[11] Weller and Wenger, "Easy Money? Health and 401(k) Loans."
[12] Weller and Wenger, "Robbing Tomorrow to Pay for Today."
[13] Wenger and Weller, "Boon or Bane."
[14] Ibid.
[15] Weller and Wenger, "Robbing Tomorrow to Pay for Today"; VanDerhei and others, "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2011."
[16] Weller and Wenger, "Robbing Tomorrow to Pay for Today."
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percentage points for the loan option would thus make no difference for good financial planners, but it would boost retirement savings for households who arguably need a stronger commitment device to save for their retirement. Wenger and Weller, “Boon or Bane.”

[18] Government Accountability Office, “401(k) Pension Plans: Loan Provisions Enhance Participation But May Affect Income Security for Some,” GAO/HEHS-98-5, Report to the Chairman, Special Committee on Aging, and the Honorable Judd Gregg, U.S. Senate, October 1997.

[19] Ibid.

[20] Weller and Wenger, “Robbing Tomorrow to Pay for Today”; VanDerhei and others, “401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2011.”

[21] VanDerhei and others, “401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2011.”

[22] Ibid.

[23] Calculations based on the Federal Reserve’s triennial Survey of Consumer Finances. See: Board of Governors, Federal Reserve System, “Survey of Consumer Finances” (2012).

[24] B. Douglas Bernheim and Antonio Rangel, “Behavioral Public Economics: Welfare and Policy Analysis with Non-Standard Decision Makers.” Working Paper 11518 (National Bureau of Economic Research, 2005).

[25] Government Accountability Office, “401(k) Pension Plans.”

[26] Sarah Holden and Jack VanDerhei, “Contribution Behavior of 401(k) Participants” (Washington: Employee Benefits Research Institute, 2001).

[27] Annika Sundén and Brian Surette, “Households’ Borrowing from 401(k) Plans,” Paper presented at the Second Annual Joint Conference of the Retirement Research Consortium, “The Outlook for Retirement Income,” May 17-18, 2000, Washington, D.C.

[28] Weller and Wenger, “Easy Money? Health and 401(k) Loans.”.

[29] See: Government Accountability Office, “401(k) Pension Plans”; Alicia H. Munnell and Annika Sundén, *Coming Up Short: The Challenge of 401(k) Plans* (Washington: Brookings Institution Press, 2004); Weller and Wenger, “Robbing Tomorrow to Pay for Today.”

[30] For a detailed discussion of the implications of the standard economic model, see: John Beshears and others, “The Impact of 401(k) Loans on Saving.” Working Paper (National Bureau of Economic Research, 2010).

[31] This summary discussion and the results are based on: Wenger and Weller, “Boon or Bane.”

[32] Ibid.

[33] Ibid.

[34] This conclusion is based on simulations derived from the empirical estimates in: Wenger and Weller, “Boon or Bane.”

[35] Weller and Wenger, “Robbing Tomorrow to Pay for Today”; VanDerhei and others, “401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2011.”

[36] Weller and Wenger, “Robbing Tomorrow to Pay for Today.”

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