

Are Your Clients Making the Right Loan Choice?

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In 2013, U.S. household consumption debt reached \$2.75 trillion, excluding mortgage debt, according to the Federal Reserve. Borrowing money is not necessarily a bad thing, but the costs of different loan options vary widely. To avoid financially dangerous situations and maximize wealth, it is important that consumers choose the proper borrowing options to finance their needs. Commonly used consumption loans include credit card loans and high-cost loans, such as payday and auto title loans.¹ For homeowners, home equity lines of credit (HELOC) are another option.

One frequently overlooked loan option for the majority of people with defined contribution pension plans is a plan loan (commonly called a 401(k) loan). Financial planners often discourage people from using retirement account money to finance current consumption needs, worrying that doing so will negatively affect retirement wealth accumulation. However, clients who do not use 401(k) loans must rely

Executive Summary

- This paper uses a hypothetical debt scenario to compare the costs of four types of loans to fund consumption. Results show that, under reasonable assumptions, 401(k) loans are cheaper than credit card and high-cost loans. In certain cases, 401(k) loans can be even more inexpensive than home equity lines of credit. By switching from high-cost loans to 401(k) loans, households can save up to 130 percent of the loan cost.
- The cost saving from a 401(k) loan is higher when 401(k) investment returns and 401(k) loan interest rates are low and when marginal tax rates are high.
- Findings from the National Financial Capability Study surveys indicate that despite the cost advantages, most people use 401(k) loans as a last resort. This can lead to hundreds of thousands of dollars in retirement wealth loss per household.
- Financial advice does influence borrowers to make better use of 401(k) loans. However, planners may still need to take a more proactive role in introducing 401(k) loans to help clients make better loan choices.

on another loan option. Planners do not always consider the costs of alternative options. In fact, recent academic works show that 401(k) loans are often much cheaper than other loan types and therefore a better choice under many circumstances (Beshears, Choi, Laibson, and Madrian 2008; Li and Smith 2010; Lu and Mitchell 2010). Despite the significant advantages, very few consumers use 401(k) loans to finance their consumption needs.

In this paper, we propose a hypothetical debt scenario to analyze and compare the costs of four loan options used to finance general consumption:

(1) 401(k) loans; (2) credit card loans; (3) high-cost loans; and (4) HELOCs.

The scenario analyses show that 401(k) loans, along with HELOCs, are one of the least expensive loan options under reasonable assumptions. 401(k) loans are especially beneficial for borrowers with low 401(k) investment returns, low 401(k) loan interest rates, or high marginal tax rates. The discussion also highlights some of the limitations of each loan type that are not reflected in the numerical model.

We then use data from the 2009 and 2012 National Financial Capability Study (NFCS) to analyze whether people are

choosing the best loan option for their situations. Findings indicate that 401(k) loans are underutilized, with borrowers employing more expensive credit card or high-cost loans even when 401(k) loans are available to them. Such suboptimal choices can cost borrowers up to 130 percent more than what they could have paid. Taken together, these observations show that a substantial proportion of households are losing significantly because of poor borrowing strategies. Evidence also shows that financial counseling on debt and loans can positively affect utilization of 401(k) loans. This paper concludes by urging financial planners to take a more proactive role in introducing 401(k) loans to clients as a potentially cheaper loan option.

Background and Literature Review

Defined contribution (DC) pension plans cover more than 88 million American private sector workers, according to 2012 data from the U.S. Department of Labor. Although the \$3.8 trillion accumulated assets in DC plans are intended for retirement purposes, most plans offer participants a loan option, allowing them to borrow from their own accounts prior to retirement.

More than 87 percent of DC plan participants have access to 401(k) loans (VanDerhei, Holden, Alonso, and Bass 2012). DC plan loans allow participants to borrow up to half of their vested account balances up to \$50,000. Borrowers are required to use their after-tax salary to repay plan loans, including interest, into their own accounts. Even though no regulations exist on interest rates for these loans, most plans set the rate based on the prime rate to prime rate plus 1 percent (Lu and Mitchell 2010). If borrowers leave their jobs during the repayment period, they must fully repay their loans within 90 days. If they fail to do so, the loans are considered defaulted against their account balances, which are subject to

income tax and a 10 percent penalty on the outstanding balances.²

People are often wary of taking 401(k) loans because of worries about syphoning off retirement wealth to fund current consumption (Reeves and Villareal 2008; Weller and Wenger 2008). However, recent works by Li and Smith (2010) and Lu and Mitchell (2010) show that 401(k) loans often cost less than other types of loans and should therefore be considered as a favorable option instead of as a last resort. Li and Smith employed data from the 1995 through 2007 waves of the Survey of Consumer Finances to examine the use of 401(k) loans. They found that about half of the households forego this relatively cheap option for more expensive loan options. The study estimated that those households could, on average, save more than \$200 per year by shifting their more expensive loans to 401(k) loans.

In order to advise a client on the most optimal consumption loan for his or her situation, financial planners need accurate knowledge about the relative costs of different loan options and about the non-numerical factors involved in each loan type. Existing literature does not furnish this information; instead, studies on retirement financial well-being focus on either pre-retirement wealth accumulation or post-retirement wealth withdrawal (for example, Blanchett 2013; Spivak and Nelling 2013; Woerheide and Nanigian 2012). The few studies that do explore pre-retirement debt's effect on retirement wealth do not compare different types of loans, but focus on one type of debt per study. No previous study has directly compared the relative cost of different consumption loans and provided numerical solutions.

This study contributes to the literature in several ways. This is the first study to use a scenario analysis to compare four types of commonly used consumption loan options and to

numerically demonstrate how much each loan option will cost a hypothetical borrower at the time of retirement.

We summarize the conditions under which 401(k) loans are most favorable and identify non-numerical factors that can influence a good loan choice. This paper also adopts data from the NFCS survey to analyze the loan choices of U.S. households. This is the first known study to use that data to analyze the effects of financial planning on borrowers' consumption loan choices.

Description and Comparison of Loan Options

The following subsections propose and analyze a hypothetical debt scenario. The first section sets up the scenario and describes the four loan options. The second section shows the effects of these loan options on retirement savings. The third section offers a scenario analysis by changing key assumptions. The final section explores some non-numerical factors involved in selecting the optimal loan for a given situation. A scenario analysis was used to examine how different consumption loan options affect an individual's retirement wealth accumulation.

Suppose Bob works at a private company and participates in the company-provided 401(k) plan. He has \$20,000 in his 401(k) account, and each month he has \$1,000 pre-tax savings, which he can contribute to the retirement account. The annual return on investment is 9 percent, and the marginal tax rate is set at 15 percent.

Now suppose Bob faces an emergency consumption shock and needs \$10,000 immediately. He has the following four financing options: take a loan from his 401(k) account, take a credit card loan, take a high-cost loan, or take a home equity line of credit (HELOC). These four options are explored below.

401(k) loan. A participant in a 401(k) plan can borrow up to half of his or her account savings, not exceeding \$50,000.

In this hypothetical case, Bob could completely cover his financial need with a 401(k) loan. These plans stipulate that the borrower must fully repay the loan, including interest, within five years. The interest rate is typically fixed. Prime rate plus 1 percent is the most common interest rate charged across plans (Lu and Mitchell 2010). It is possible to analyze Bob's case assuming a five-year repayment at a fixed interest rate of 4.25 percent. Bob makes repayments monthly using after-tax savings and invests the remaining monthly pre-tax savings in the retirement account as a regular contribution.

Credit card loan. This loan type is repaid monthly using after-tax savings and isn't subject to repayment time constraints. In the scenario, three different credit card interest rates were used: 21.1 percent (mean plus one standard deviation of the credit card interest rates in NFCS data); 13.9 percent (average NFCS credit card interest rates); and 6 percent. For loans with high interest rates (in this example, the 21.1 percent and 13.9 percent interest rate loans), it is optimal for Bob to pay off the loan as fast as possible, as the loan interest rates are higher than his investment return (9 percent). A 6 percent interest rate is uncommon for credit card loans; however, this rate was used to compare the 401(k) loan to a highly favorable credit card loan. Two repayment scenarios for a 6 percent credit card loan exist: first, use all after-tax savings (\$850) to repay the loan as fast as possible; second, repay the loan more slowly over a five-year period.

High-cost loan. High-cost loans, such as credit card loans, are repaid monthly using after-tax savings and are exempt from repayment time constraints. To model this approach, a 90 percent annual interest rate was used.³ Like the credit card loan option, such a high interest rate makes it optimal to repay the high-cost loan as quickly as possible.

HELOC: A HELOC uses the bor-

rower's home as collateral. The credit limit is typically between 75 percent and 100 percent of the home's appraised value minus the mortgage balance. Most HELOCs set a fixed period for borrowing and repaying, such as five or 10 years. In the scenario, the repayment period was set as five years. A HELOC option is only available to homeowners. Generally, interest rates are linked to the prime rate, changing as the prime rate does, imposing risk on the borrower. On the other hand, the interest charges are typically tax deductible. Considering that the current prime rate is at a historical low, the interest rate was set to start at 4.25 percent, which was the same as the 401(k) loan interest rate; it was further assumed that the rate would increase by 0.5 percent each year.

Two methods were used to examine ways to repay HELOC loans. The first was an amortization payment, which requires the borrower to make equal payments on interest due and principal reduction each month. The second repayment method was a balloon payment, where the borrower only pays interest each month and fully repays the principal at the end of the repayment period (five years in the scenario). In the second case, Bob must make the monthly interest payments, but he also needs to deposit a fixed amount of after-tax savings each month into a non-retirement savings account in preparation for the final balloon payment on the principal. This non-retirement savings account was assumed to earn the same investment return rate as a 401(k) account. If taxes are taken into consideration, the investment return is unlikely to achieve the return of a 401(k) account, which makes a HELOC loan even more expensive.

Results

Panel A of Table 1 shows Bob's accumulated savings at retirement if he takes no loan and for each of the loan

options discussed above. Panel B of Table 1 shows how much the various loan options cost compared to taking no loan (calculated by subtracting the total at retirement for each loan type from the total at retirement when Bob takes no loan). It also presents how much Bob could have saved by switching from a given loan type to a 401(k) loan. The table shows Bob's retirement savings and loan costs five years, 25 years, and 40 years from today, meaning the time Bob takes the \$10,000 loan.

No loan. If Bob does not take a loan, he can add \$1,000 to his 401(k) account each month, on top of the original \$20,000, with a 9 percent annualized investment return. The account will hold \$107,303 in five years, \$1.3 million in 25 years, and \$5.4 million in 40 years.

401(k) loan. In the next scenario, Bob takes a \$10,000 401(k) loan to finance the emergency consumption, leaving \$10,000 in his retirement account today. Given a loan interest rate of 4.25 percent, Bob must repay \$185 after-tax savings (or \$218 pre-tax savings, assuming a 15 percent marginal tax rate) back into his account each month. After paying this \$218, Bob can invest the rest of his monthly pre-tax savings (\$782) into the account. After the five-year repayment period, Bob resumes investing \$1,000 a month into the 401(k) account. As shown in Panel A of Table 1, the account will hold \$89,162 in five years, \$1.2 million in 25 years, and \$5 million in 40 years.

The difference in 401(k) account balances between the case with no loan and the case with a 401(k) loan is defined as the 401(k) loan cost. For example, if Bob is 40 years from retirement, his account will hold \$5,438,628 at retirement if he takes no loan and \$5,020,221 if he takes a 401(k) loan, which is a total difference of \$418,407 to his final retirement amount, or the cost of 401(k) loan.

Credit card loan. If Bob takes a credit card loan to finance his emergency

consumption, it's better for him to pay off his debt as soon as possible when interest rates are high. Therefore, Bob should use all of his monthly savings (\$850 after tax per month) to repay his debt at the beginning of the repayment period, contributing nothing to the 401(k) account until the loan is fully repaid. Then, he can resume putting all of his monthly savings (\$1,000 pre-tax per month) into the 401(k) account.

For the case of a 6 percent interest rate on the credit card loan, Bob can either pay off the loan as soon as possible, or repay the loan over a five-year period. Table 1 shows the retirement account balances and corresponding loan cost at five, 25, and 40 years for each of the three different credit card loan interest rates previously discussed. For example, if Bob selects a credit card loan with a 13.9 interest rate, the total in the retirement account at the end of 40 years is \$4,998,790, or a cost of \$439,838. This option is 5 percent more expensive than taking a 401(k) loan (\$439,838 divided by \$418,407 minus 1).

Depending on the interest rate and repayment period, the cost of a credit card loan can be higher or lower than a 401(k) loan. If the interest rate is 6 percent, which is rare in real life, optimal smoothing of repayment can result in a final cost that is 5 percent lower than the cost of a 401(k) loan. In reality, interest rates are usually higher. Most 401(k) borrowers are credit constrained, and hence are likely to face relatively high interest rates charged by credit card companies. In those cases, a 401(k) loan is still a better option.

High-cost loan. As with the credit card loan, it's better to pay off a high-cost loan as soon as possible because of the high interest rate. Again, Bob should use all his savings (\$850 after tax per month) at the beginning of the repayment period to repay the debt, contributing nothing to the retirement account until the loan is fully repaid,

Table 1: Comparison of Various Loan Option Costs				
Panel A: 401(k) Account Balance at Retirement				
Loan option	Retirement date from today			
	5 years	25 years	40 years	
No loan	\$107,303	\$1,317,699	\$5,438,628	
401(k) loan	\$89,162	\$1,208,683	\$5,020,221	
Credit card loan				
@ 21.1%	\$87,411	\$1,198,162	\$4,979,841	
@ 13.9%	\$88,233	\$1,203,099	\$4,998,790	
@ 6%	\$89,043	\$1,207,969	\$5,017,483	
@ 6% (repay in 5 years)	\$90,020	\$1,213,840	\$5,040,013	
High-cost loan @ 90%	\$65,572	\$1,066,928	\$4,476,159	
HELOC (amortization)	\$90,801	\$1,218,531	\$5,058,019	
HELOC (balloon)	\$91,757	\$1,224,278	\$5,080,075	
Panel B: Cost of Loans				
Loan option	Retirement date from today			Cost saving by switching to 401(k) loan
	5 years	25 years	40 years	
401(k) loan	\$18,142	\$109,016	\$418,407	
Credit card loan				
@ 21.1%	\$19,892	\$119,537	\$458,787	10%
@ 13.9%	\$19,071	\$114,600	\$439,838	5%
@ 6%	\$18,260	\$109,729	\$421,145	1%
@ 6% (repay in 5 years)	\$17,283	\$103,859	\$398,616	-5%
High-cost loan @ 90%	\$41,731	\$250,771	\$962,469	130%
HELOC (amortization)	\$16,503	\$99,168	\$380,609	-9%
HELOC (balloon)	\$15,546	\$93,421	\$358,553	-14%

when he can resume putting all of his \$1,000 pre-tax savings in the 401(k) account. The account will hold \$65,572 in five years, about \$1 million in 25 years, and about \$4.5 million in 40 years. Not surprisingly, a high-cost loan is the worst option. It is more than 130 percent more expensive than a 401(k) loan and also much more expensive than the other loan options. Therefore, it should be considered only when all other options have been exhausted.

HELOC loan. As for the HELOC, after paying the amortized amount (in the amortization payment case) or the interest plus savings for balloon principal pay off (in the balloon payment case), Bob still has some pre-tax money left to contribute to his 401(k) account each month in the first five years. In this scenario, Bob has a five-year HELOC, so starting from the sixth year Bob can resume investing all \$1,000

pre-retirement savings into his 401(k) account. Panel A of Table 1 shows the retirement account balances at five, 25, and 40 years for each of the two different HELOC repayment options.

When comparing HELOC loans with 401(k) loans in Panel B, both HELOC options cost less than the 401(k) loan in the scenario. The balloon payment option is especially cheap, saving as much as 14 percent more than the 401(k) loan option. The scenario confirms the widely held notion that HELOCs are one of the best loan options for consumers; still, restrictions associated with HELOCs limit their availability to every consumer, especially to the young, an issue that is discussed later in this paper.

Overall, Table 1 shows that the 401(k) loan option is cheaper than almost all the other loan options evaluated in this study. The only exceptions are the

Table 2: Cost Saving by Switching to 401(k) Loan (Retire in 40 Years)

Loan option	Investment Return				401(k) Loan Interest Rate		Tax Rate		
	9.0%	6.7%	5.0%	4.5%	4.25%	11.0%	0%	15%	25%
Credit card loan									
@ 21.1%	10%	10%	10%	11%	10%	7%	7%	10%	12%
@ 13.9%	5%	6%	6%	6%	5%	3%	3%	5%	7%
@ 6%	1%	1%	1%	1%	1%	-2%	-1%	1%	1%
@ 6% (repay in 5 years)	-5%	0%	3%	4%	-5%	-7%	-6%	-5%	-4%
High-cost loan @ 90%	130%	134%	138%	139%	130%	125%	79%	130%	905%
HELOC (amortization)	-9%	-5%	-2%	-1%	-9%	1%	-9%	-9%	-9%
HELOC (balloon)	-14%	-7%	0%	1%	-14%	4%	-12%	-14%	-16%

scenario where a credit card loan with 6 percent interest is paid back over five years and the HELOC loan option. It is also worth noting that in the case where Bob retires 40 years from today (from the time of taking the loan), even the least expensive loan costs him more than \$350,000 in retirement savings. Note that the 40-year scenario indicates the case where Bob takes the loan when he is young. Therefore, it is extremely important for young people to refrain from borrowing money unnecessarily. As for financial emergencies, making the right choice of loan is even more important for young people, because the accumulated cost of borrowing (the difference between their projected wealth with borrowing and projected wealth had they not borrowed) grows over time. Financial planners would do well to not only advise clients to avoid debt, but also to highlight the relative costs of different loan options over different time periods.

Scenario Analysis

The following discussion highlights scenarios where the investment return rates, 401(k) loan interest rates, tax rates, and retirement assumptions were changed.

Investment return rates: Li and Smith (2010) considered four different expected 401(k) investment return rates: the long run average of stock market return was 9 percent; the five-year trailing stock market return

was 5 percent; the Gallup survey of households expected return was 6.7 percent; and the risk-free rate was 4.5 percent. We used the same four rates of return in the following calculations, the results of which appear in Table 2. The relative savings of using a 401(k) loan grows when the investment return rate shrinks, which is consistent with Li and Smith's findings. In the case where the investment rate is 4.5 percent, the 401(k) loan achieves the same low cost as a HELOC.

401(k) loan interest rates. Interest rates for 401(k) loans vary across plans. Table 2 shows the results using an 11 percent plan loan rate (the highest prime rate since 1990 plus 1 percent). Because HELOC interest rates are also linked to the prime rate, a fixed 11 percent HELOC rate was assumed.⁴ Although a higher loan interest rate makes the 401(k) loan more expensive, it's still cheaper than the other options in most situations. This includes HELOCs, as higher interest rates make HELOCs even more expensive than 401(k) loans.

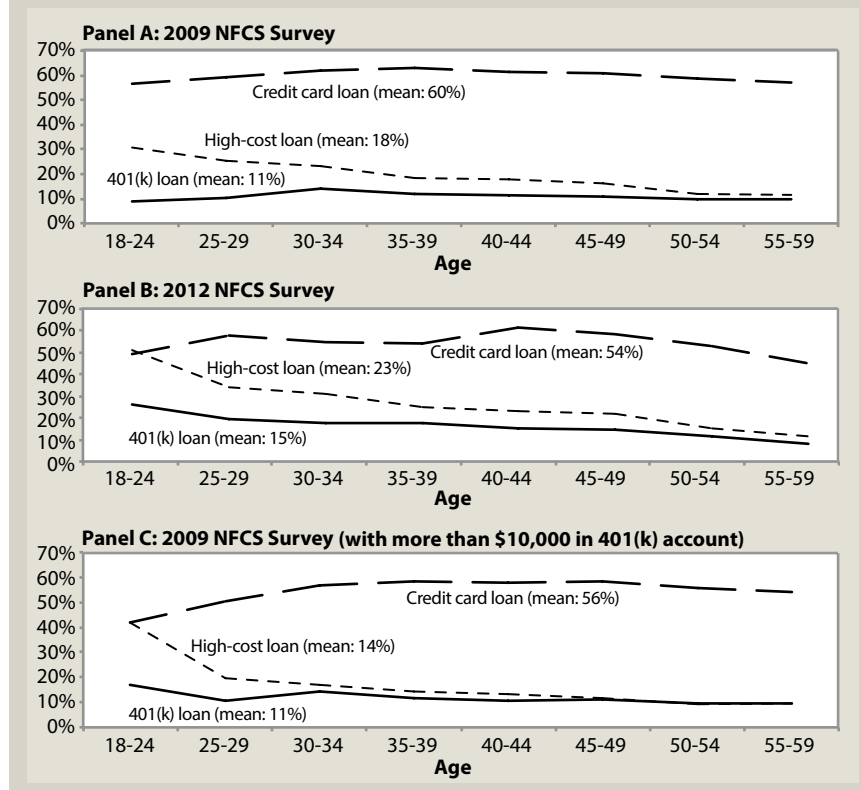
Tax rates. Table 2 also shows the costs of the loan options using different marginal tax rates. In the baseline scenario, the marginal tax rate was set at 15 percent. The table also shows costs with 0 percent and 25 percent marginal tax rates. When the tax rate is higher, the 401(k) loan is more favorable than credit card and high-cost loans. However, HELOCs are still cheaper than 401(k) loans under high tax rates.

Additional Factors to Consider

The assumptions in the previous sections reflect common situations. Still, other factors not incorporated into these scenarios need to be evaluated in combination with the numerical results to arrive at the optimal loan choice solution for borrowers. Such factors include the probability of bankruptcy, job security, loan fees, interest rate volatility, home ownership, and the borrower's financial competence. This section discusses these factors.

Bankruptcy. In the case of bankruptcy, most or all credit card debt and high-cost loan debt is excused. While distasteful, the savvy borrower could choose credit card and high-cost loans and then file for bankruptcy as part of strategy to optimize wealth. However, people typically file for bankruptcy only under extreme circumstances, as the effects on personal finances can be long lasting and adverse. For this reason, this paper does not explicitly consider probability of bankruptcy as a factor in choosing a loan option in the previous numerical setting.

Job security. One of the risks associated with taking a 401(k) loan is that if the borrower leaves his or her job during the repayment period, he or she must repay the loan fully within 90 days of leaving. If the borrower fails to do so, the loan defaults, and the outstanding balance is subject to income tax, as well as a 10 percent penalty tax.

Figure 1: Use of Various Types of Loan Options by Age

However, in March 2013, the U.S. Senate introduced the Shrinking Emergency Account Losses Act, or SEAL Act, which allows workers who change jobs to postpone repaying their loans until they file their federal taxes. If passed, the bill would reduce the risk of defaulting on a 401(k) loan following job turnover. Although other loans do not have such severe tax penalties for defaulting, defaulting negatively affects a person's credit rating, thereby increasing his or her future borrowing cost.

Loan fees. A 401(k) loan often includes an application fee. The lender may also charge an annual fee for outstanding loans. HELOCs incur set-up and maintenance costs, such as application fees, appraisal costs, closing costs, and potentially annual maintenance fees. With all these fees, borrowers sometimes find using a credit card saves money despite higher interest rates. This is especially true when borrowing

small amounts. When borrowing larger amounts (for example, several thousand dollars) a low interest rate becomes a priority, while fees constitute a smaller portion of total cost and become negligible. Loan amount is important when selecting a loan type.

Interest rate volatility. 401(k) loans have fixed interest rates, which can be a safer choice, especially when interest rates are unstable. Risk-averse borrowers often prefer 401(k) loans because the interest is fixed. Considering interest rate volatility is yet another factor in choosing the appropriate loan type.

Home ownership. HELOC loans have their own limitations that potential borrowers must consider. Most importantly, one has to own a home to apply for a HELOC. Although home ownership may be common among middle-aged and older people, it is less common among young people. For example, based on the results from the NFCS

2012 survey, 22.8 percent of respondents aged 18 to 24, and 33.4 percent of those aged 25 to 29, are homeowners, compared with more than 70 percent homeownership among those aged 40 or above. For most young people, HELOC loans are not an option.

Borrowers' financial competence. HELOC loans—especially when paired with the balloon payment method—do not force borrowers to make payments on the principal until the end of the repayment period. Borrowers who are less financially savvy may find 401(k) loans more attractive, as payments are automatically deducted from the paychecks. Some loans require more hands-on management, and potential borrowers should take this into consideration when selecting a loan type.

Use of Different Types of Loans

This section analyzes data on consumer behavior to evaluate whether consumers optimally select consumption loans to minimize the loan cost—an important question for researchers and financial planners.

This question was examined using the most robust and most up-to-date dataset available: the National Financial Capability Study (NFCS) conducted by FINRA. The analysis used two waves of state-by-state surveys, from 2009 and 2012, to appraise borrowers' loan choices. In each wave, the survey reached approximately 500 individuals per state plus the District of Columbia to construct the "state-by-state" data. Different groups of respondents who represent the population were interviewed in two waves. The survey contains basic demographic questions and questions on a variety of aspects related to personal financial planning, including retirement planning, cash and debt management, use of financial advice, and financial literacy. We focused on questions regarding how respondents used different types of loans, including

Table 3: Summary Statistics of 401(k) Loan Taking with Other Types of Loans

	2009 NFCS Survey		2012 NFCS Survey		2009 NFCS Survey (with more than \$10,000 in 401(k) account)	
	No. of obs.	% not taking 401(k) loan	No. of obs.	% not taking 401(k) loan	No. of obs.	% not taking 401(k) loan
Take credit card loan	4,273		3,089		2,796	
Take credit card loan but not 401(k) loan	3,653	85%	2,482	80%	2,368	85%
Take high-cost loan	1,066		1,134		580	
Take high-cost loan but not 401(k) loan	827	78%	769	68%	441	76%
Take credit card loan or high-cost loan	4,516		3,430		2,941	
Take credit card loan or high-cost loan, but not 401(k) loan	3,864	86%	2,726	79%	2,492	85%

401(k) loans, credit card loans, and high-cost loans, which include auto title loans, payday loans, loans from advances on tax refunds, and pawn shop loans. Unfortunately, the survey contains no data on HELOCs.

Because not all respondents had retirement accounts, the study only used answers from respondents who claimed to have a 401(k), claimed to “have retirement plans through a current or previous employer, like a pension plan,” and claimed that they could “choose how the money is invested.” These criteria are a proxy; the NFCS lacks data that would more definitively indicate whether a participant could take a loan from his or her 401(k) account.

VanDerhei et al. (2012) contended that more than 87 percent of 401(k) participants have access to plan loans. In addition, Lu and Mitchell (2010) reported that around 16 percent of eligible participants take 401(k) loans in any given year, which is very close to FINRA’s data (15 percent in the 2012 survey). Hence, we believe the selected sample represents 401(k) participants who are eligible to take 401(k) loans. The total sample has 8,246 observations from the 2009 survey and 6,483 observations from the 2012 survey.

Panels A and B of Figure 1 show the proportion of respondents who used each type of loan across different age groups in the 2009 and 2012 surveys.

The majority of respondents held credit card loans. Only slightly more than 10 percent of the respondents had taken 401(k) loans (11 percent in the 2009 survey and 15 percent in the 2012 survey). This is consistent with the finding of Li and Smith (2010) that many households use expensive loan options when they could use much cheaper 401(k) loans.

Startlingly, almost one in four respondents in 2012 said they held high-cost loans in the past five years. As discussed in the hypothetical scenario, high-cost loans are significantly more expensive than any other type of loans and should be used as a last resort only after all other options are exhausted. Yet, a much higher percentage of respondents held high-cost loans than 401(k) loans. Moreover, in both waves, young people employed high-cost loans more frequently than the elderly; this is especially worrisome when considering that the earlier one makes a poor loan decision, the more that decision diminishes potential wealth.

Two possibilities may explain the under-utilization of 401(k) loans. First, the borrower may not have sufficient funds in his or her retirement account to take a 401(k) loan. Second, borrowers may think of 401(k) loans as a last resort. The data indicates the later explanation is more likely. Panel C of Figure 1 includes only those

respondents from the 2009 survey who had more than \$10,000 in their 401(k) accounts. Although information on the exact amount each borrower needs was unavailable, the subsample, to some extent, was expected to exclude those who have insufficient savings in 401(k) plans to be borrowed from. However, the proportion of 401(k) borrowers in this group was still lower than that of high-cost loan borrowers, especially among those age 30 or younger. Table 3 shows that in 2009, 85 percent of credit card loan users and 78 percent of high-cost loan takers, had not used 401(k) loans at all. Results from the 2012 data and among respondents having sufficient 401(k) account balance in 2009 show a similar pattern.

In reality, people may not face the same constraint as Bob does in the hypothetical analysis. It may be possible for them to shop around for cheaper credit card rates or other low-cost options to finance debts. However, 401(k) loans should always strictly dominate high-cost loans, yet the data still finds a large proportion of borrowers taking high-cost loans while foregoing 401(k) options. This poor financial planning is especially concerning in regard to young people, as paying extra on a loan early on can have a larger negative impact on lifetime wealth accumulation. Financial planners must pay more attention to young people as they are prone to choos-

Table 4: Marginal Effects from Probit Model and the Impact of Financial Counseling on 401(k) Loan Taking

	2009 NFCS Survey		2012 NFCS Survey	
Debt counseling	3.50%	***	2.60%	*
Loan counseling	0.70%		3.80%	***
Control for demographic and financial conditions	Yes		Yes	
No. of obs.	4,583		4,094	

Notes: ***, * indicate 1% and 10% significance respectively.

ing the wrong loan option, perhaps because of low levels of financial knowledge.

Impact of Financial Counseling on Loan Choice

Based on the previous findings, 401(k) loans are underutilized despite being a relatively cheap loan option that does not affect a person's credit score. Behind this underutilization may be a lack of awareness of this loan option or a failure to rationally make optimal financial choices. It is therefore crucial that financial planners help their clients learn more about these loan options and encourage borrowers to make optimal financial decisions. Some research has studied the impact of financial counseling on credit scores and on borrower rating improvement (for example, Collins 2007; Elliehausen, Lundquist, and Staten 2007), however, no one, to our knowledge, has explored how counseling can affect loan choice.⁵ The following discussion investigates whether financial counseling affects the probability of taking a 401(k) loan.

We used data from two NFCS survey questions as measures of respondents' exposures to financial counseling on debt and loan topics. The first survey question was: "In the last five years, have you asked for any advice from a financial professional about any of the following?" Debt counseling was used as a measure of exposure to financial advice on debt or *debt counseling*.

The second question was: "In the last five years, have you asked for any advice from a financial professional about any

of the following?" Taking out a mortgage or a loan was used as a measure of exposure to financial advice on loans or *loan counseling*.

People who are under high debt pressure might be more likely to seek *debt counseling* or *loan counseling* and may simultaneously take 401(k) loans to fulfill financial needs. Hence, a positive correlation between financial counseling and taking a 401(k) loan does not necessarily imply a positive role played by financial counseling. To eliminate the potential reverse causality problem, respondents who took all types of credit lines (401(k) loans, credit card loans, high-cost loans, and hardship withdrawals from retirement plans) were excluded in the regression. This is because individuals who use all sources of credit are likely in deep financial trouble; they have no choice but to seek professional help and to exploit every loan option. The remaining sample of respondents is less prone to the reverse causality problem.

Probit regressions were run to examine the impact of financial counseling on people's choice of loan options. In particular, the dependent variable was a dummy variable indicating if someone used a 401(k) loan or not. The explanatory variables were dummies indicating if this individual had debt counseling or loan counseling. The analysis controlled for respondents' financial knowledge level, for their demographic characteristics (gender, age, race, education level, marital status, and area of residence), and for other financial variables (annual income; risk preference level; whether

the respondent had an auto loan, home equity loan, mortgage on home, or emergency funds in the past year; whether the respondent overspent income, experienced an unexpected income drop, took a hardship withdrawal from retirement accounts, or had credit card loan in the past two years; whether the respondent had been involved in a foreclosure process on home or declared bankruptcy; and whether the respondent had a high-cost loan in the past five years).

Table 4 shows the results of the main explanatory variables. Results show that *debt counseling* has a particularly positive impact on clients' decision to take a 401(k) loan. *Debt counseling* increased the probability of a client using a 401(k) loan by about 3.5 percent in the 2009 wave and by about 2.6 percent in the 2012 wave. *Loan counseling* had a statistically significant positive impact on 401(k) loan usage in 2012 but not in 2009. Despite this encouraging finding, many people are still choosing expensive borrowing options over cheaper ones.

Conclusion

Making good financial decisions is crucial to an individual's financial well-being. A suboptimal loan choice can cost a borrower hundreds of thousands of dollars by retirement. By analyzing a hypothetical borrowing scenario, this paper shows that 401(k) loans can be a less expensive consumption loan option than credit card and high-cost loans. The substantial cost savings 401(k) loans offer may make it the optimal choice for borrowers, especially for young borrowers and other borrowers who may be unable to access HELOC loans. This paper further demonstrates how the cost savings associated with 401(k) loans vary with expected investment returns, loan interest rates, and marginal tax rates. On top of the numerical results, we also explored some of the non-numerical factors that can influence a

good loan choice, including likelihood of bankruptcy, job security, loan fees, interest rate volatility, home ownership, and clients' self-discipline.

Despite the benefits of 401(k) loans, most people treat this loan option as a last resort. Although financial planners can positively affect the utilization of 401(k) loans, a high proportion of people, especially those who are young, still use more expensive loans. Financial planners work with clients on cash flow management before they have to borrow money. However, some clients will have to borrow money, and they will need a proper plan. Severe underutilization of cheaper loan options means potential borrowers should seek financial advice, and financial planners must do more to assist clients in choosing the optimal approaches to borrowing. ■

Endnotes

1. We did not include mortgage or auto loans, as these are loans for specific purposes. This study considers loans to finance general consumption needs.
 2. DC plan participants also have the option to make hardship withdrawals from their own accounts. Hardship withdrawals are not loans, as they do not need to be repaid. Funds withdrawn from plan accounts are subject to regular income taxes plus a 10 percent penalty tax for participants under 59.5 years of age, with certain exceptions. People who make hardship withdrawals are also prohibited from contributing to their retirement accounts for six months.
 3. The monthly rate was set at 7.5 percent (90 percent annually) for a reasonable calculation. In practice, the interest rate of a high-cost loan is often much higher than the assumption.
 4. Because the 10 percent prime rate is at a 24-year year high, we did not assume it will increase by 0.5 percent per year as was the baseline case.
 5. Collins and O'Rourke (2010) provided a thorough review of the current literature on financial education and counseling.
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