Saving Motives And 401(k) Contributions

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This paper investigated worker motives for 401(k) contributions with data from the 1995 Survey of Consumer Finances. Employer matching and the ability to withdraw or borrow from the plan were related to greater contributions. In addition, risk tolerance, labor income, and years of working for the current employer were positively related to contributions.

Key Words*: Retirement savings, 401(k) plans, Saving motive, Survey of Consumer Finances*

Pensions are a major component of retirement savings. The 1994 Current Population Survey indicated that, for all private sector workers receiving both pension annuity and Social Security benefits, the combined benefits replaced only part of pre-retirement wages: 67% in nominal terms and 45% in real terms (U. S. Department of Labor, 1995). Since the Employment Retirement Income Security Act (ERISA) of 1974 was passed, there has been a trend away from pension coverage under defined benefit plans and toward defined contribution plans (Foster, 1996a). Between 1985 and 1993, the percentage of full-time workers in medium and large private establishments participating in defined contribution plans increased from 41% to 49%, but the percentage participating in defined benefit plans decreased from 80% to 56% (Foster, 1996b).

One type of defined contribution retirement plan, the 401(k) plan, has several features that make it an attractive saving vehicle for retirement preparation, including tax saving contributions, automatic deductions from payroll, and possibility to borrow or withdraw in emergency from the plans. There has been a rapid expansion of 401(k) plans in recent years. In 1983, only 3% of all full-time private wage and salary workers participated in a 401(k) plan. By 1993, the participation rate increased to 27%. Over the same period, coverage under other types of plans decreased from 47% to 30%. Among those for whom 401(k) plan coverage was available, the participation rate increased from 60% in 1988 to 67% in 1993 (U. S. Department of Labor & U. S. Small Business Administration, 1994). While there is a debate on whether 401(k) plans encourage workers to save more (Engen, Gale & Scholz, 1994, 1996; Hubbard & Skinner, 1996; Poterba, Venti & Wise, 1994, 1995, 1996), this relatively new type of pension plan has become a common choice among many American workers for retirement savings.

Why do workers participate in and contribute to 401(k) plans? Research to answer this question has recently emerged. The purpose of this study was to examine factors associated with 401(k) plan contributions. Specifically, this study attempted to explore worker motives of contributions to 401(k) plans. Compared to previous studies on the similar topics, the unique features of this study included using the most recent dataset from the 1995 Survey of Consumer Finances, providing a theoretical discussion on worker motives to 401(k) contributions, and investigating several factors that were ignored by previous studies. These factors included: reported retirement saving motive, possibility to borrow from the plan, possibility to make emergency withdrawal from the plan, and possibility to lose money from the plan when changing a job. The following two sections review previous studies on 401(k) contributions and discuss theoretically possible worker motives to 401(k) contributions. Methods, findings, and conclusions are then presented.

Previous Studies on 401(k) Contributions

Since 401(k) plans are a relatively new type of pension plan, there has been a limited number of studies on the factors associated with participation in and contribution to 401(k) plans. Using data from the May 1988 Current Population Survey Benefits Supplement, Andrews (1992) examined the factors associated with the coverage, participation, and percentage contribution to 401(k) plans. She found that older workers, workers with IRAs, and those with higher family income contributed higher percentage to the 401(k) plans. However, participants in plans where employer contributions were provided

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tended to contribute at lower rates than those in plans without employer contributions. Andrews (1992, p.158) concluded that participants may target their desired rate of saving and trade off increases in their own contribution with that of their employers.

Kusko, Poterba and Wilcox (1994) studied a medium-size manufacturing firm. They found that workers were more likely to contribute at certain percentages of their salaries, such as 6% (the maximum company match rate), 10% (the maximum rate of worker contributions allowed), or the highest amount allowed by IRS. This implied that contribution constraints may have important impacts on workers' saving decisions. Through conditioned tabulation analyses, they found income and age were positively related to the contribution percentage. Their results also implied that contribution decisions of eligible workers were relatively insensitive to the rate of employer matching on worker contributions. Most workers maintained the same participation status and contribution rate year after year, despite substantial changes in the employer's match rate.

Papke's (1995) study used plan level data from Form 5500s, which are filed annually with the Internal Revenue Service. She focused on the effects of employer match on the participation in and contribution to 401(k) plans. She found that substantial increases in worker contributions occurred when a plan moved from a zero to a small or moderately sized match rate. When the employer provided at least ten cents on the dollar, the marginal effect of an increased match rate was small.

Using data from the 1992 Survey of Consumer Finances and the first wave of Health and Retirement Survey, the U. S. General Accounting Office (1996) reported that a worker's income, education, coverage by a defined benefit plan, and having a spouse with pension coverage were positively related to the 401(k) contribution rate. These conclusions were based on cross tabulation analyses and no other variables were controlled when the contribution rate and one of the demographic variables were cross tabulated.

Even and Macpherson (1997) used data from the 1988 and 1993 Pension Supplements to the Current Population Survey to investigate factors associated with 401(k) participation and contributions. After control for endogenous matching and correction for selectivity bias generated by non-response to questions on the availability of matching, the effects of matching on participation were substantially increased, but the effects

of matching on contribution rate were mixed. They also found that year of working for the current employer was positively related to the contribution rate.

Yuh and DeVaney (1996) investigated determinants of a couple's accumulations in defined contribution pension plans (including 401(k) plans) with data from the 1992 Survey of Consumer Finances. Husband's education, race, coverage of a defined benefit plan, income, working year, and risk taking attitudes had significant effects on the amounts accumulated.

The review of previous studies indicated some consistent patterns of worker behavior, such as the positive effect of age and income on 401(k) plan contributions (Andrews, 1992; Kusko, Poterba, & Welcox, 1994; Even & Macpherson, 1997; U.S. General Accounting Office, 1996; Yuh & DeVaney, 1996). However, the effects of employer match were controversial. Andrews (1992) reported that the incidence of employer match would decrease the worker contributions, Kusko, et al. (1994) did not find the impact of employer match on plan contributions, but Papke (1995) found nonlinear effects of employer match rate on plan contributions. Even and Macpherson (1997) improved the estimation methodologies and found mixed results in terms of the positive effects of employer match on 401(k) contributions.

Worker Motives for 401(k) Contributions

Worker motives to contribute to 401(k) plans can be categorized as general saving motives and motives that are unique to 401(k) plans. Since saving in 401(k) plans is part of total savings, motives for 401(k) contributions should have characteristics of general saving motives. In economic literature, the life cycle hypothesis is the dominant saving theory (Ando & Modigliani, 1963). According to the original life cycle model, people save mainly for retirement purposes since they attempt to maintain the same consumption levels before and after retirement (see Hanna, Fan & Chang, 1995 for a more recent version of the model). To maintain the same consumption level of living after retirement, they have to save when they are working. In other words, their major saving motive is for retirement. A modified life cycle model, labeled as the *behavioral life-cycle model* (Shefrin & Thaler, 1988), assumes that people divide their assets into different mental accounts. Because of the nature of 401(k) plans, it is reasonable to believe that people consider their savings in 401(k) plans to belong to their retirement savings accounts. Thus, age would be an important indicator to capture the retirement saving

motive and it should have positive effects on 401(k) contributions when workers approach retirement age. The 1995 Survey of Consumer Finances contains self-reported saving motive variables. There has been an increase in the proportion of respondents reporting retirement as an important reason for saving. In 1989, only 18% reported retirement as a saving reason, but in 1995 the percentage increased to 24% (Kennickell, Starr-McCluer, & Sundén, 1997). In 1989, respondents with higher levels of financial resources were more likely to report saving for retirement (Xiao & Noring, 1994).

Compared to other saving instruments, 401(k) plans have several unique advantages that may motivate workers to contribute to the plans. One of the advantages is tax sheltering. The contribution amount and interest earned in 401(k) plans are tax deferred until retirement, unlike some defined contribution plans in which worker contributions are not tax deferred. Eligibility for 401(k) contribution is more generous and the contribution limit of 401(k) plans is much higher than for Individual Retirement Accounts (IRA). Even if a worker is qualified for tax deductible IRA contributions, the maximum amount is limited to $2,000 for single workers and $4,000 for couples. However, for any workers who qualified for 401(k) contributions, the allowed maximum tax deferred contribution amount was $9,500 in 1995. Thus, a possible motive for 401(k) contributions is tax saving. If workers have this motive, they may also have a similar motive to participate in IRAs. In other words, if there is a tax saving motive, the positive effect of IRA ownership on 401(k) contributions should be observed.

Besides tax saving features, 401(k) plans have other attractive features. The employer match is an important one. In many companies, employer would match worker's 401(k) contributions to certain amount or percentage of a worker's salary as soon as workers start to contribute to 401(k) plans. The 1993 Worker Benefits Survey showed that 80% of employers matched workers' 401(k) contributions (Foster, 1996a). There are two competing theories for employer matching (Even & Macpherson, 1997). One theory is that employers match so as to increase the chance that non-discrimination rules are satisfied. A competing theory is that employers match to provide higher wages to workers with low discount rates (or longer time horizons). An implication of the competing theory is that workers who join 401(k) plans receive more compensation and are therefore more likely to stay with the firm. From a worker's perspective, contributing to a 401(k) plan triggers employer matching.

Workers not only enjoy tax sheltering advantages, but earn extra retirement savings. Thus, taking advantage of employer match should be one of the motives to 401(k) contributions. However, the effect of matching on the contribution amount is ambiguous theoretically. If an employer provides a match, there are both income and substitution effects on worker contributions. The income effect would allow the worker to contribute less to achieve the same level of saving, which discourages contributions. On the other hand, the substitution effect encourages worker contributions since the matching increases the return of 401(k) contributions (Even & Macpherson, 1997).

Many 401(k) plans have other features that may attract workers to contribute to it. Some plans allow workers to borrow against the plans or make hardship withdrawals in emergencies. A study with data from the 1993 Worker Benefits Survey showed that 78% of plans allowed borrowing and 81% allowed hardship withdrawals (Foster, 1996a). If workers consider this flexibility an advantage, they may be motivated to contribute to 401(k) plans.

The above discussion is about the worker motives for 401(k) contributions. There are other possible factors that influence 401(k) contributions. One is awareness. Even though 401(k) plans are becoming popular among workers, not every worker realizes the existence and advantages of the plans. Thus, the level of awareness of 401(k) plan availability and its advantages may be associated with plan contributions. The variables related to awareness may include education and years worked for the current employer. Workers with higher educational levels and/or longer job tenure may be more likely to be aware of the existence of 401(k) plans in their companies, and to better understand the plan advantages. In a previous study, both education and years worked for the current employer had positive effects on 401(k) contributions (Even & Macpherson, 1997).

Another factor is risk. There may be two types of risks regarding 401(k) plan savings. One is market risk. Compared to the defined benefit plans in which employers bear the market risks, participants in defined contribution plans should bear the market risks themselves (Even & Macpherson, 1997). Typical 401(k) plans usually have several options for workers, ranging from low to high risk. Therefore, to join 401(k) plans workers should be able to take certain market risks. A recent study indicated that risk taking attitudes were

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positively related to accumulations in defined contribution savings plans (Yuh & DeVaney, 1996). People's risk tolerances may differ by demographic characteristics (Sung & Hanna, 1996). The second type of risk is related to possible loss of money in the plan when changing jobs. Theoretically, there is no risk of losing the worker's contribution to a 401(k) plan from a job change, but the accumulation from the employer's contribution could be lost. A survey showed that 21% of 401(k) plan holders might lose unvested amounts contributed by employers if they changed jobs (Foster, 1996a).

The third factor is the affordability of saving. According to the behavioral life cycle hypothesis, the saving rate increases with a person's permanent income and saving is a luxury good for the poor (Shefrin & Thaler, 1988). Thus, income should be positively related to 401(k) contributions. Previous studies reviewed above supported this prediction.

Method

Sample
The dataset[a] used in this study was the 1995 Survey of Consumer Finances. For the purpose of this study, only household heads who reported currently having 401(k) accounts were selected. Preliminary examinations showed that among these workers, some reported extremely high contribution amounts, which implied that they might make after tax contributions to 401(k) plans. Thus, to focus on the people who used 401(k) plans as a tax deferring program, only household heads reporting contributions of $9,500 (the maximum amount allowed by IRS in 1995) or less to 401(k) plans were selected. The sample used for analyses included 638 household heads. The 1995 Survey of Consumer Finances has five imputation replicates (*implicates*) and all five implicates were used in this study.[b] Weights provided by the Federal Reserve System were used to produce descriptive statistics and conduct multivariate analyses.

Variables
Two dependent variables were used in this study: the amount of contributions to 401(k) plans and the percentage of salary contributed to the plans. The two variables were measured on an annual basis. Independent variables included those variables that measured contribution motives and other factors.

Two variables were used to measure retirement saving motives: age and retirement as a reported saving reason. To capture the non-linear effects of age, both age and age

squared were used. Retirement as a reported saving reason was a dummy variable. Both age and retirement saving motive variables were expected to have positive effects. The tax saving motive was captured with a variable of IRA ownership. If the tax saving motive assumption is held, the effect of IRA ownership should be positive.

Variables related to attractive features included employer match, possibility to borrow, and possibility to withdraw in emergency. Two variables related to employer match to 401(k) plan contributions – the match amount and match percentage. The match percentage here was different from the one used in Papke (1995). In Papke's study, the match rate was the percentage matched by the employer relative to worker contributions. For example, if an employer contributed 50 cents when a worker contributed one dollar, the match rate would be 50%. In this study, information on the potential match rate was not available.[c] Respondents reported the percentage of salary matched by their employers. To capture the non-linear effects of the two variables, the squared terms were also included in the analyses. The match amount was an independent variable for the contribution amount and the match percentage was an independent variable for the contribution percentage. All other independent variables were the same for both dependent variables.

The plan feature-related variables also included the possibility to borrow from the plan and to withdraw from the plan in an emergency. The ability to borrow or make hardship withdrawals are attractive features to individual savers and they should have positive effects on 401(k) contributions. Two dummy variables were used to represent the two factors.

Variables relevant to awareness included education and years working for the current employer. Risk related variables included risk taking attitude and the possibility of losing money in 401(k) plans when changing jobs. Willingness to take above average risk was coded as 1 and reporting the possibility of losing some or all money when changing jobs coded as 1. Two income variables were used: head's labor income and other family income. To capture the non-linear effects, head's labor income squared was also included in analyses. In addition, several demographic variables were used as control variables, including race, gender, marital status, having a defined benefit plan, coverage of other defined contribution plans, and spouse pension coverage.

Four of the independent variables were ignored by

previous studies: reported retirement saving motive, possibility of borrowing from the plan, possibility of making an emergency withdrawal from the plan, and the possibility of losing money from the plan if changing jobs. Also, this study is the first one to use a quadratic term for the match amount and percentage.

Analyses

Among the workers who reported currently having any 401(k) plans, only 88% actually made contributions in the survey year. For this type of dependent variable, the tobit model is an appropriate estimation technique to obtain unbiased estimates (Maddala, 1983). The marginal effects were calculated by multiplying a scale factor to parameter estimates (Maddala, 1983, p.160). The scale factor represents the probability that a worker with average characteristics has a non-zero 401(k) contribution.

Findings and Discussion

Descriptive Statistics

Table 1 presents the descriptive statistics. The mean 401(k) contribution was $2,400, and the mean contribution percentage was 5.4%. These results are lower than Andrews' (1992) means of $2,478 and 6.6%, respectively. The average employer contribution was $2,925, with a mean rate of 6.5%. Sixty three percent of the respondents reported they could borrow against the plan, 78% could make hardship withdrawals, and 22% reported that all or some of their money in the plan would be lost if they left their current jobs. These results are comparable with those reported by Foster (1996a).

Tobit Results: Contribution Amount

Table 2 presents the tobit regression of the 401(k) contribution amount on demographic and other variables. The retirement saving motive assumption was supported by the findings, as the predicted contribution was significantly higher for those listing retirement as an important reason for saving. The predicted contribution increased with age until 45, then decreased. The predicted contribution increased with the employer match amount until the match amount reached $7,076, then decreased. The combined effect of the linear and quadratic terms for labor income indicate that the predicted contribution amount increased with income for all levels of income. The possibility of making an emergency withdrawal had a positive effect on the predicted contribution. The predicted contribution increased with the years of working for the current employer and with the head's labor income. Those who

were willing to take an above average risk with investments had significantly higher predicted contributions.

Table 1

Descriptive Statistics, 1995 Survey of Consumer Finances.

Frequencies		
Worker contributes to the plan	88%	
Employer matches the plan	79	
Can borrow from the plan	63	
Can withdraw in emergency	78	
Possibly lose money	22	
Having defined benefit	21	
Spouse has pension	26	
Have other defined contribution plans	20	
White	81	
Male	82	
Married	71	
Own IRA	66	
Reported saving for retirement	36	
Would taking above average risk	28	
Continuous Variables	Mean	Stand. Dev.
Contribution rate (% of salary)	5.4	4.0
Contribution amount ($)	2400	2123
Employer match rate (% of the salary)	6.5	10.4
Match amount ($)	2925	8686
Age (years)	40.5	10.4
Education (years)	14.0	2.4
Year working in current company (years)	9.4	8.8
Head's labor income ($)	45656	140270
Other family income ($)	19522	92607

Weighted sample, n=638

It is difficult to directly compare these findings with previous studies since the definitions of dependent and independent variables were different, but the findings seem consistent with previous studies for the effects of age, year of working for the current employer, labor income, and risk taking attitudes. However, unlike previous studies, the effect of IRA ownership, years of working for the current employer, and education were not significant.

Tobit Results: Contribution Percentage

Table 3 presents the tobit regression of the 401(k) contribution percent on demographic and other variables. The predicted contribution rate was significantly higher for those listing retirement as an important reason for saving. The predicted contribution rate increased with age until 46, then decreased. The predicted contribution increased with the employer match rate for all plausible levels until the rate reached 22%. The combined effect of the linear and quadratic terms for labor income

indicate that the predicted contribution rate decreased with income for all levels of income. The possibility of making an emergency withdrawal had a positive effect on the predicted contribution rate. The predicted contribution rate decreased with the head's labor income. Those who were willing to take an above average risk with investments had a significantly higher predicted contribution rate.

Table 2

Tobit Analysis of Factors Associated with 401(k) Plan Contribution Amount

	Estimate	Marginal Effect	sig.
Match amount	0.017	0.016	0.4188
Match amount squared	-1.18E-6	-1.09E-6	0.0004
Possibility to borrow	219.923	203.877	0.1839
Possibility of emerg. withdrawal	572.646	530.866	0.0033
Possibility of losing money	-357.181	-331.122	0.0479
Having defined benefit plans	52.822	48.968	0.7776
Spouse has pension plans	127.389	118.095	0.4824
Have other defined cont. plans	65.054	60.308	0.7242
White (vs. nonwhite)	352.903	327.155	0.0693
Male (vs. female)	405.187	375.625	0.1507
Married (vs. not married)	-188.324	-174.584	0.4513
Age	183.568	170.174	0.0004
Age squared	-2.058	-1.908	0.0006
Education	46.325	42.945	0.1880
Year working for employer	25.686	23.812	0.0123
Head's labor income	0.035	0.032	0.0001
Head's labor income squared	-9.08E-9	-8.42E-9	0.0001
Other family income	1.58E-5	1.46E-5	0.9629
Own IRAs	111.079	102.974	0.5124
Retirement as a saving reason	465.180	431.241	0.0032
Taking above average risk	774.602	718.088	0.0001
Intercept	-5430.829	-5034.596	0.0001
Scale	1789.589		
Log likelihood=-5160	Noncensored values =557		
Left censored values=81	Scale factor=0.927		

The findings are consistent with previous studies in terms of the effects of age (Andrews, 1992; Kusko et al, 1994; Even & Macpherson, 1997), match (Even & Macpherson, 1997), and risk taking (Yuh & DeVaney, 1996). However, unlike previous studies, IRA ownership, years worked for the current employer, and education were not found significant in this study. The negative labor income effect was also inconsistent with previous studies.

Table 3

Tobit Analysis of Factors Associated with 401(k) Plan Contribution Percentage of the Salary

	Estimate	Marginal Effect	sig.
Match percentage	0.127	0.118	0.0090
Match percentage squared	-0.003	-0.003	0.0028
Possibility of borrowing	0.523	0.485	0.1704
Possibility of emerg. withdrawal	1.465	1.358	0.0011
Possibility of losing money	-0.615	-0.570	0.1387
Having defined benefit plans	-0.293	-0.272	0.4992
Spouse has pension plans	0.353	0.327	0.3983
Have other defined cont. plans	0.243	0.225	0.5694
White (vs. nonwhite)	0.834	0.772	0.0621
Male (vs. female)	0.659	0.610	0.3115
Married (vs. not married)	-0.912	-0.845	0.115
Age	0.464	0.430	0.0001
Age squared	-0.005	-0.005	0.0003
Education	0.070	0.065	0.4012
Year working for employer	0.038	0.036	0.1057
Head's labor income	-1.34E-5	-1.24E-5	0.0155
Head's labor income squared	7.47E-13	6.92E-13	0.0485
Other family income	-2.87E-7	-2.66E-7	0.9075
Own IRAs	0.200	0.185	0.6103
Retirement as a saving reason	1.043	0.966	0.0044
Taking above average risk	1.712	1.587	0.0001
Intercept	-8.848	-8.198	0.0009
Scale	4.127		
Log likelihood=–1685	Noncensored values =557		
Left censored values=81	Scale factor=0.927		

Discussion

The findings strongly support the retirement saving motive assumption, since both age and reported retirement saving motive variables are positively related to both contribution variables. The positive effects of age diminish as workers get older. The positive effects of age are consistent with previous studies (Andrews, 1992; Kusko et al, 1994; Even & Macpherson, 1997).

The possibility of making emergency withdrawals had significant positive effects on both contribution variables. This may be a reasonable motive considering the prediction of the behavioral life cycle model that suggests saving is a luxury for the poor. Families with limited funds may consider this plan feature attractive and be motivated to contribute more.

This study assumed that the employer match is a favorable feature for workers and they would be

motivated to contribute more because of this feature. Andrews (1992) and Kusko et al. (1994) did not find positive effects for the employer match, but Papke (1995) and Even and Macpherson (1997) found limited positive effects. The findings of this study provide evidence of the positive effects of the employer match. This study is the first to use a quadratic term to capture the nonlinear effects of employer match. The net effects of the linear and quadratic terms for the employer match were positive for most levels of the match amounts and rates.

The tax saving feature of 401(k) plans has been widely publicized by the popular personal finance press and it should be a motive for 401(k) contributions. Because of the limitation of the data set, only one variable, IRA ownership, was used to directly capture this motive. The lack of significance for the IRA ownership is inconsistent with Andrews' (1992) study that reported positive, significant effects of IRA ownership. Higher income households tend to have higher marginal tax rates, so income should be positively related to contributions. The results for labor income are somewhat puzzling, as the effect on the contribution amount is positive but the effect on the contribution rate is negative. The negative effect of labor income on the contribution rate is inconsistent with either previous studies or theoretical predictions. To explore the issue further, a cross tabulation between the contribution rate and labor income was performed (Table 4). The mean contribution rate for the highest income group was only 3.9%, which is lower than other income groups. Thus, the negative effects of income on the contribution rate found in the tobit may be a result of the effect of very high income workers, as well as controlling for the effects of other variables. Note that the lower contribution rate of the highest income group doesn't mean they contribute lower amounts. The mean contribution amount in the highest income group was higher than the mean for other income groups. The lower contribution rate of the highest group may result from the limit of allowed tax-deferred contributions and the sample selection criteria used in this study.

The risk taking variable positively influenced both contribution variables, which is consistent with the results from Yuh and DeVaney (1996) in which the accumulation in defined contribution plans including 401(k) plans was used as the dependent variable. This finding implies that market risks perceived by workers and their risk taking attitudes play an important role in

401(k) contributions. The possibility of losing part of the accumulation in a 401(k) plan when changing jobs may also hinder worker contributions. When a worker changes a job, part or all of the accumulated amount matched by the employer might be lost, depending on the company's vesting policy.

Table 4
401(k) Contribution Amount and Rate by Labor Income Group

Head's Labor Income	Contribution Amount ($)	Contribution Rate (%)
Under $25,000	945	4.6
$25,000-$50,000	1993	5.5
$50,000-$100,000	3770	6.0
Over $100,000	5788	3.9

Conclusion and Implications

Based on previous studies and saving models, this study discussed possible motives for 401(k) contributions. Possible saving motives include saving for retirement, tax saving, and taking advantages of special features of 401(k) plans such as employer match, possibility to borrow or to make emergency withdrawals from the plans. Other factors investigated were awareness of existence of 401(k) plans and their advantages, risk, and affordability to contribute. Tobit models were used to test these assumptions with data from the 1995 Survey of Consumer Finances. Workers who stated that retirement was an important reason for saving had higher predicted contributions and contribution rates to 401(k) plans. Workers seemed to be influenced by two special features of 401(k) plans: the possibility of making emergency withdrawals and the employer match. In addition, willingness to take above average risk was positively related to 401(k) contributions. The possibility of losing money in the plan when changing a job was negatively related to contribution amounts. There is a positive relationship between contribution amounts and years worked for the current employer, a measure of awareness. Worker's labor income was positively related to contribution amounts, but negatively related to contribution rates. The negative relationship between the labor income and contribution rate may result from the limitation of allowed tax deferred contribution and sample selection criteria used in this study. The findings have several implications for public policy makers, pension plan designers, retirement planning service

practitioners, and personal finance educators.

Implications for public policy makers
Public policy makers can make appropriate policies for both companies and individual workers to encourage 401(k) contributions. Since employer match and emergency withdrawal are two attractive features in terms of 401(k) contributions, the government should make policies to encourage companies to include these features in their 401(k) plans. On the other hand, the government should also encourage individual workers to contribute more to 401(k) plans by raising the contribution limit, since this savings plan is mainly used for worker's retirement motive. To encourage younger workers to contribute more, the government may need to give them additional tax saving benefits.

Implications for pension plan designers
Findings of this study show that two plan features, employer match and emergency withdrawal, are positively related to 401(k) contributions. Other features, such as possible borrowing, do not show significant effects. Pension plan designers should focus on these features to increase contributions. Also, attracting younger workers or workers with below average risk taking will be a challenge.

Implications for retirement planning practitioners
The findings provide evidence for retirement planning practitioner to find who are more likely to buy their retirement planning services and what features of retirement plans are attractive to potential customers. Obviously, plans with employer match and possibility of emergency withdrawals are more attractive than plans without these features. Older workers or workers willing to take above average risk are likely to contribute more to 401(k) plans. The service practitioners also prepare to offer special services to encourage younger workers or workers with low risk tolerance to contribute more to the plans.

Implications for personal finance educators
Raising awareness of the existence of 401(k) plans and their advantages may be important to encourage workers to participate in and contribute to 401(k) plans. Personal finance educators may carry out this mission. Many financial service practitioners are offering retirement education in the workplace, and some educators from universities and other non-profit organizations also contributing to workplace education. The findings in this study may provide some clues to educators about appropriate content and targeting groups for retirement

savings education. To encourage workers' participation and contribution, the plan features that workers will be most responsive to, such as employer match and emergency withdrawal, should be emphasized. Also, educators should develop different teaching strategies for workers with different ages, working years in the company, and risk taking attitudes.

Endnotes

a. *The survey was sponsored by the Federal Reserve Board and the survey was conducted by the National Opinion Research Center at the University of Chicago (Kennickell, Starr-McCluer, & Sundén, 1997). In the original dataset, 2,780 families were from the area-probability sample and 1,519 higher income families from the tax record list.*

b. *An approximation approach suggested by Kennickell (1997) was used in the tobit analyses. This approach is to average values of independent and dependent variables across the five implicates before data analyses. Montalto and Sung (1996) discuss the appropriate method to use with Ordinary Least Squares Regression. Application of similar methods to nonlinear techniques such as tobit is complex. The use of this approximation approach for tobit may result in biased variance estimates, and thus the statistical significance tests for tobit coefficients may be somewhat biased. It is very likely that coefficients that have high significance levels (e.g., less than 0.01) would also be significant under the more complex estimation method.*

c. *The SCF variable for the employer contribution represents the actual match, not the potential match. The variable was based on the question: About how much did employer contribute over the past year?*

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