

A WHITE PAPER

# The Real Cost of Loans

What employers and  
employees need to know  
about borrowing from  
workplace retirement plans

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# The Real Cost of Loans

## Key findings

1

**TAKING A WORKPLACE RETIREMENT PLAN LOAN HAS LESS OF AN IMPACT ON RETIREMENT SAVINGS FOR OLDER EMPLOYEES AND EMPLOYEES THAT CONTINUE CONTRIBUTING TO THEIR WORKPLACE RETIREMENT PLAN.**

2

**WHEN CONSIDERING A WORKPLACE RETIREMENT PLAN LOAN, EMPLOYEE SEPARATION NEEDS TO BE PART OF THE CONSIDERATION.**

3

**EMPLOYERS MAY WANT TO CONSIDER PLAN DESIGNS THAT INCLUDE PROVISIONS TO HELP EMPLOYEES PAY BACK THEIR LOANS AFTER SEPARATION FROM THEIR EMPLOYER.**

Ashley Patrick and her husband, both in their late twenties, took out a \$25,000 loan from his 401(k) account to pay for a home renovation. Then he lost his job, which triggered mandatory full repayment within 90 days. They didn't have the cash to pay off the loan, so the IRS treated it as an unqualified distribution subject to income tax and penalties. Today Ashley says they were naive about the loan; she estimates that if they'd left that money in the 401(k) account, it would have grown to about \$1 million by retirement.<sup>1</sup>

Ashley and her husband aren't alone. Many employees are tempted to borrow from their workplace retirement plans. At year-end 2016, 19% of all workplace retirement participants who were eligible for loans had loans outstanding against their 401(k) plan accounts.<sup>2</sup> The outstanding loans amounted to 11% of the remaining account balance on average.



<sup>1</sup> Ashley Patrick, phone interview with The Writing Company, May 2019.

<sup>2</sup> Jack VanDerhei, EBRI; Sarah Holden, ICI; Luis Alonso, EBRI; and Steven Bass, ICI, Employee Benefit Research Institute, "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2016," September 2018.

People commonly take loans from their retirement plans to pay for a down payment on a house, a wedding, a lifestyle upgrade like a new car or college.<sup>3</sup> But loan-eligible employees may not understand the true cost of borrowing against their nest eggs. Says Ashley: “I thought the 401(k) was collateral — I didn’t realize they actually took the money out. That was the first shock.”

### The real cost of a workplace retirement plan loan

Retirement-plan loans include several predictable costs:

- Loans carry an **origination fee**, typically more than \$75. This is a fixed cost, not a percentage of the loan.
- The **interest rate** on these loans is usually one to two percentage points above prime rate. **Loan payments (made through payroll deduction) include principal and interest, all of which are paid by the borrower back into their own account.** These payments are intended to help offset missed investment growth from the borrowed money.
- Money borrowed from a workplace retirement plan account is **repaid with after-tax money, and retirement withdrawals of those repayments will again be taxed as income.** Put another way, borrowers lose tax deferral on any cash they borrow from their plans.
- Since loans reduce the amount of money in the plan that can take advantage of tax-deferred growth, borrowers face **diminished power of compounding.** The length of time until retirement contributes to the **opportunity cost** of the lost compounding. Moreover, in a bull market the interest paid on the loan is unlikely to offset the missed investment return.

Workplace retirement plan borrowers also may encounter some other costs:

- Most plans call for **immediate repayment** (typically within 60-90 days) of the full loan balance if an employee leaves their job for any reason. This requirement relieves employers of the responsibility to administer loan payments for ex-employees, but it can create a hardship for workers who are terminated unexpectedly. About 10% of borrowers default on their loans on average. Some plans allow for installment repayment after separation — but with no automatic payroll deduction, the ex-worker is still a default risk.

As Ashley Patrick and her husband learned, a defaulted loan is treated like an unqualified distribution, so it triggers a 10% penalty as well as tax on the unpaid balance. “We went from

getting a \$4,000 tax refund to owing the IRS \$10,000,” she says. The cost of the tax and penalty was fully half the loan balance. “I was freaking out. I couldn’t sleep. I didn’t know how we were going to pay it.”

- In many cases, workers who borrow from their workplace retirement plan accounts **stop regular contributions** in order to pay back their loans. Some employer plans do not allow contributions during a loan repayment period. The suspension of contributions — and any forgone employer match they would have triggered — creates yet another opportunity cost.

## Quick facts for IRS 401(k) loan rules

**Can borrow (1) the greater of \$10,000 or 50% of your vested account or (2) \$50,000, whichever is less. If approved, the maximum amount you can borrow is \$50,000 or 50% of your vested account balance, which ever is less.**

**Payments must be made in substantially equal payments that include principal and interest and that are paid at least balance quarterly.**

**Loan repayments are not plan contributions.**

### Two types of loans:

- 1. If used for the purchase of a primary residence, a loan may be paid back over a period of more than five years, with the period length determined by the plan.**
- 2. If a loan is not for the purchase of a house, it must be repaid within five years.**

**Defaulting on a loan before age 59½ is considered an unqualified distribution subject to income tax plus a 10% penalty. Defaults may arise from job separation whether the separation is voluntary or involuntary.**

*For more information, visit [IRS.org](https://www.irs.org).*

<sup>3</sup> Wes Moss, *The Balance*, “Common Reasons People Take Loans from their 401(k),” April 2019.

We used the costs listed to develop three case studies of employees who take out loans at different ages.<sup>5</sup>  
 (See appendix A for the formula.)

All three use the following assumptions:

- Origination fee: **\$75**
- Loan amount: **\$8,000**
- Loan interest rate: **6.5%**
- Loan term: **36 months**
- Expected annual rate of return:<sup>4</sup> **5%**
- Income tax rate: **20%**
- Default probability: **10%**
- Retirement plan balance: **\$50,000**
- Retirement age: **67**
- Salary: **\$50,000**



### Case study 1

In Case Study 1, the worker is 25 years old. Assuming she stops contributing to her plan while repaying her loan, she would retire with \$76,104 less in her nest egg than if she hadn't taken the loan. That's a huge sacrifice to borrow \$8,000.

If she continues contributing to her workplace plan through the duration of the loan (taking advantage of her 3% employer match), she would face a gap of only \$907 at retirement.



### Case study 2

In Case Study 2, a worker is 40 years old when he borrows the \$8,000 against his plan. By the time he retires, he would have \$36,607 less in his plan, assuming he made no contributions during the loan repayment period. If he kept up with regular plan contributions and collects the employer match, he would face a gap of just \$436 total when he reaches retirement.



### Case study 3

Case Study 3 considers a borrower at age 55. If she made no contributions during the loan period, her savings at retirement would take a hit of \$17,608, but she'd face a gap of only \$209 total at retirement if she continued to contribute and collect the employer match.

## The impact of an \$8,000 loan on plan savings at retirement

Age when taking loan

	25	40	55
Stops contributing to plan while repaying loan and misses out on employer match	<b>-\$76,104</b>	<b>-\$36,607</b>	<b>-\$17,608</b>
Continues contributing to plan while paying loan and takes advantage of employer match	<b>-\$907</b>	<b>-\$436</b>	<b>-\$209</b>

<sup>4</sup> The actual rate of return is largely dependent on the types of investments selected. In these three case studies, we use the Great West Investments™ capital market assumptions on a typical 60% stocks and 40% bonds retirement portfolio to estimate the expected annual rate of return, which is approximately 5% annually."

## Putting it all together

Two conclusions stand out. First, the younger the borrower, the greater the impact lost market opportunity has on retirement savings over time. Second, foregoing plan contributions during the loan period may result in a big retirement shortfall.

## What are employers doing?

Among all plans on the Empower system, 77% allow for one loan. 401(k) and 403(b) plans are the most likely to offer loans, while 401(a) are the least likely.<sup>6</sup> One loan per employee is the average maximum number of loans allowed across all plan types and all plan sizes. As for loan balance, the average plan balance tends to be higher for employees in a mega plan.



## Percentage of plans that allow loans, by plan type

	401(a)	401(k)	403(b)	457
Loans offered	29%	80%	84%	57%
Max loans allowed	1	1	1	1
Average loan balance	\$7,491	\$7,492	\$6,116	\$7,730

## Percentage of plans that allow loans, by size

	Overall	Small plan (\$5M-\$50M)	Mid plan (>\$50M-\$250M)	Large plan (>\$250M-\$1B)	Mega plan (>\$1B)
Loans offered	77%	77%	85%	83%	83%
Max loans allowed	1	1	1	1	1
Average loan balance	\$7,841	\$7,797	\$8,074	\$8,057	\$8,362

*5 Case studies are shown for illustrative purposes only and should not be relied upon as advice or interpreted as a recommendation. Results shown are not meant to be representative of actual investment results. Past performance is not a guarantee, and may not be indicative, of future results.*

*6 As of August 31, 2019.*

## Implications for employers and advisors

Most plans let workers borrow against their nest eggs. Such loans can be prudent if employees pay them off on time and continue to make regular plan contributions — especially if a loan enables a worker to invest in a home. Loans can be costly when employees don't keep making contributions, and they can be especially problematic in the event employees lose or leave their jobs.

Employers and advisors should consider educating employees about the risks of taking loans from their workplace retirement plan accounts. They also can help employees calculate the savings gaps they could face as a result of borrowing from their long-term savings. Education should focus on:

- The cost of taking a loan for a younger worker compared with an older worker.
- The gap created by stopping regular plan contributions and foregoing the employer match.
- How to manage repayment in the event of job separation.

Employers also might consider working with recordkeepers to adopt plan provisions that make repayment easier for separated employees.

To pay off their IRS debt after defaulting on the loan payback, Ashley and her husband used a debt repayment plan and a zero-interest 18-month credit card. They could have done the same to pay off the loan itself within the 90-day deadline and avoided the income tax and penalties — but they didn't understand those implications at the time. In hindsight, Ashley says, "I wouldn't have taken the loan at all. I would have either not done the home renovation right away or figured out some other way to pay for it."



## Appendix A (assuming annual compounding)<sup>7</sup>

1

Account balance at the end of the time period T without 401(k) loan. (If no contribution is made during the term of the loan, then set C = 0 and M = 0.)

$$Bal_{without} = B * (1 + R)^T + \sum_{i=0}^T (C + M) * (1 + R)^T$$

2

Account balance at the end of the time period T with the loan. (Assuming if the borrower defaults on the loan, the default age is before 59½. If the age of default is older than 59½, then delete the 10% in the following formula. Also assumes default penalties and taxes are imposed at the end of the loan term if default occurs. If the payments are paid evenly throughout the loan term, then:

$$Bal_{with} = (B - L - F) * (1 + R)^T - Def\% * L * (10\% + Tax\%) + \sum_{i=0}^T PMT * (1 + R)^T \quad PMT = \frac{[L * I * (1 + I)^T]}{1 - (1 + I)^T}$$

(PMT refers to the payment function in Excel)

If the payment is made as a lump sum at the end of the loan term, then

$$Bal_{with} = (B - L - F) * (1 + R)^T - Def\% * L * (10\% + Tax\%) + L$$

3

The “true cost” of the loan is:

$$TrueCost = Bal_{without} - Bal_{with}$$

4

The “true annual simple interest” during the loan term is:

$$TrueInterest_{annual} = \frac{TrueCost}{L * T} + R$$

### Variable Definitions

**F** = origination fee

**L** = loan amount

**I** = interest rate

**T** = loan term

**R** = expected annual rate of return

**Tax%** = income tax

**B** = account balance before the loan

**Y** = years before retirement

**C** = pretax contribution

**M** = employer match

5

The “true annual simple interest” during the loan term considering the tax-deferred benefit lost over the T period is:

$$TrueInterest_{annual} = \left( \frac{TrueCost}{L * T} + R \right) * (1 + R * EffectiveTax)^T$$

6

The damage to the account over a long period of time until retirement is:

$$401(k)_{gap} = TrueCost * (1 + R)^Y$$

7

Alternatively, from step 4, we can calculate the “true annual compounding interest” using the built-in “rate function” in Excel.

$$TrueComplInterest_{annual} = Rate(Term, Payment\ on\ Interest, TrueCost) + R$$

<sup>7</sup> Quarterly or Monthly calculation can be derived from the formulas below

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