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**WHY SOME WORKERS DON'T TAKE 401(K) PLAN OFFERS:  
INERTIA VERSUS ECONOMICS**

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# **Why Some Workers Don't Take 401(k) Plan Offers: Inertia versus Economics<sup>1</sup>**

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Extending pension participation to more workers has been an elusive goal of U.S. pension policy for decades. Similar problems have been encountered in other countries with voluntary pension systems. While U.S. pension coverage rates have varied over time so that exact comparisons depend on the years compared, a smaller percentage of the workforce participated in a pension plan in 2002 than in 1979. In 2002, 46 percent of non-agricultural wage and salary workers in the private sector aged 25 to 64 participated in a pension plan, down from 51 percent in 1979 (Munnell, Lee, and Meme 2004).

The policy issue of extending pension participation to more workers is not solely a problem of inducing more employers to offer pensions. With the growth of 401(k) plans in the United States, workers offered an employer-provided pension plan have the choice whether to participate, and many do not. The percentage of workers eligible to participate in a 401(k) plan but not doing so was 43 percent in 1988, but has declined over time to 21 percent in 2004 (Munnell and Sundén 2006). In the United Kingdom, more than a quarter (29 percent) of workers who are offered the possibility of participating in a pension by their employer, but are also required to contribute if they do so, do not take the offer (Osborne 2005). In the United States, the choice to participate in a pension plan offered by the employer is only given to workers in defined contribution plans. In U.S. defined benefit plans, once a worker qualifies, the plan automatically enrolls the worker.

When considering pension policies to extend coverage to more workers, workers who do not take pension coverage when offered it by their employer are particularly interesting to study because they clearly have a choice as to whether to participate. Workers generally are required to contribute in order to participate in the 401(k) plan their employer provides. Traditionally, workers who have not affirmatively made a decision to participate do not participate by default. Recently, however, an increasing number of employers, though still a minority, have offered pension plans where workers are automatically enrolled, with the option of declining participation (Purcell 2006).

This paper examines workers who do not choose to participate in pension plans offered by their employers. It investigates reasons why workers do not participate, and

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<sup>1</sup> We have received helpful comments from participants at a seminar at the Employee Benefits Security Administration, U.S. Department of Labor, and from an anonymous reviewer.

in particular it investigates the role of inertia and similar behavioral explanations for nonparticipation.

The population of workers who do not choose to participate may provide insights about the functioning of various policy options involving worker choice: the effects of mandating automatic enrollment, as is currently being discussed in the United Kingdom; and the likely success of a policy of universal 401(k) plans or Individual Retirement Accounts (IRAs), where all employers would be obliged to offer a plan to their employees (with or without automatic enrollment).

### **A Framework for Analyzing Nonparticipation**

A number of different factors explain why workers do not participate in 401(k) plans. The workers who are not participating can be categorized into three groups: those whose employer offers a plan but they are ineligible to participate (“ineligibles”), those who are eligible to participate but do not choose to do so (“pension nonparticipants”), and those whose employer does not offer a plan.

We focus on workers who are eligible but do not participate in a 401(k) plan. Those workers can be categorized into different groups as to why they do not participate (Table 1). The pension nonparticipants group includes workers who affirmatively choose not to participate and workers who do not make a choice and through inaction end up in the default category of nonparticipation. Increasingly, plan sponsors are changing the default category to participation, but that still covers a minority of pension participants in the United States.

At least three types of reasons can be distinguished for why workers may decide not to participate. First, in traditional economics, rational, well-informed workers may affirmatively decide that they do not want to contribute and thus do not want to participate in a 401(k) plan. For example, low-income workers receive a high replacement rate through Social Security, and thus may decide they do not need additional pension income. Also, the tax incentive to participate is weak for low- and moderate-income workers because they are in a low marginal tax bracket—the majority of U.S. households are in a 15 percent or lower marginal tax bracket (Orszag 2006). The tax preference for participation in 401(k) plans has declined due to changes in the tax code that reduce the tax on capital gains on assets held outside of pensions (Munnell 2005). In addition, not all workers are offered a matching contribution by their employer. Many households lack health insurance or they are saving to purchase a home or they have credit card debt at high interest rates, all of which they may consider to take higher priority than pension participation.

Second, in addition to the traditional economic reasons for nonparticipation in a 401(k) plan by “rational” workers, workers may decide to not participate for psychological reasons. Some workers may decide not to participate because they have high discount rates for the utility derived from future consumption, and thus have a “live for the moment” attitude toward saving for retirement (Ippolito 1997).

Third, some workers may have decided to not participate because they lack financial literacy --they do not feel confident in their knowledge of investments and are unwilling to commit money to a choice they do not understand (Horack and Wood

2005). Employees with greater financial knowledge are more likely to enroll in their 401(k) plan (McCarthy and Turner 2000). However, some workers may have decided to participate, but lack the self-control or willpower to follow through on their decision (Mitchell and Utkus 2004).

Lastly, some workers have not affirmatively made a decision, but they end up not participating due to inaction because nonparticipation is the default in their plan. This last group is affected by inertia and procrastination, which is also called “status quo bias” (Madrian and Shea 2001). Inertia or procrastination may be the result of different mental processes. Workers in this group may take a passive approach to decision making (Choi et al. 2001); or they may have ambivalent feelings about the decision and for that reason have not decided whether to enroll. Ambivalence and procrastination may arise because of the complexity of the decision-making process--in particular, the complexity of the decision as to how to invest the pension funds. Some people may want to participate but not do so because they do not know how to invest their contributions.

These explanations can be summarized as five reasons for nonparticipation by workers eligible to participate. One of the reasons is the traditional economic reason--lack of economic incentives for the classical, rational decision-making worker. Four reasons apply to workers who do not fit the classic definition of being well-informed and rational. Those reasons are: (1) high discount rates, (2) lack of information, (3) lack of willpower to follow through on a decision, and (4) failure to make a decision due to passivity, ambivalence, and other similar behavioral factors. The last two reasons are often grouped together as inertia, and the four behavioral explanations are often grouped together in discussions of nonparticipation. A precise, non-overlapping categorization of the reasons for nonparticipation is probably not important, but understanding the different reasons may aid in developing effective policies that would help workers achieve good pension outcomes. In this paper, we investigate the relative importance of the different reasons for nonparticipation.

<b>Type of reason</b>	<b>Traditional economic reasons for well-informed workers</b>	<b>Psychological or behavioral economic reasons</b>			
<b>Reason</b>	Low income, higher priority expenses	High discount rate, lack of foresight	Lack of financial literacy	Lack of willpower to follow through on a decision	Inability to decide due to ambivalence or due to complexity of decision
<b>Decision outcome</b>	Decide not to participate	Decide not to participate	Decide not to participate	Decide to participate, but don't	Undecided
Source: Authors' compilation.					

## Empirical Analysis of Pension Nonparticipation

We use the Survey of Income and Program Participation (SIPP) for our study. In 2003, the SIPP asked workers about their pension participation, including what type of plan they participated in, and reasons they had for not participating in a plan offered by their employer. The Survey of Consumer Finances (SCF) in 2004 for the first time also asked workers about nonparticipation in pension plans. The SIPP is a better data set for our purposes than the SCF because the SIPP asks workers their reasons for nonparticipation, which the SCF does not. In addition, the SIPP has a substantially larger sample size than the SCF. The population we examine is private sector employees and self-employed owners of businesses ages 16 and older.

Workers who worked for an employer offering a 401(k) pension but who did not participate were asked why they did not participate. We classify workers as being ineligible if they gave one of the following answers: their job was not covered by the plan; they did not work enough hours, weeks or months; they had not worked long enough; or they were too young. U.S. pension law allows employers to use these conditions for determining eligibility. All workers who worked for an employer offering a 401(k) plan but who do not participate and who fit the criteria for ineligibility are classified here as ineligible.

Of all workers eligible for but not participating in a 401(k) plan, 18 percent were participating in a defined benefit (DB) plan. We compare workers who were eligible for a 401(k) plan and not participating in that or another plan to workers who were participating only in a 401(k) type plan. We focus on the group of nonparticipants who also were not participating in a defined benefit plan because 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 than workers who are not covered by a defined benefit plan (Andrews 1992, Bernheim and Garrett 2003). Workers covered by a defined benefit plan may decide that they have adequate pension coverage through that plan and Social Security. We note, however, that in the SIPP data, the nonparticipation rate in 401(k) plans for workers participating in a defined benefit plan was lower than for workers who were not participating in a defined benefit plan (Table 2). Because that result was unexpected, we calculated the same statistics for the 1998 SIPP and replicated the result with that data (Table 2). The explanation for this pattern is not the focus of our analysis, and awaits further analysis.

<b>Data set</b>	<b>Percentage of workers covered by a DB plan and eligible but not participating in a 401(k) plan</b>	<b>Percentage of workers not covered by a DB Plan and eligible but not participating in a 401(k) plan</b>
SIPP 1998	14.4%	21.4%
SIPP 2003	18.0	21.7

Source: 1998 and 2003 SIPP.

## Characteristics of Pension Nonparticipants

As a first step toward understanding why workers do not choose to participate in the 401(k) plans offered by their employers, we compare the characteristics of nonparticipants and ineligible workers with those of workers participating in a 401(k) plan (“participants”). We make this comparison in order to determine if nonparticipants differ in their economic and demographic characteristics from participants.

Pension nonparticipants differ from participants in some of their economic and demographic characteristics.<sup>2</sup> Nonparticipants were more likely to have low job tenure, to be female, and to be non-white than were 401(k) participants. In addition, nonparticipants were more like the ineligible workers than the participants for almost every variable in Table 3. However, the percentage of nonparticipants being offered an employer match (75 percent) was only slightly less than the percentage for participants (81 percent).

Job tenure appears to be an important factor in pension nonparticipation. Nearly three-fourths (73 percent) of nonparticipants had job tenure of 5 years or less, compared to less than half of participants (44 percent) having short job tenure. Some workers with short job tenure may decide not to participate in anticipation of a job change or in anticipation of participating after a future pay raise. Alternatively, the relatively low participation among short-tenured workers may reflect inertia in enrolling, which is eventually overcome at higher job tenure.

If workers are pension nonparticipants because of inertia, the characteristics of nonparticipants may provide insights as to factors underlying that inertia. Workers with lower education, income, age, and job tenure are likely to have less information about the 401(k) plan offered by their employer and less information about investing than other workers, suggesting that for some workers lack of information may play a role in what is often categorized as inertia.

An alternative hypothesis to inertia is the traditional economic hypothesis that some workers feel like they cannot afford to contribute to a 401(k) plan, and thus not participate due to traditional economic reasons. The low income of many nonparticipants supports that hypothesis. The median income of nonparticipants is less than \$24,000, only two-thirds of the median income of participants (\$36,000, Table 3). Table 3 further highlights the role of income in nonparticipation. The nonparticipation rate is nearly 50 percent higher for workers in the bottom income quartile than for those in the top income quartile.

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<sup>2</sup> A similar pattern was found when nonparticipants were compared to all workers participating in a pension, both defined benefit and defined contribution.

<b>Table 3: Characteristics of Participants, Nonparticipants, and Ineligible Workers in DC or 401(k) Type Plans</b>				
<b>Worker Characteristics</b>		<b>Employer Offers DC or 401(k) Plans</b>		
		Employee Participates (n = 4,654)	Employee eligible but does not participate (n = 1,298)	Employee Ineligible (n = 1,618)
<b>All</b>	All	61.6	16.8	21.7
<b>Tenure</b>	Less than 5 years	46.6 (43.8)	21.0 ( 72.6)	32.4 ( 86.6)
	5 years or more	82.2 ( 56.2)	10.9 ( 27.4)	6.9 ( 13.4)
<b>Age</b>	Young: Age 16-37	50.6 ( 39.6)	19.9 ( 57.1)	29.4 ( 65.3)
	Boomers: Age 38-57	72.1 ( 52.2)	13.6 ( 36.0)	14.3 ( 29.4)
	Pre-retirees: Age 58-64	76.2 ( 07.1)	13.6 ( 04.7)	10.2 ( 02.7)
	Retirees: Age 65+	42.1 ( 01.1)	22.9 ( 02.2)	35.0 ( 02.6)
<b>Education</b>	High School or less	56.2 ( 35.1)	19.7 ( 45.1)	24.1 ( 42.7)
	More than High School	64.9 ( 64.9)	15.0 ( 54.9)	20.2 ( 57.3)
<b>Marital Status</b>	Single	49.2 ( 35.7)	21.2 ( 56.4)	29.7 ( 61.3)
	Married	71.6 ( 64.3)	13.2 ( 43.6)	15.2 ( 38.7)
<b>Gender</b>	Male	66.4 ( 59.8)	15.2 ( 50.4)	18.4 ( 47.1)
	Female	55.6 ( 40.2)	18.7 ( 49.6)	25.7 ( 52.9)
<b>Race</b>	White	63.1 ( 87.3)	15.7 ( 79.5)	21.3 ( 83.7)
	Nonwhite	52.9 ( 12.7)	23.2 ( 20.5)	23.9 ( 16.3)
<b>Income Quartiles: Q1</b>	< \$18,456	34.6 ( 14.1)	23.1 ( 34.5)	42.3 ( 48.9)
	<b>Q2</b> \$18,456 to \$29,400	58.8 ( 23.8)	20.1 ( 29.9)	21.1 ( 24.3)
	<b>Q3</b> \$29,401 to \$49,176	72.5 ( 33.2)	14.8 ( 24.8)	12.7 ( 16.5)
	<b>Q4</b> \$49,177 and more	81.5 ( 28.9)	8.3 ( 10.8)	10.2 ( 10.3)
<b>Income</b>	Median Income	\$36,000	\$23,856	\$18,912
<b>Matching contribution</b>	Employer matching	80.5	74.7	NA

Source: SIPP 2003, authors' calculations  
Note: The sample size is unweighted sample. The statistics reported are for the weighted sample so that they are nationally representative. Participants in defined benefits plans are excluded. Numbers in parantheses add to 100 percent for each category. N

Another measure of pension coverage is participation in an Individual Retirement Account (IRA). This measure has the advantage that all workers have the option of participating in an IRA, while for workers working for an employer who does not offer a pension plan, the extent to which their nonparticipation represents lack of opportunity rather than choice or inertia is unclear. For workers not offered a pension plan, their IRA contributions are tax deductible. For workers participating in a pension plan, their IRA contributions are not tax deductible. The SIPP asks whether a

person has an IRA, which does not necessarily indicate that the person is currently contributing to it. Only 10 percent of pension nonparticipants have an IRA, which is similar to the percentage of workers whose employer does not offer a pension plan (9 percent). These figures compare to 21 percent of participants in an employer-provided DC pension plan who have an IRA (Table 4).

It is difficult, however, to interpret these results. Because all the pension nonparticipants were eligible and could have participated in an IRA had they wanted to, their low level of IRA participation supports the hypothesis that pension nonparticipants have a lower demand for pension coverage due to traditional economic reasons than pension participants, who are also more likely to have an IRA. Alternatively, however, the low level of IRA participation could reflect greater inertia for nonparticipants than participants. Because IRA assets reflect both the contributions of the participants and their roll-overs from other pension plans, the IRA coverage may in part be due to previous pension coverage.

The hypothesis that nonparticipation is due in part to traditional economic reasons is further explored by examining whether pension nonparticipants were covered by a pension on any previous job. Only one in five (20 percent) pension nonparticipants were covered by a pension plan on a previous job. The other 80 percent of nonparticipants did not have a pension on a previous job, including not having a defined benefit plan (where participation would be automatic).

Other sources of coverage	Employer offers pension plan			Employer does not have plan (n=8,602)
	Employee participates (n=4,654)	Employee eligible but does not participate (n=1,298)	Employee ineligible to participate (n=1,618)	
All ages IRA	21.2%	10.3%	12.8%	8.9%
Pension on previous job	23.4	20.2	18.3	10.9
Age 16-47 IRA	18.0	7.8	9.5	5.9
Pension on previous job	20.5	18.0	14.4	7.7
Age 48 + IRA	28.9	20.5	29.0	18.8
Pension on previous job	30.3	29.0	37.3	21.7

Source: SIPP, Authors' calculations.  
 Note: The sample size is the unweighted sample. The statistics reported are for the weighted sample so that they are nationally representative. Only two age groups are used in this table because of the small number of observations in some of the cells when a larger number of age groups was used. Participants in defined benefit plans are excluded.



## Reasons for Not Participating

As demonstrated in Table 4, pension nonparticipants have low participation in IRAs compared to pension participants. They also turn down pension participation even though most are offered a matching contribution. While those statistics are consistent with not participating for traditional economic reasons, they also could reflect nonparticipants having high discount rates or being particularly affected by inertia. Those statistics do not reveal specifically the reasons why workers do not choose to participate.

The Survey of Income and Program Participation (SIPP) for 2003 asked nonparticipants why they did not participate (Table 5). They were allowed to provide more than one reason for not participating. Of those who were eligible to participate and did not, approximately 40 percent of both men and women responded that they could not afford to contribute. Approximately 25 percent said they did not want to tie up the money. While these answers are consistent with having a high discount rate (low savers) or with traditional economic reasons for having a low demand for pension coverage, these answers indicate that many nonparticipants gave a financial reason for nonparticipation rather than that they failed to participate because of inertia.

Some workers may give an economic reason for nonparticipation because they feel that reason is more socially acceptable than a non-economic reason. This motivation can be called “justification bias” in that workers justify their behavior by providing a socially acceptable response. Another possibility is that workers may give an economic reason for nonparticipation, but the reason why they feel unable to contribute is that they have a high discount rate for future consumption, rather than that they have low income and pressing needs. Examining workers’ responses by income level provides information about workers who say that they cannot afford to participate. This information provides some support for the validity of their responses from an economic perspective (Table 6). About 15 percent of females who are eligible to participate and earn less than \$30,000 a year indicate that they do not participate because they cannot afford to participate, while only 3 percent of their counterparts earning more than \$60,000 a year indicate that they cannot afford to participate. The main point may be, however, that even among the low income group, most people did not give lack of affordability as a reason for nonparticipation.

The next most common reason for nonparticipation, given by less than 15 percent of both men and women who were nonparticipants, was that they hadn’t thought about it (Table 5). This reason is consistent with inertia, and suggests that for at least 15 percent of nonparticipants inertia is a reason for their nonparticipation. The responses to this question may understate inertia because some workers may feel that this answer is not socially acceptable even if true. In addition, the catchall category of “Some other reason” may include people who would cite reasons relating to inertia if these reasons were listed as options on the questionnaire.

Other reasons for nonparticipation that were selected by some respondents include that the person did not need the plan or that the person or the person’s spouse had other pension coverage. While the possible responses were limited by the questions asked on the SIPP, the largest percentages of eligible participants gave economic

reasons for choosing not to participate—they couldn't afford to, they didn't want to tie up their money, or they didn't need the coverage.

<b>Reasons for not contributing</b>	<b>Men (n=780)</b>	<b>Women (n=793)</b>
Cannot afford to contribute	36.3%	41.9%
Do not want to tie up money	28.2	21.5
Haven't thought about it	12.7	13.4
Do not plan to be on job long enough	3.3	4.1
Have an IRA or other pension coverage	4.4	2.8
Spouse has a pension plan	1.3	2.8
Employer doesn't contribute or doesn't contribute enough	4.3	3.7
Do not need it	3.5	2.7
Started job too close to retirement	1.3	1.1
Some other reason	24.5	22.6

Note: Percentages sum to more than 100 because workers can provide more than one answer.  
Source: 2003 SIPP, authors' calculations.

<b>Reasons</b>	<b>Less than \$30,000</b>		<b>\$30,000 to \$60,000</b>		<b>\$60,000 and more</b>	
	<b>Men</b>	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>	<b>Women</b>
Cannot afford to contribute	13.4%	14.5%	3.7%	6.1%	1.9%	3.0%
Do not want to tie up money	8.5	6.7	3.9	4.2	2.6	2.0

Source: 2003 SIPP, authors' calculations

One reason for nonparticipation is notable because so few respondents indicated that it was important. The generosity of the matching contribution that employers generally provide was rarely indicated as an important factor by nonparticipants. A matching contribution would make 401(k) plan participation more attractive to workers as a way of investing than other options outside of the plan. Roughly 4 percent of both men and women indicated that they did not participate because the employer did not offer a match or because the match was not sufficiently generous.

The low response in the SIPP data concerning the match could be an artifact of the wording of the question. A study by the Employee Benefit Research Institute (EBRI 2005) using data from the Retirement Confidence Survey provides evidence concerning the effect of an employer match that highlights how survey results can be sensitive to the wording of questions (Table 7). In that survey, 31 percent of nonparticipants indicated that they would be much more likely to participate if their employer offered a matching contribution up to 5 percent of salary.

<b>Plan feature</b>	<b>Much more likely</b>	<b>Somewhat more likely</b>	<b>No more likely</b>	<b>Already offered</b>
A matching contribution of up to 5% of your salary	31%	41%	14%	13%
A matching contribution of up to 3% of your salary	16	35	35	14
Source: Employee Benefit Research Institute and Mathew Greenwald & Associates, Inc. 2005 Retirement Confidence Survey (EBRI 2005).				

Because workers can give multiple responses, it is not possible to sum the percentages in Table 5 using the SIPP data. Table 8 deals with this shortcoming by correcting for double counting due to workers answering “yes” to both questions, and tabulating the workers who respond to the two questions identified as possibly indicating that inertia is the reason for not participating, i.e., “Haven’t thought about it” and “Some other reason.” This table indicates that as an upper bound a little more than a third of both men and women provide responses that could be related to inertia, with most of those coming from the “catchall” category, where it is not possible to determine the reason.

A British survey has suggested that a reason why workers do not choose to participate is that they believe they do not know enough about investments to make a reasoned decision as to which investment to pick (Horack and Wood 2005). This reason may be included in the catchall category in the SIPP data, and would arguably not be inertia but lack of knowledge.

<b>Reasons</b>	<b>Men</b>	<b>Women</b>
Haven’t thought about it	12.7%	13.4%
Some other reason	24.5	22.6
Workers responding “yes” to both questions	0.2	0.6
Total workers responding “Haven’t thought about it” and/or “Some other reason”	37.0	35.4
Source: 2003 SIPP, authors’ calculations.		

### **Survey Evidence from Other Sources**

The reasons for choosing not to participate in the SIPP data can be compared to the reasons given in a 1990 survey of federal government workers who did not choose to participate in the Thrift Savings Plan (Hinz and Turner 1998). The Thrift Savings Plan was designed to be similar to 401(k) plans. As in the SIPP data, the most common answer from the Thrift Savings Plan survey, given by more than a fourth of men (29 percent) and a third of women (34 percent), was an economic reason: They could not afford to contribute (Table 9).

A limitation of the SIPP data is that it contains only two questions possibly relating to inertia--“Haven’t thought about it” and “Some other reason.” The Thrift Savings Plan data, however, provide a number of non-economic reasons for not participating. Respondents were allowed to provide more than one answer. A number of nonparticipants gave responses related to information concerning the plan. Nearly one in seven men (14 percent) and one in six women (16 percent) did not contribute to the Thrift Savings Plan because 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.

Two of the possible responses relate to inertia. A tenth of the pension nonparticipants (10 percent of both 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 they had not bothered to sign up to do so. While the respondents to the survey could give multiple responses, and thus it is not possible to sum the percentages of respondents who indicated that inertia was a factor. Findings for the TSP data indicate that a sizable percentage of nonparticipants did not provide reasons that were consistent with inertia.

<b>Reasons for not contributing</b>	<b>Men</b>	<b>Women</b>
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

Source: Hinz and Turner (1998), computations from 1990 Federal Retirement Thrift Investment Board data.

The Investment Company Institute (2000) conducted a survey of persons eligible to participate in a 401(k) plan but not doing so. The primary reason for nonparticipation, given by about two-thirds of nonparticipants, was that they did not have extra money to save (Table 10). Of those who indicated they did not have the money, 73 percent said they had other financial obligations, and more than 70 percent said that they would enroll if they received a raise, which may explain in part why nonparticipants tend to have low job tenure. None of the possible responses directly measured inertia. However, about one-third gave the reason that they found the 401(k) plan’s features confusing, with the primary reason, given by more than half (53 percent) of those who indicated that problem, being that the investment options were confusing. Thus, this survey suggests that what is measured as inertia in some surveys may arise in part due to confusion about the investment options. It also indicates that traditional economic reasons are the most important reason for nonparticipation, according to the respondents.

Possibly relating to confusion over investment options, one study of plan participation rates 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). A different study found that increasing the number of choices beyond 30 or increasing the percentage of the choices that were equity funds caused participation rates to fall (Mitchell, Utkus, and Yang 2005).

<b>Reason for not participating</b>	<b>Percent of 4 01(k) nonparticipants indicating the reason was very or somewhat important</b>
Respondent does not have extra money to save	66%
Household is saving for retirement in some other way	57
401(k) plan has features the respondent does not like	36
401(k) plan's features are confusing	22
Advice from a family member, friend, or professional financial adviser	31

Source: Investment Company Institute (2000).

In the United Kingdom, all employers with five or more employees who do not otherwise offer a pension plan are required to offer their workers the option of contributing to a defined contribution pension (called a “stakeholder” pension) through payroll withholding. As in the other surveys, in the U.K. the response given by the largest number of people --29 percent--was that they did not participate because the required contribution was too expensive (Table 11). Of workers ages 35 to 54 who were not participating, 15 percent indicated that they did not participate because they did not know enough about it. That reason could be interpreted as consistent with inertia because they had not made an effort to learn about the plan, but it could also reflect on the materials they had received explaining the plan.

<b>Reasons</b>	<b>Age 35-54 (percent)</b>
Not interested	9%
Prefer to spend on other things	3
It's too expensive	29
Covered by other financial arrangements	12
Happy with other pension arrangements	13
Don't know enough about it	15
Don't know	4
Other	14

Source: Mayhew (2003, p. 70), more than one answer can be given.

Another British study attempted to determine the importance of inertia relative to economic reasons for workers turning down pension participation (Horack and Wood 2005). The study surveyed 14 employers offering pension plans, asking workers why they did not choose to participate. While some workers indicated that they simply had not gotten around to enrolling, the study found that reasons the authors characterized as being due to inertia were not the main reasons workers gave for not participating. Workers frequently cited economic reasons such as the need to pay for mortgages, raising children, paying off debts, and the costs of daily living.

### **Direct Evidence on Switching**

Thus, the survey data consistently indicates that workers respond that the most important reason for nonparticipation is economic ability to participate. However, workers may provide socially acceptable rather than true responses. More compelling evidence concerning inertia comes from observing actual behavior.

Information on the role of inertia can be seen from the behavior of participants over time with respect to persistence in default status regarding plan investments. In a study of automatic enrollment in one plan, Madrian and Shea (2003) found that more than 70 percent of people who were automatically enrolled stayed initially in the default of a money market plan. After a year, more than half of automatically enrolled participants stayed in the default, and after two years 40 percent were still in the default. Other studies have also found a sizable percentage of people who were automatically enrolled staying in the default, but also finding that over time that percentage declined. Another study (Choi et al. 2006) studied three additional companies and found that after 6 months 48 to 73 percent of those automatically enrolled were still in the default. After two years, 37 percent to 50 percent were still in the default, and after three years 29 to 48 percent were still in the default. These studies suggest some persistence of inertia, but that the effect of inertia declines over time.

Countries where workers can switch between social security and a private sector plan. To the extent that inertia is present, such switching would be unlikely to occur. In the United Kingdom, workers can switch once a year between the state social security plan and a privately managed individual account plan. In fiscal year 1989-90, when special incentives were provided for switching, more than half of workers in their 20s and 30s who were eligible to switch out of the government social security plan and into an individual account did so (OECD 2005).

A study by the Organization for Economic Cooperation and Development (OECD) has shown a strong link between the incentives to switch pension plans and the extent of switching in various countries. Incentives to switch to the reformed pension systems declined with age in the individual account reforms in Eastern Europe. That pattern of incentives is reflected in a decline by age in the percent eligible who switched--65 percent of people in their 20s switched to the new systems, compared to 35 percent of people in their 40s (OECD 2005). The percentages switching and the pattern of switching by age are inconsistent with inertia being a major factor, or at least indicate that inertia can be overcome by sufficient incentives.

## Logistic Models

In previous tables we have classified two groups of nonparticipants: those who are not eligible to participate in DC or 401(k) type plans; and those who are eligible but do not choose to participate. In this section, we focus on the second group and estimate a binary *logit* model to identify the socio-demographic and economic characteristics that influence the probability of not participating vs. participating in such plans. Because we are focusing on nonparticipation, we define a dichotomous (binary) variable  $Y$  to denote nonparticipation

$$\begin{aligned} Y &= 1 \text{ if one does not choose to participate;} \\ Y &= 0 \text{ otherwise.} \end{aligned} \quad (1)$$

A logistic model relates the odds of success to the exponential of independent variables. Here the odds of success are defined as the probability of not participating in DC plans vs. participating in them, hence

$$\frac{P_i(Y = 1)}{P_i(Y = 0)} = e^{\beta_0 + \sum \beta_i X_i} \quad (2)$$

Or, by algebraic manipulation, it can be expressed as

$$\ln \frac{P_i(Y = 1)}{1 - [P_i(Y = 1)]} = \beta_0 + \sum \beta_i X_i \quad (3)$$

where  $X_i$  are socio-demographic and economic characteristics of workers, and  $\beta_i$  are coefficients of a logit regression.

Table 12 presents the results of the estimation. All significant coefficients at 5 percent or less are marked with an asterisk. Both the Chi-square and log-likelihood values for the regression are acceptable, and the model predicts 80 percent of the cases correctly. Because logit coefficients are difficult to interpret; it is customary to present the results in terms of odds ratios or expected probabilities<sup>3</sup>. If we had no knowledge of the model, we would expect 20 percent of workers to not participate in DC plans. This is defined as the *initial probability* of nonparticipation, not controlling for any characteristics. Having estimated the model, we can calculate the expected probability of non-participation in DC plans by a specific characteristic, controlling for all other characteristics.

**Age.** Those aged 65 and older are 1.86 times more likely to not participate in 401(k) plans compared to the base category of those aged less than 38. This effect translates to an increase in the initial probability of nonparticipation from 20 percent to 31.8 percent for aged 65 and older. Similarly, the probability of nonparticipation decreases

<sup>3</sup> Expected probability ( $X_i$ ) = [Initial Probability\*(Exp( $\beta_i$ )) / (1+ Initial Probability\*(Exp( $\beta_i$ ))]

to 17.1 percent for those aged 38-47, to 15.9 percent for those aged 48-57, and to 15 percent for those aged 58-64.

**Other Plans.** Having a DB plan reduces the probability of not participating in 401(k) plans. A person with a DB plan is 0.816 times as likely to not participate in 401(k) plans than a person without a DB plan. Thus, holding all else equal, the initial probability of not participating in 401(k) plans decreases from 20 percent to 16.9 percent. A worker's participation in an IRA also reduces the expected probability of not participating, from 20 percent initially to 13.3 percent.

**Education, Gender, and Marital Status.** Education playing an important role in determining participation in 401(k) plans is once again confirmed. As compared to less than high school, those with college education are 0.6 times as likely to not participate in 401(k) plans. This decreases the probability of not participating to only 13.3 percent – a drop of almost 7 percentage points. Gender also plays an important role. Women are 1.6 times more likely than men to not participate in such plans, which raised the expected probability to 22.5 percent. As compared to married, never married and divorced/separated/widowed are each 1.5 times more likely to not participate in 401(k) plans, and the expected probability of nonparticipation increases by 7 percentage points from the initial value of 20 percent.

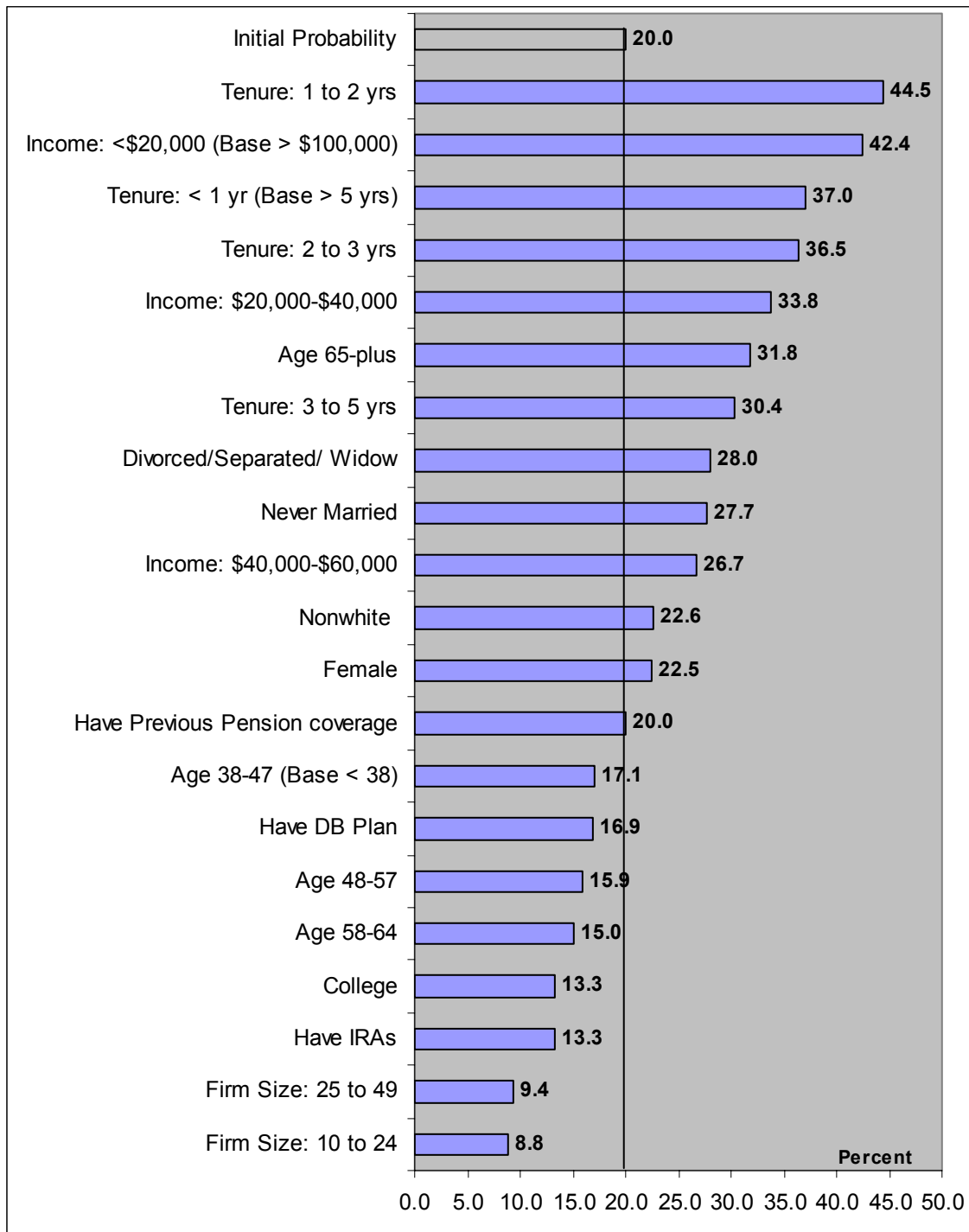
**Income.** Income plays the most important role in determining participation in 401(k) plans. As income increases, the expected probability of not participating decreases. As compared to income \$100,000 or more (the base category), a person with income less than \$20,000 is almost 3 times as likely, and a person with income \$20,000 to \$40,000 is twice as likely to not participate in 401(k) plans, which raises the expected probability of nonparticipation to 43.4 percent and 33.8 percent, respectively – an increase of 23 and 13 percentage points from the initial probability. Similarly, for incomes \$40,000 to \$60,000 the expected probability is 26.7, and for \$60,000 to \$80,000 is 24.2 percent, but as income exceeds \$80,000, the expected probability of nonparticipation declines to 18.6 percent. The importance of income as an explanatory variable provides an alternative explanation to inertia as a cause for nonparticipation.

**Tenure.** Tenure at job is also an important explanatory variable. Compared to tenure of 5 years or more (the base category), those with tenure of less than one year are 2.3 times, those with 1 to 2 years 3.2 times, those with 2 to 3 years are 2.3 times, and of those with 3-5 years are 1.7 times more likely to not participate in 401(k) plans. Thus, expected probability of nonparticipation increased to 37 percent, 44.5 percent, 36.5 percent, and 30 percent respectively. The effect of tenure appears to be consistent with an effect of inertia, but with that effect overcome to some extent with greater tenure.

To summarize the results, Figure 1 depicts the expected probabilities of all significant variables in an ascending order. Those characteristics which decrease expected probability from the initial values are below the 20 percent-line, and those which increase the expected probability are above the line.



**Figure 1: Expected Probability of Nonparticipation in DC or 401(k) Type Plans**



**Table 12. Logistic Regressions of Voluntary Nonparticipation**

Dependent Variable: Proportion of Workers Not Participating Voluntarily						
Initial Probability = 0.200 (Y = 1) Initial Odds = 0.250						
	Coefficient	S.E.	Sig.	Exp(B)	Expected Probabilities (Y = 1)	
Age 38-47 (Base < 38)	-0.192	0.078	0.014 **	0.825	17.10	
Age 48-57	-0.279	0.092	0.002 **	0.756	15.90	
Age 58-64	-0.347	0.145	0.017 **	0.707	15.02	
Age 65-plus	0.623	0.228	0.006 **	1.865	31.80	
Have DB Plan	-0.204	0.077	0.008 **	0.816	16.94	
Have IRAs	-0.491	0.097	0.000 **	0.612	13.27	
Have Previous Pension coverage	-0.003	0.001	0.017 **	0.997	19.96	
High School (Base < HS)	-0.001	0.113	0.991	0.999	19.98	
Some College	-0.122	0.113	0.283	0.885	18.12	
College	-0.486	0.128	0.000 **	0.615	13.33	
Female	0.149	0.062	0.017 **	1.160	22.49	
Never Married	0.429	0.080	0.000 **	1.536	27.75	
Divorced/Separated/ Widow	0.441	0.079	0.000 **	1.554	27.98	
Nonwhite	0.155	0.081	0.055 *	1.168	22.60	
Income: <\$20,000 (Base > \$100,000)	1.079	0.213	0.000 **	2.943	42.39	
Income: \$20,000-\$40,000	0.712	0.207	0.001 **	2.038	33.76	
Income: \$40,000-\$60,000	0.379	0.213	0.076 *	1.460	26.75	
Income: \$60,000-\$80,000	0.246	0.229	0.281	1.279	24.23	
Income: \$80,000-\$100,000	-0.092	0.291	0.752	0.912	18.57	
Tenure: < 1 yr (Base > 5 yrs)	0.856	0.097	0.000 **	2.354	37.05	
Tenure: 1 to 2 yrs	1.165	0.104	0.000 **	3.205	44.49	
Tenure: 2 to 3 yrs	0.831	0.097	0.000 **	2.297	36.47	
Tenure: 3 to 5 yrs	0.558	0.085	0.000 **	1.747	30.40	
Firm Size: < 10 ( Base > 100)	-1.627	0.739	0.028 **	0.197	4.68	
Firm Size: 10 to 24	-0.950	0.495	0.055 *	0.387	8.82	
Firm Size: 25 to 49	-0.879	0.350	0.012 **	0.415	9.41	
Firm Size: 50 to 99	-0.387	0.270	0.152	0.679	14.52	
Constant	-2.355	0.237	0.000	0.095		
Log likelihood ratio	6974.8					
Nagelkerke R-square	0.2					
Chi-square	893.8					
Percent Correct Prediction	80.5					

Note: \*\* significant at 5% or less; \* significant at 10%

We now analyze two groups of people: one, men and women by race with incomes less than \$20,000 who have no DB plan or IRA; and two, men and women by race with incomes \$40,000-\$60,000 who have no DB or IRA plans (Table 13).. For each group, we divide them into different tenure categories. Since expected probabilities from the logit model are additive<sup>4</sup>, table 13 shows the expected probabilities.

<sup>4</sup> The exp (β) as the odds ratio, for a group of variables is calculated by assigning the dummy variable a value of 1 if included, and zero if excluded.

**Table 13. Expected Probabilities of Nonparticipation in 401(k) or DC-Type Plans for Workers Age 16 to 38 Working in a Non-unionized Workplace with more than 100 Employees**

Firms size >100	Expected Probabilities of Nonparticipation			
	Men		Women	
	White	Nonwhite	White	Nonwhite
<b><u>Income &lt; \$20,000 (No DB Plan)</u></b>				
Tenure 1 to 2 years, no IRAs	57.0%	61.8%	61.7%	65.6%
Tenure 2 to 3 years, no IRAs	60.6%	64.7%	64.6%	67.9%
Tenure 3 to 5 years, no IRAs	56.7%	61.6%	61.5%	65.4%
<b><u>Income \$40,000-\$60,000 (No DB Plan)</u></b>				
Tenure 1 to 2 years, no IRAs	48.8%	55.5%	55.4%	60.6%
Tenure 2 to 3 years, no IRAs	53.8%	59.3%	59.3%	63.6%
Tenure 3 to 5 years, no IRAs	48.4%	55.2%	55.1%	60.3%

Note: All figures are statistically significant.

The expected probability of nonparticipation for a man or woman with no DB plan earning less than \$20,000 is arguably due to economic reasons of low income. On the other hand, men or women with incomes \$40,000 to \$60,000 and no DB plan or IRA may have nonparticipation due to inertia.

### Conclusions

This paper has presented four types of information concerning the importance of inertia compared to traditional economic explanations as reasons for nonparticipation by workers offered 401(k) plans.

First, nonparticipants have different economic and demographic characteristics as a group than do participants. In particular, as suggested by traditional economic theory, income may be a factor in nonparticipation. Roughly half of nonparticipants had annual income of less than \$24,000, while the median income of participants was 50 percent higher. Thus, the descriptive data suggest that the two groups have different levels of demand for pension participation.

Second, survey evidence from SIPP suggests that at most a third of nonparticipating workers give reasons for not participating that are consistent with inertia. In addition, data from four other surveys—a survey of federal government workers, a survey conducted by the Investment Company Institute, and two surveys in the United Kingdom--also indicate that inertia is not the major reason given for nonparticipation. However, the survey evidence could be biased due to workers giving what they view to be socially acceptable answers.

Third, perhaps the strongest evidence is that concerning actual behavior. Evidence from plan switching in countries where workers can switch between social security and an individual account or employer-provided plan suggests that inertia is not a major factor, or that it can readily be overcome by switching incentives.

Fourth, logit regressions confirm the importance of income as a determinant of nonparticipation, with low-income workers being less likely to participate than higher income workers.

Thus, while inertia clearly plays a role in the nonparticipation of some workers, it is not the only explanation for nonparticipation. The evidence suggests that traditional economic factors, such as low income or low incentives, also play a role, and that inertia can be overcome for many workers facing sufficient incentives.

Nonetheless, despite the evidence that traditional economic reasons are motivating the nonparticipation of some workers, studies have found that when automatic enrollment is instituted, it generally has a large effect in reducing nonparticipation. Workers who otherwise would not participate do not generally opt out when they are automatically enrolled. That result may arise because workers learn from the experience that pension contributions that appeared to be unaffordable can be made without undue hardship. It would be interesting to have survey data on workers who participated in automatic enrollment to see if that experience had changed their perception as to the affordability of participation, but such data apparently are not currently available. Some workers may not understand that pension contributions reduce their tax payments. An alternative explanation is that workers may view the automatic enrollment as a form of financial advice, and that advice causes them to change their views on pension contributions. Also, the effects of automatic enrollment raising participation could be due to some extent to workers not opting out due to inertia.

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