AARP Public Policy Institute

ISSUE BRIEF

DESIGNING 401(K) PLANS THAT ENCOURAGE RETIREMENT SAVINGS: LESSONS FROM BEHAVIORAL FINANCE

Introduction

The United States has a voluntary pension system: employers are not required to provide pensions.[1] With this approach, the amount of responsibility placed on workers differs considerably between defined benefit and defined contribution pensions. Defined benefit plans base benefits on a formula, while defined contribution plans base benefits on the accumulation of funds in an individual account. With a defined benefit plan, if the employer provides a pension to a worker, the worker automatically participates. With a defined contribution plan, however, participation often depends on whether the worker chooses to contribute.

When the landmark Employee Retirement Income Security Act of 1974 (ERISA) was passed, pension coverage was primarily provided through defined benefit plans. Since then, pension participation has shifted away from defined benefit plans and toward defined contribution plans. According to Department of Labor data, for more than 20 years – since 1984 – more workers have been active participants in defined contribution plans than in defined benefit plans. Now considerably more than twice as many workers are active participants in defined contribution plans as in defined benefit plans (U.S. Department of Labor 2005). The shift from defined benefit to defined contribution plans has meant the shift of investment risk from employers to employees.

The most common type of employer-provided defined contribution plan is the 401(k) plan. These plans are largely participant-directed. In 401(k) plans, employee participation is typically voluntary. Employees can choose within limits what percentage of salary to contribute. They can choose investments from the options offered by the plan. Plans similar to 401(k) plans are available to employees who work for non-profit organizations (e.g., 403(b) plans) or for government (e.g., 457 plans, the Thrift Savings Plan). This Issue Brief refers to these types of pensions generically as 401(k) plans.

Only about half of all workers participate in any type of pension plan in any given year. Some workers do not contribute to a 401(k) plan even though their employer offers a matching contribution. Often workers who do contribute do not contribute sufficiently to assure themselves a comfortable retirement. Workers in 401(k) plans frequently exhibit inertia, sometimes called “status quo bias,” not adjusting their portfolio mix as changing circumstances warrant. A small number of workers turn over their pension investments too aggressively, resulting in high trading costs. Some workers switch investments following financial market trends, which results in their buying high and selling low. Many workers take benefits as lump sums, incurring the risk of running out of money during retirement if they live longer than expected. In short, there are a number of problems with the way workers manage their 401(k) plans.

[1] I have received helpful comments from Jon Dauphine, John Gist, Jules Lichtenstein, Evelyn Morton, Lisa Southworth, and Theresa Varner.

Research in behavioral finance has provided some lessons for 401(k) plan design that may help workers better manage their 401(k) plans. Behavioral finance considers psychological issues affecting how workers make financial decisions. This Issue Brief analyzes the 401(k) plan decisions workers make, the reasons why workers make poor decisions concerning their 401(k) pensions, and policy options to deal with those problems.

The paper focuses on an insight from behavioral finance – the importance of defaults. Judicious choice of defaults by pension plan sponsors may have the result that workers are more likely to have pension coverage, are more likely to have well-diversified portfolios for their pension funds, and are less likely to spend their pension money before retirement. Changing the default options to make sound savings and investment decisions the norm could promote better retirement income for many workers (Munnell and Sundén 2004; Mitchell and Utkus 2004; Gale, Iwry, and Orszag 2005).

This paper considers policies that encourage participation among workers offered a 401(k) pension, encourage higher contribution rates, influence choices concerning investment decisions, and influence choices concerning the form in which benefits are received. It discusses the motivation behind the choice of defaults and the limited empirical evidence that indicates effects of the choice of defaults. The paper summarizes what the economics literature on these topics has found, and it discusses policy prescriptions suggested by that literature.

Behavioral Economics and Behavioral Finance

An assumption underlying the system of voluntary employee participation in defined contribution plans is that individuals make good financial decisions that they are able to implement. A weakness of this approach is that many individuals make poor choices, resulting in retirement income that is insufficient to maintain their preretirement living standards. Behavioral finance has documented these choices and how they result in outcomes that are unfavorable to workers in the long-run. Behavioral finance theorists have used their insight into the roles that inertia and procrastination play in worker behavior to propose solutions that preserve worker choice while arguably achieving better long-run outcomes for many workers.

Behavioral finance and behavioral economics focus on psychological factors affecting individuals' decision making, including how individuals deal with problems arising from the quantity and quality of information available to them. This approach expands on the methodology of traditional finance and economics, which focuses on the behavior of well-informed persons who are psychologically capable of implementing the decisions they make.

The following sections address policy issues related to workers' choices concerning (1) pension participation, (2) contribution rates, (3) investments, and (4) benefit receipt. Each section contains an introduction that provides background, a discussion of information problems, and an analysis of policy options.

(1) Encouraging Participation

Background. While the United States has legislated numerous pension policy innovations over the past twenty years in an effort to raise pension participation, the participation rate has remained stagnant at roughly 50 percent of private sector workers (U.S. BLS 2003). The participation rate varies across groups of workers classified by income. The participation rate was higher than 75 percent for groups with income higher than $80,000 a year in 1997, while it was only 22 percent for those workers with annual income under $20,000 (Congressional Budget Office 2003).

The most commonly used arrangement for enrolling workers in 401(k) plans, called "standard enrollment," is that workers must sign-up to participate. The default if the worker takes no action is non-participation. The worker must choose how much to contribute, whether to change the contribution rate over time, and the asset allocation for his or her account.

Some workers whose employer offers a 401(k) plan may not participate in it because they are ineligible or because they do not choose to participate. Data from the Survey of Income and Program Participation (SIPP) for 2003 indicate that those who are eligible but do not participate constitute 22 percent of private sector workers eligible to participate in defined contribution plans (Turner and Verma 2005). Workers in firms that offer 401(k) plans and who do not participate in any plan offered by their employer tend to be younger than participants, to be female, and to have lower education, earnings, and tenure (Hinz and Turner 1998, Turner and Verma 2005).

Economic studies of pension participation (Hinz, Fernandez, and Turner 1994) indicate characteristics of workers who do not participate when offered a pension plan, but generally do not examine specifically the workers' reasons why they do not participate. For example, it is unclear whether workers' nonparticipation reflects an affirmative choice made by them or it reflects inertia that has caused them not to make an active choice. Further, inertia could be caused by indecisiveness, lack of interest, or inability to act on a decision.

The Survey of Income and Program Participation (SIPP) for 2003 asked non-participating workers who were offered a pension why they did not participate (Table 1). More than 40 percent of men and nearly 40 percent of women replied that they could not afford to contribute. Roughly 20 percent of men and nearly 30 percent of women indicated that they did not want to tie up the money. The next most common reason given by both men and women (more than 14 percent of each not participating) was that they hadn't thought about it. Other responses included that the worker did not need the plan, or that the worker or spouse had other pension coverage. With this set of questions, most participants gave economic reasons for not participating—they couldn't afford to, they didn't want to tie up their money, or they didn't need the coverage.

Because workers could give multiple responses, there is some overlap in the answers. For example, 15 percent of those who said they could not afford to contribute also answered that they did not want to tie up the money.

Table 1. Reasons Why Workers Who Are Eligible to Participate in a Pension Plan Do Not Participate		
Reasons for not contributing	Men	Women
Cannot afford to contribute	43.6%	39.7%
Do not want to tie up money	21.6	28.8
Haven't thought about it	14.4	14.5
Do not plan to be on job long enough	7.2	4.6
Have an IRA or other pension coverage	4.6	4.6
Spouse has a pension plan	4.2	1.4
Employer doesn't contribute or doesn't contribute enough	3.7	4.2
Do not need it	3.6	3.5
Started job too close to retirement	2.3	1.2
Some other reason	23.2	25.6
Note: percent of non-contributing eligible workers. Percentages sum to more than 100 because workers can provide multiple answers. Source: SIPP 2003		

These responses can be compared to those from an earlier study of federal government workers who did not choose to participate in the Thrift Savings Plan, which was designed to be similar to 401(k) plans (Hinz and Turner 1998). The most common answer, given by more than a fourth of men (29 percent) and a third of women (34 percent), was that they could not afford to contribute (Table 2).

Factors other than income were clearly among the determinants of that response. Most (81 percent) of the workers in the lowest income quartile did not give that response, while a few (7 percent) of the workers in the highest quartile did give that response.

While the SIPP data give two possible responses for not contributing that may relate to non-economic reasons ("Haven't thought about it" and "Some other reason"), the data used in the Hinz and Turner (1998) study provide a number of non-economic reasons as options. Nearly one in six men and women (16 percent of each) did not contribute to the Thrift

Table 2. Reasons for Not Contributing to the Federal Thrift Savings Plan		
Reasons for not contributing	Men	Women
Can't spare the money	28.7	34.2
Prefer other investments	24.2	19.7
Too close to retirement	16.7	13.1
Don't understand the Thrift Savings Plan	13.7	16.0
Don't want money tied up	14.2	14.2
Don't have enough information	12.0	14.5
No confidence in the plan	10.3	5.8
Haven't considered the Thrift Savings Plan	10.1	9.6
Never got around to it	7.3	13.7
May not stay in federal government	3.9	3.8
Note: percent of non-contributing eligible workers. Multiple responses were possible. Source: Hinz and Turner (1998), computations from 1990 Federal Retirement Thrift Investment Board data.		

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Savings Plan because they reported they did not understand the plan, and nearly as many (12 percent of men and 15 percent of women) did not contribute because they reported they did not have enough information. A tenth of the non-contributors (10 percent each of men and women) did not contribute because they had not considered whether to do so. More than one-eighth of women (14 percent), but fewer men (7 percent), did not contribute because, as they reported, they had not bothered to sign up to do so.

Information Problems. How much workers and their spouses should save for retirement is a complex problem. The answer depends on a number of factors, including the age at which they start saving for retirement, their expected age at retirement and what they anticipate their life expectancy to be at that age, the expected rate of return from and risk associated with their investments, whether they have employer-provided retiree health insurance, and whether they own their home and expect to have paid off the mortgage by retirement. Some workers may not participate in a pension plan because they do not understand how much they need to save for retirement or the consequences of saving inadequately. Some may not participate in a pension plan because they find pensions too complex to feel comfortable making that decision, especially since it involves substantial sums of money. Some high-income workers may not participate because they believe, rightly or wrongly, that they have sufficient savings in other forms.

An important reason for undersaving for retirement may be that some workers underestimate their life expectancy. They may do so because they are unaware of how quickly life expectancy is improving, basing their own life expectancy on that of their older relatives. Thus, "demographic literacy" as well as "financial literacy" may be a source of problems in individuals' planning for retirement.

A study by the Society of Actuaries (2004) found that a majority (67 percent of pre-retirees) of the male respondents underestimated the life expectancy of the average 65-year-old man. Of that group, 42 percent underestimated average life expectancy by 5 years or more. Roughly half (54 percent) of pre-retiree females underestimated the life expectancy of the average 65-year-old woman. A British study found that on average people over a range of ages underestimated their life expectancy by 4.6 years for males and 6.0 years for females. Males ages 30 to 39, an age range where they may be considering seeking employment providing pension coverage, underestimated their life expectancy by 6.3 years, while females in that age range underestimated their life expectancy by 6.5 years (O'Brien, Fenn, and Diacon 2005). These findings suggest that a substantial portion of the population may considerably underestimate its life expectancy.

Policy Options. U.S. employers have used at least five different policy options to encourage workers to participate in 401(k) plans. First, employers can encourage workers to participate in 401(k) plans by offering a match for employee contributions. The match, for example, could be dollar-for-dollar up to a certain level of employee contributions, with a lower match rate, or no match, beyond that. A number of empirical studies have found that employer matching contributions increase employee participation (Papke and Poterba 1995;

Munnell, Sundén, and Taylor 2001; and Clark and Schieber 1998).

Second, with automatic enrollment, also called "negative election," workers are automatically enrolled in 401(k) plans as the default option; however, workers may choose to not participate. The Internal Revenue Service (IRS) has issued rulings indicating that it is permissible for employers to automatically enroll participants in 401(k) plans provided that the employee is notified in advance and is permitted to leave the plan if he or she chooses to do so (Purcell 2004). With automatic enrollment, a portion of the participant's pay is contributed to a 401(k) plan and invested in a default investment option without any action required by the worker. Automatic enrollment has been adopted by only a minority of plans. As of 2004, only 11 percent of all 401(k) plans, and 31 percent of plans with more than 5,000 participants, had adopted automatic enrollment (Profit Sharing/401(k) Council of America 2005). Plans with automatic enrollment tend to be large plans, but not much else is known about their characteristics.

Third, participation in 401(k) plans may be encouraged by requiring an active decision in a given time frame whether to enroll in the plan. For example, workers may be required to make a decision within the first couple of months of work on a new job (Horack and Wood 2005).

Fourth, employers can encourage participation by offering attractive features in their 401(k) plan. The availability of loans from a 401(k) plan may encourage participation. The General Accounting Office (GAO) found that participation rates in plans that allow loans are 6 percentage points higher than in plans that do not allow loans (GAO 1997). Another feature of plan design affecting participation may be the complexity of the investment decision, which may discourage some workers from enrolling in a 401(k) plan.

One study found a strong negative relationship between the number of funds offered by a 401(k) plan and the participation rate. Increasing by 10 the number of funds offered led to a 1.5 to 2.0 percentage point decline in the average participation rate (Huberman, Iyengar, and Jiang 2003). However, a study in the United Kingdom found that simplifying the application form, in some cases so that all the worker had to do was to sign a form that contained information the employer already had from payroll records, had little effect on the percentage of people participating in employer-provided defined contribution plans (Horack and Wood 2005). This approach may have had little effect because workers still faced the problem of how to invest their pension money.

Fifth, employers can encourage workers to participate by providing them financial education about the need for adequate retirement savings (McCarthy and Turner 2000). While providing workers with additional information, financial education raises the costs of their plan, which workers may bear through added fees, unless paid for directly by the employer.

Choice of Defaults. If all workers actively made wise decisions concerning the various aspects of their pension participation, the issue of defaults in designing 401(k) plans would be irrelevant. However, some workers do not make a choice and are automatically placed in the status determined by the

default. Defaults may have a socially desirable function when they can be structured so that workers end up in a situation that increases their retirement savings.

Evidence from U.S. studies suggests that automatic enrollment may be a more successful way to increase pension coverage than employer matching contributions. For example, Madrian and Shea (2001) found that automatic enrollment led to substantially higher enrollment among new employees in one firm than under a system that relied solely on offering a match (Table 3). Choi et al. (2004), using data for three firms, found that automatic enrollment had its largest effect on participation at short job tenure; but after three years of tenure, the participation rate among employees hired under automatic enrollment was still 30 percentage points higher than among employees hired under standard enrollment with the same tenure.

Automatic enrollment has the advantage for workers who are uncertain about investments that the investment choice is made for the worker. A British study has suggested that automatic enrollment is successful in part because some workers who do not choose to participate are intimidated by the choice of investment option (Horack and Wood 2005).

These studies have been based on a small number of large firms that have been benefits innovators. The experience in these firms may not be typical of that across the U.S. labor market, especially in smaller firms and in firms with predominantly low-wage workforces. The extent to which the results can be generalized to the entire private sector workforce has not been assessed.

Table 3. Participation Rates by Tenure

Tenure	Participation Rate (%)
New employees, automatic enrollment	86
Before automatic enrollment	
3-5 years tenure	64
5-10 years tenure	77
10-15 years tenure	80
15-20 years tenure	82
20+ years tenure	83

Note: data from one firm
Source: Madrian and Shea (2001)

Some changes in federal law may be needed to encourage automatic enrollment. Federal law could be clarified in this area to indicate that it preempts state law. In addition, federal law could be changed so that employees who were automatically enrolled but accumulated only small amounts and wished to withdraw the funds from their account could do so without penalty. Congress could clarify the limits on fiduciary liability for employers who offer automatic enrollment programs. To increase the incentive for firms to offer automatic enrollment, Congress could limit the current safe harbor rules concerning anti-discrimination to only those plans that offer automatic enrollment and automatic escalation of contributions so as to assure that workers taking the default are contributing a sufficient amount (Gale, Iwry, and Orszag 2005).

Automatic Enrollment. While automatic enrollment has been demonstrated to raise participation rates, it may create problems in some firms. While the problem of former employees failing to claim pensions is most commonly associated with firms that have gone out of business rather than with stable, ongoing firms, that problem may arise in some

firms with automatic enrollment (Blake and Turner 2002). In firms with young workers and high job turnover, workers may quit without informing the firm, leaving behind small pension amounts in defined contribution plans. In firms where automatic enrollment occurs at the time of hire, workers with short tenure who leave may not be aware that they have a defined contribution account. These small accounts can be expensive for employers to maintain. Employers may roll over small amounts to an IRA, but these benefits may ultimately never be claimed by the workers because they are unaware of their existence. Lost pensions and lost pensioners are often an information problem, with pension participants not having sufficient information to claim the pensions that are theirs. No good data are available on the magnitude of this problem with respect to 401(k) plans.

A British study interviewed employers at 14 firms that had considered implementing automatic enrollment but had rejected the idea (Horack and Wood 2005). It found that employers were concerned about enrolling workers in plans without their prior knowledge or consent, especially when the workers were required to contribute. They were concerned that such a move would be disadvantageous to some employees. They were also concerned about their increased costs due to the need to make matching contributions for more workers, some of whom would not appreciate the expense to the employer.

Active Decisions. An alternative approach to automatic enrollment, which is called "active decisions," allows workers to choose whether to participate by having the employer set a deadline for the workers' decision rather than having no time limit (Choi et al. 2005). Active decisions are best used as the approach to enrolling workers in the pension plan when workers have differing needs and preferences and have a strong propensity to procrastinate. Under standard enrollment, enrollment tends to increase with employee tenure. Active enrollment leads to workers enrolling more quickly and to higher enrollment levels (Table 4). After three months with active enrollment, the percentage of workers enrolled equaled that which had been achieved previously after three years of standard enrollment. Even after 30 months, for the one firm in the study (Choi et al. 2005), participation for employees required to choose still exceeded that of those under the standard enrollment regime, by 83 percent to 69 percent.

Table 4. Active Enrollment Compared to Standard Enrollment

Participation rate after three months of tenure	Active enrollment	Standard enrollment
January	66%	45%
February	71	42
March	70	43
April	70	40
May	63	35

Note: The active decision enrollment was for new hires in 1997. The standard enrollment was for new hires in 1998.
Source: Choi et al. (2005) using data for one firm.

Other factors affect workers' decisions to participate. For example, several studies have found that workers covered by a defined benefit plan provided by their employer are less likely to participate in a 401(k) plan the employer provides than workers who are not covered by a defined benefit plan (Andrews 1992, Bernheim and Garrett 2003). Since the early 1980s, roughly 15 percent of the private sector wage and salary workforce has been

covered by both a defined benefit and a defined contribution plan (U.S. Department of Labor 2005).

(2) Encouraging Contributions

Background. It is important that workers contribute towards their retirement income security. Once a worker has decided to participate in a 401(k) plan, the factor that has the largest effect on the amount of assets accumulated is how much is contributed to the plan (Choi, Laibson, and Madrian 2004). In 2001, the median balance in 401(k) accounts among households headed by 50- to 55-year olds who had positive balances was only $50,000 (Goodman and Orszag 2005). In 2004, the the typical defined contribution plan participant investing with Vanguard was 44 years old and had a plan account balance of $24,000 (Vanguard 2005). When low- and middle-income workers do participate in 401(k) plans, their contributions are generally low (Hinz and Turner 1998).

Information Problems. As discussed, workers and their families may have a difficult time determining their retirement income needs and how those needs translate into a savings rate. Workers who underestimate their life expectancy will save insufficiently even if they are saving adequately for their perceived life expectancy. Even for workers with unbiased estimates of their life expectancy, there is no simple answer to the question, "How much do I need to save for retirement?"

Policy Options. There are several policy options for encouraging contributions.

Match. The effects of an employer match were discussed earlier in the context of encouraging employees to participate. A match also can be used to encourage employees to increase their contributions. Economic studies have generally shown that offering an employer match for employee contributions increases participant contributions. One study found that a one percent increase in the employer match rate led to a 0.25 percent increase in employee contributions (Engelhardt and Kumar 2003).

Loans. Other research indicates that certain defined contribution plan features besides the match rate may affect the amount participants contribute. One study found that the ability of plan participants to borrow from the plan increased their contributions by about one percentage point (Munnell, Sundén, and Taylor 2001). Another study found that participants in plans that allow borrowing contribute, on average, 35 percent more to their pension accounts than participants in plans that do not allow borrowing (GAO 1997).

Active Enrollment. A study of one firm found that active enrollment with no default option improved participation but led to lower average contribution rates (Choi et al. 2005). Active enrollment participants had lower contribution rates than standard enrollment participants until the fourth year of participation. The explanation for the lower average contribution rates among active enrollment participants may be that active decisions bring employees with weaker savings motives into participation earlier in their tenure.

Auto Escalation. One approach to encourage workers to contribute more automatically over time has been given the acronym SMarT – Save More Tomorrow

(Thaler and Benartzi 2004). The Save More Tomorrow plan is designed to make it easier for workers to commit to participating in a 401(k) plan, to keep the commitment, and to increase their savings rate over time. Under this plan, workers voluntarily agree to save part of their future wage increases—the first payroll deduction occurs the year following the date when the commitment is made. In the future, today's workers generally will have higher wages than currently as they gain more experience, as productivity increases in the economy, and as the price level rises. Therefore, workers will face no absolute reduction in their take home pay in order to save more, as long as they receive wage increases that exceed the payroll deduction. Normally, wages increase in both nominal and real terms over time. This plan, however, is not dependent on real wage increases – it incorporates an assumption that workers are subject to "wage illusion," meaning that they are fooled by inflation and misperceive nominal wage increases as real wage increases that raise their wages above the amount necessary to keep pace with inflation. Workers commit to save part of their nominal wage increase through their pension. Alternatively, auto-escalation can occur as an increase in the percentage of wages contributed, regardless of whether future wages increase.

There are five essential aspects of the SMarT approach: 1) the increased contribution occurs the year following the decision to participate, 2) the increased contribution is taken out of increased income, 3) the increased income of the worker is measured in nominal terms, 4) participation is voluntary, and 5) participation is open to all workers who are eligible to participate in the pension plan.

In the firms that have implemented it, the SMarT approach has been highly successful in encouraging workers to participate in 401(k) plans and to increase their contribution rate over time. In its first implementation, 78 percent of the people who were offered the option chose it, 98 percent of the people who took the option remained in it through two annual pay raises, and 80 percent remained in it through three annual pay raises (Benartzi and Thaler 2004).

(3) Investment Choices

Background. With the growth of 401(k) plans, because the investment risk is shifted from employers to workers, workers' investment decisions play an increasingly important role in determining their retirement income. While traditional defined benefit plans are generally managed professionally, workers have responsibility for managing the investments in their 401(k) plans.

Information Problems. Workers as investors may be their own worst enemy. While traditional economic theory assumes that investors are rational wealth maximizers and do not make systematic errors, more recent economic theory and empirical studies increasingly suggest otherwise. Many workers are uninformed about financial markets and lack interest in spending their time learning about them. Consequently, they may have biased or otherwise inaccurate information about them.

These information deficiencies can be addressed by participant education (McCarthy and Turner 2000). However,

information provided by financial service providers may be affected by the self-interest of the provider, with, for example, little or no discussion of the amount of fees the provider charges and the role fees play in reducing account balances.

A different information problem is that economists do not agree on what workers should do concerning the management of their pension portfolios. A leading scholar in the field writes, "There is currently no consensus on the optimal asset allocation strategy for investors" (Poterba 2001). For example, most financial planners encourage workers to hold less risky portfolios as they approach retirement, but Bodie (1995) challenges that view.

Information may be so complex that, even if supplied, pension investors are unable to make rational choices (Barr 2001). This failure may occur in part because the long time horizon for young workers makes it difficult for them to understand the consequences of their choices.
Having a larger number of choices may seem to be desirable because that would allow workers to find the options that fit their tastes or needs. However, the paradox of choice is that too many choices may immobilize some workers, with the increased number of choices making it difficult for them to decide. One possible explanation is information overload (Agnew and Szykman 2004). With information overload, workers find the problem too complex, with too much information to try to understand, and they take no action. Studies in psychology have shown that having more choices may render people worse off by hampering the ability to identify the option that best suits them (Iyengar and Lepper 2000).

The question arises as to how many options workers should be given in deciding how to invest their pension assets. If too many options are provided, many workers may feel they are unable to decide and take the default fund if one is offered (Agnew and Szykman 2004). An example of many choices leading workers to take the default is provided by experience with the mandatory account system in Sweden. Workers have a choice of more than 600 mutual funds. Yet only 18 percent of new entrants into the system in 2001 made an active choice, the rest allowing their contributions to be placed in the default fund, which is primarily invested in equities (Turner 2004).

Types of Investment Errors Pension Participants Make. While the preceding section discussed reasons why investors make errors, this section discusses the types of investment errors pension participants make. Pension investor errors include insufficient diversification and inappropriate portfolio adjustments (Turner 2003).

Insufficient Diversification. Failure to understand the basic principles of diversification may lead to investor errors. This lack of understanding leads to insufficient diversification between stocks and other instruments such as bonds, and also to lack of diversification within the stock portion of the portfolio. Lucas (2000), examining the portfolios of 250,000 401(k) participants, found that, typically, participants' portfolios are poorly diversified, focusing mainly on stable value funds, large capitalization stock, and stock of their own company.

A particular aspect of problems participants may have with portfolio diversification is naïve diversification.

This occurs when participants attempt to diversify by dividing their investment portfolios equally among all available investment options offered by a pension provider. Thus, if a pension plan offers three options, participants attempting to diversify would split their contributions in thirds. This results in an asset allocation to stocks and bonds that depends on the number and composition of stock and bond funds offered by the sponsoring employer (Benartzi and Thaler 2001). One study explored this pattern and found that only a small percentage of workers appear to manage their pension portfolios this way (Holden and VanDerhei 2001).

Over-investment in the stock of the sponsoring employer has occurred in some pension plans, and is another form of insufficient diversification. When workers invest their pension plans in company stock, if the company goes bankrupt they lose both their jobs and their pensions. In plans that allow employer stock as an investment option, 46 percent of participants (about 11 million employees) hold more than 20 percent of their account balance in employer stock (VanDerhei 2002). This sometimes occurs because the company provides the contribution match in company stock. Providing the match in company stock encourages workers to over-weight their portfolios in company stock. Men and lower-paid employees tend to invest a higher percentage of their portfolios in company stock than women and higher-paid employees (Lucas 2000, Holden and VanDerhei 2001). One study reports that when the employer match is in company stock, employees invest 29 percent of their own contributions in company stock. When the match is in cash, employees invest 18 percent of their own contributions in company stock (Benartzi 2001). This pattern is the reverse of what diversification would indicate.

Inappropriate Portfolio Adjustments. Overconfidence in one's own abilities as an investor or, at the opposite extreme, inertia, may lead to inappropriate portfolio adjustments. Overconfidence may cause some investors to trade aggressively, while inertia may result in some investors not revising their initial investment allocation when their pension plan offers further options.

Inertia may result from workers' not being willing to invest the time to learn how to make portfolio allocation changes. The perception that it is a time-consuming process to make changes may be a factor. Samuelson and Zeckhauser (1988) found that most pension participants in TIAA-CREF never made any adjustments to their asset allocation over their entire career. Ameriks and Zeldes (2000) found that nearly half of TIAA-CREF participants made no changes over a ten-year period. Failing to adjust one's portfolio as one ages is another possible manifestation of inertia. Lucas (2000) found that pension participants typically do not adjust their portfolios as their time horizon shortens. Portfolios are clustered at similar risk levels across age groups from ages 25 to 50. Equity exposure only decreases materially for the portfolio of the typical participant aged 60 and older.

Overconfidence may cause investor errors. Barber and Odean (2001) define overconfident investors as those who ultimately lower their returns because of excessive trading. Males, and in particular young adult males, tend to suffer from overconfidence in their ability as investors. This may arise from a feeling by some of superior knowledge

concerning the mathematics and concepts of finance (Barber and Odean 2001). Overconfidence tends to increase the amount of trading by individual investors, raising their transaction costs (Odean 1998). Barber and Odean's (2001) study of trading at a discount brokerage found that single men traded 67 percent more than single women, thereby lowering their returns net of trading costs by 1.4 percentage points per year compared to single women.

Policy Options. There are several possible alternatives to employees managing their own 401(k) plans. First, the employer could manage the investments of the 401(k) plan. The convenience store chain 7-Eleven, Inc. provides a 401(k) plan for its employees with a trustee-investment structure, where all participants' accounts are aggregated and invested as one pool, and investment earnings are distributed to participants' accounts proportionate to their account balances (Demby 2002). This approach may be desirable in firms with lower-paid employees who may have less experience with and knowledge about investing. Almost 70 percent of 401(k) participants direct the investment of their entire account balances, and an additional 17 percent are able to direct the investment of a portion of the assets in their account (U.S. Department of Labor 2004).

Second, some plan sponsors have offered automatically managed 401(k) plans, where employees can pay a fee based on their assets to have professional management of their investments (Maas 2005).

Third, employers can offer a default option, so that workers do not need to make an investment choice. One possible change in pension law would encourage employers to provide better default options for pension investments. Congress could designate some standard investment portfolios that would be granted safe harbor exemption from issues of fiduciary liability (Gale, Iwry, and Orszag 2005).

An approach to improving asset allocation in 401(k) plans would be to grant plan sponsors relief from some fiduciary liability if they offer participants alternatives to self-direction of investment choices. This could be done by offering diversified funds that would meet certain standards or by having professionally managed accounts (Gale et al. 2004).

Many workers take the default fund in a situation of automatic enrollment. Because of inertia, they then stay with that fund. Thus, the financial characteristics of the default fund in terms of risk and expected return warrant careful consideration. Some employers have chosen a low-risk money market portfolio as the default fund because they were afraid of lawsuits if participants lost money. That portfolio, however, may be too conservative for participants over the long run. It may be desirable to amend ERISA to clarify fiduciary responsibilities for employers when investment losses result from a default investment that includes stocks and bonds. Legislation has been proposed that would provide employers that establish a plan with automatic enrollment the same protection from liability for investment losses as is provided to plans in which the employee exercises control over the investment of plan assets (Purcell 2004).

As employees age and approach retirement, some financial market experts advise they should change their investment portfolios to include more bonds, reducing the risk of losses at ages near retirement.

This type of portfolio change can be made automatically by investing in a lifecycle fund. A lifecycle fund changes the portfolio mix over time, with larger shares of the fund invested in bonds as the worker ages.

This discussion of common errors that individual pension investors make suggests a number of possible pension policy options. These options would restrict the range of investment choices, but such restriction in choice could reduce investor errors.

1. Limit investment in individual stocks, including employer stocks.
2. Limit investment in mutual funds with narrow market focus.
3. Limit investment in highly risky assets such as high tech stocks.
4. Offer professional management of pension investments as an option.
5. Educate workers on common investment mistakes.
6. Limit the frequency of investment changes.
7. Provide well-chosen default options that participants can use if they do not want to make an active choice.

(4) Benefit Receipt

Background. Three issues concerning benefit receipt are (1) What happens to workers' accounts when they change jobs before retirement? (2) Are workers' accounts annuitized, taken as a lump sum, or taken as a phased withdrawal at retirement? And (3) are survivor benefits provided? While defined benefit pension plans are required to provide survivor benefits, 401(k) plans that do not provide annuities as an option, which are most 401(k) plans, are not required to provide survivor benefits.

Often when workers change jobs before retirement, they take the money out of their pension plans. At retirement, annuities provide insurance that workers will not outlive their resources. Many workers in defined contribution plans do not have the option of annuitizing their account balance. Moreover, when that option is available, workers generally do not take it. One reason for their failure to do so is that many workers have a strong preference for current consumption relative to saving for future consumption.

Information Problems. If workers underestimate their life expectancy, as well as the probability that they will live longer than their life expectancy, they will likely underestimate their retirement income needs and may undervalue the benefits provided by annuities (Drinkwater and Sondergeld 2004; O'Brien, Fenn, and Diacon 2005).

Policy Options. The federal government has changed the default so that when a worker leaves a job with a small amount in his pension account – between $1,000 and $5,000 — the employer rolls it over into an Individual Retirement Account (IRA) rather than the worker cashing it out. This policy is designed to discourage workers from cashing out their 401(k) accounts and to encourage them to keep their accumulated pension assets in the retirement income system. When a worker leaves a job with a larger amount, it might be desirable for pension plan sponsors to make automatic rollover into an IRA the default to discourage workers from taking the account balance as a lump sum. With the options of annuitization or partial annuitization, questions arise as to whether

some form of annuitization should be mandatory, or whether that should be the default option. The market for individual annuities, however, is quite small in the United States. The market may be small because these annuities typically are not protected against inflation or because life annuities are priced on the assumption that the person taking them has a higher life expectancy than the average life expectancy in the U.S. population.

Conclusion

Several 401(k) policy options could encourage workers to participate, to contribute more, to invest wisely, and to make informed choices when it comes to receiving benefits.

Many of the ideas discussed here have resulted from developments in behavioral finance and relate to the choice of defaults. Studies have shown that the choice of defaults can have a large effect on workers' behavior, and may ultimately lead to workers having larger 401(k) plan account balances at retirement.

Traditionally, the default for workers unable to decide whether to participate in a 401(k) plan has been nonparticipation. However, some plan sponsors have established defaults that preserve freedom of choice for workers wishing to make a choice, but that result in good decisions for workers who are uncertain as to what to do. These defaults start with automatic enrollment in the plan unless workers affirmatively decide to not participate.

Automatic enrollment creates problems of inadequate build-up of assets if the default contribution rate is low and the default investment is highly conservative. Thus, some firms have established a default contribution rate that starts low, but gradually increases over a period of years. Some firms have made the default investment a life cycle fund, where the default investment is more heavily weighted to stocks for younger workers, but gradually shifts towards bonds as workers' expected retirement approaches. If workers change jobs, the default in some 401(k) plans is that the plan assets are rolled over into an IRA. At retirement, the default may be that part or all of the account balance is annuitized, possibly with survivor benefits provided

While these defaults may not be optimal for all workers, they help assure that many workers will accumulate assets in a 401(k) plan that are available to finance retirement consumption. The effects of the defaults on women, minorities, and low-wage workers, in particular, deserve further attention.

While defined benefit plan investments are generally made by investment professionals, defined contribution plan investments are generally made by the workers themselves. Workers tend to make predictable investment errors. Some workers invest too heavily in the stock of their employer. Some workers never change their portfolio to adjust to their approaching retirement. The design features of 401(k) plans discussed here may be of substantial help in preventing workers from making such errors.

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