

SHOULD YOU BORROW FROM YOURSELF? THE DETERMINANTS AND EFFECTS OF 401(K) LOANS

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A majority of US private sector workers with pensions have defined contribution (DC) plans where they hold over \$2.8 trillion, and most plans permit participants to borrow against their retirement saving up to half their account balance (capped at \$50,000). As long as they repay on time, people need not pay income tax or other penalties, and the interest goes back to their own accounts. But plan borrowers who leave their jobs are required to pay back any remaining loan balance within 60 days. Failure to do so implies the loan is defaulted, and the participant must pay income tax plus a 10% penalty tax on the outstanding balance. This is one source of concern, since such “leakage” can erode retirement accumulations. Furthermore, it is possible that those who borrow from their 401(k)s may end up contributing less to their pension accounts after taking the loan, which could reduce their retirement account balances in the long run. With the recent economic downturn, there are also concerns that 401(k) loans might be climbing due to participants’ inability to obtain other forms of credit. For all of these reasons, plan sponsors and policymakers have expressed increasing interest in learning whether 401(k) loans are sensible in the pension context.

MODELING BORROWING FROM A 401(K) PLAN

This research project explores the factors affecting peoples’ decisions to take 401(k) loans. In the analysis that follows, and in contrast to most of the previous literature, we undertake a participant-level analysis of plan borrowing. To differentiate our work from previous studies, we look at 401(k) assets not only as retirement saving but also as precautionary saving to cover negative income or consumption shocks.

Our working paper (Lu and Mitchell 2010) builds a model of 401(k) plan borrowing where the advantage of taking the 401(k) loan is larger when the credit card rate rises, or if the interest rate on the 401(k) loan is lower. Also a lower expected return would induce people to be more likely to default on their 401(k) loans, as the opportunity cost of defaulting is smaller. (A participant who takes a 401(k) loan could elect to take a credit card loan to repay the 401(k) loan if it were more attractive than defaulting.) Thus, as long as the participant would be better off taking a 401(k) loan if she stays, her optimal choice is to take it without worrying about default.

METHODOLOGY AND FINDINGS

Our dataset on 959 pensions plans administered by Vanguard contains participant loan and repayment records tracked back to the 1980s as well as the loans’ status by end-June 2008. Most plans mark the plan borrowing rate to prime rate plus one percent, and on average, peoples’ plan loans averaged about \$8,300 (the median is \$5,000). Hence most people borrow relatively little from their pension accounts. Virtually no one exploits the entire loan and most of the time, people take less than 20 percent of what they are permitted to take.

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Plan Borrowing. We explore who borrows from their pensions and find that the probability of having a loan outstanding in any given month is about 19 percent; as hypothesized, people with lower household income and lower non-retirement financial wealth, most likely to be liquidity-constrained, are more prone to have 401(k) loans. Participants with lower account balances are more likely to have loans, and women are almost one percentage point more likely to have a loan outstanding than men, as are those with rollover funds in their accounts. It is interesting that plans which permit multiple loans have more workers with loans, and consistent with the buffer stock model, when sponsors allow one more loan, this boosts loan probabilities by 1.6 percent. Further, lower loan interest rates are associated with more loans though the effect is relatively small.

Loan Amounts. Next we examine the factors affecting loan amounts, focusing only on the subset of people who take a loan in each month, taking into account the IRS regulation as well as plan rules limiting loans. Findings indicate that middle-aged people are more likely to take larger loans, consistent with the hump-shaped lifetime consumption profile noted above. It is interesting that, although women were more likely to have a loan, men take larger loans, all else equal. Also the better off -- those with more non-retirement financial assets and income -- are more likely to take larger loans, perhaps because they can more readily repay the loan early in case of job change. As hypothesized, people with higher account balances take out higher loan amounts, which makes sense since those with higher balances have higher loan limits. Lower interest rates appear to boost the size of loans taken, though the effect is quite small. If a plan permits more loans, this reduces the size of each loan, supportive of the buffer stock view.

CONCLUSIONS

Some find it puzzling that people do not seem to use 401(k) loans to repay more expensive outside debt, but based on our model, we argue that people may wish to preserve a precautionary buffer for loans. That is, 401(k) plans can be seen not only as a vehicle for retirement saving but also as a medium for precautionary saving that can help protect against income or consumption shocks. Our evidence relies on a Vanguard dataset on loan behavior in almost 1,000 employer 401(k) plans. Results show that people who are liquidity-constrained are more likely to have 401(k) loans, but conditional on borrowing, the less-liquidity constrained take larger loans. We also find an inverted U-shape by age for plan borrowing and loan size. If the plan sponsor permits workers to take more loans, this boosts the probability of plan borrowing and loan size, but higher interest rates deter borrowing. These patterns are consistent with our model's predictions and other empirical findings. In sum, some plan borrowing is evidently driven by liquidity needs, while another portion is consistent with a rational life-cycle approach to retirement saving.

REFERENCE

Lu, Timothy Jun and Olivia S. Mitchell. "Borrowing from Yourself: The Determinants of 401(k) Loan Patterns." The Wharton School, September 2010.

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