DO SPOUSES COORDINATE THEIR INVESTMENT DECISIONS IN ORDER TO SHARE RISKS?

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Abstract

This paper uses the 1995 and 1998 Survey of Consumer Finances to examine 401(k) asset allocation behavior by individual and household characteristics, including spousal asset allocation behavior. The results provide evidence that, among married households in which each spouse has a 401(k) plan, spouses tend to invest their 401(k)s similarly rather than diversifying their holdings across spouses to share risks. The findings also point to the lack of diversification between 401(k) asset allocations and other household holdings. However, the results suggest that households can diversify in other ways, such as through a spouse's earnings or through having an underlying defined benefit plan.

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The dramatic growth in defined contribution (DC) plan participation shifts much of the asset allocation responsibility and investment risk from employers to workers. As individuals become directly responsible for managing an ever-increasing proportion of their retirement savings, it becomes more important to understand how participants allocate their DC plan assets. Moreover, many recent Social Security reform proposals include provisions that would create privately held individual accounts. Under these plans, individuals would be responsible for directing their own asset allocations. Understanding how current DC participants allocate their assets can also provide a gauge of how workers would allocate their assets in Social Security individual accounts.

Although several studies have examined 401(k) investment behavior, most focus solely on the participant's individual and employment characteristics. When determining how workers would fare under DC plans and potential Social Security individual accounts, however, it is important to project retirement savings and income not only at the individual level, but also at the household level. Doing so requires information on the relationship of asset allocation strategies between spouses, which heretofore has been left largely unexplored. This paper attempts to fill this gap by examining how 401(k) asset allocation behavior differs by individual and employment characteristics and also by spousal asset allocation behavior. In particular, it examines whether spouses coordinate their investment decisions in order to share risk. The results provide evidence that, among married households in which each spouse has a 401(k) plan, the spouses tend to invest their 401(k)s similarly rather than diversifying their holdings across spouses.

Background and Previous Research

DC plan participation has increased dramatically in recent years, from 12 million participants in 1975 to an estimated 46 million in 1997 (Olsen and VanDerhei 1997). Some of the increase in DC coverage takes the form of supplemental coverage to a defined benefit (DB) plan; the proportion of all pension plan participants with supplemental DC coverage more than doubled from 1975 to 1987, increasing from 19 percent to 39 percent (Beller and Lawrence 1992). Moreover, DC plans are increasingly becoming the primary plan for workers. Among active pension plan participants, the proportion whose primary plan is a DC plan increased from 13 percent in 1975 to nearly 45 percent in 1997 (Olsen and VanDerhei 1997). Participation in 401(k) plans in particular increased dramatically, from 19 percent of all active pension participants in 1984 to 52 percent in 1993 (EBRI 1997, table 13.1).

The effect on retirement income of the shift from DB to DC plans depends in part on how participants allocate their plan assets. If individuals invest conservatively, they might not accumulate enough money to provide adequately for their retirement needs, and could end up worse off under DC plans than under DB plans.

Adding to the importance of understanding DC asset behavior is the fact that many recent Social Security reform proposals include provisions that would create publicly or privately held individual accounts. Individuals would be responsible for directing their own asset allocations under these plans. In general, policymakers have proposed two options for establishing individual accounts. The first option, the add-on approach, would establish individual accounts on top of the existing Social Security system. Although these individual accounts could be established in conjunction with either Social Security benefit reductions and/or payroll tax increases, they do not in and of themselves effect a reduction in guaranteed Social

Security benefits.[1] The second option, the carve-out approach, would divert a portion of current payroll taxes toward the establishment of individual accounts. Because the payroll taxes devoted to the current Social Security system would be reduced, guaranteed benefits would most likely have to be reduced under this approach.[2] The net effect on benefits is unclear, however, and would depend in part on investment returns, which in turn depend on how individuals allocate their account assets.

Several studies examine how 401(k) asset allocation behavior varies across workers. One set of studies examines this issue using administrative data from one or more plans. Analysis of plan administrative data has the advantage of being able to incorporate information about plan rules and investment options available to workers. In general, these studies find that investment allocation patterns vary by age and income. For instance, older workers invest more conservatively than younger workers (Agnew et al. 2000, Clark et al. 1998, Goodfellow and Schieber 1997), presumably in accordance with their shorter time horizons. However, a significant minority of younger workers hold zero equities (Yakoboski and VanDerhei 1996), suggesting higher liquidity needs. Some younger workers may be using their 401(k) plans as short-term savings vehicles rather than retirement plans.[3]

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[1] For example, the Archer-Shaw proposal, "The Social Security Guarantee Plan," would establish mandatory individual accounts provided through refundable tax credits from general revenues equivalent to 2 percent of OASDI taxable earnings. This proposal would neither reduce Social Security benefits nor increase Social Security payroll taxes.

[2] For example, "The Bipartisan Social Security Reform Act of 1999" (S. 1383), sponsored by Senators Gregg, Breaux, and others, would direct 2 percentage points of the payroll tax to mandatory individual accounts. In addition, traditional Social Security benefits would be reduced.

[3] Although restrictive withdrawal rules limit the ability of workers to access their 401(k) account assets prior to retirement, participants can borrow from their accounts under certain conditions, make hardship withdrawals, and take lump sum distributions at job separation. Most hardship withdrawals and lump sum distributions that are not rolled over, however, are subject to a 10 percent penalty tax. Despite this penalty, younger workers who change jobs are more likely than older workers to take lump sum distributions (Burman et al. 1999).

Workers with low incomes invest more conservatively than workers with higher incomes (Agnew et al. 2000, Bajtelsmit and VanDerhei 1997, Goodfellow and Schieber 1997, Hinz et al 1997). Again, this suggests higher liquidity needs among workers with lower incomes. Alternatively, lower earners might be more risk-averse or might not receive as much investment education as higher earners.

Evidence from administrative data also suggests that women make different investment choices than men. Women in the federal Thrift Savings Plan invest their pension assets more conservatively than men (Hinz et al. 1997), as do women in a single large private U.S. employer (Bajtelsmit and VanDerhei 1997), even after controlling for age and earnings. And although Clark et al. (1998) find that women generally do not invest more conservatively than men, they do find that the range of available investment options has a differential effect on the patterns of investment allocation by gender.

An EBRI study focuses on more specific investment allocations and the effects of company stock as an option using the EBRI/ICI database of 6.6 million 401(k) participants (VanDerhei et al. 1999). They find that having the option of company stock reduces participant allocations to other equity funds, but increases overall investment in equities. Moreover, participants whose employer contributions are mandated to be invested in company stock have higher self-directed investments in company stock. Among participants whose employer contributions are directed to company stock, investments in company stock account for one-third of participant-directed balances and more than one-half of total balances. This may signal a lack of adequate diversification among participants with options to allocate balances to company stock.

Although plan administrative data can help gauge the effects of plan design and fund

options on allocation choice, the information on participant characteristics is typically limited to age, earnings, tenure, and sometimes gender. Other characteristics that influence investment allocation choice, such as marital status, education level, and household-level information on income and wealth, are not available in administrative data. To compensate for this lack of information, Poterba and Wise (1996) combine 1988 TIAA-CREF administrative data with a participant survey containing information on marital status, education, and family income and wealth. They find that women, lower-income workers, and less educated workers allocate a smaller share of assets to equities.

Other researchers have turned to household-level surveys to examine 401(k) investment allocation. Analysis of the Survey of Consumer Finances (SCF) indicates that it is the interaction between gender and marital status, rather than gender alone, that determines investment choice (Sundén and Surette 1998). This analysis also suggests that risk-averse households invest more conservatively than households that are willing to exchange above-average risks for above-average returns. In another analysis of the SCF, Uccello (forthcoming) finds evidence that 401(k) participants with an underlying DB plan are more likely to invest in equities than are participants whose 401(k) is their primary retirement plan.

In summary, several factors help explain why otherwise similar 401(k) participants invest differently. First, some participants may simply be more risk-averse than others. A lack of financial education can also contribute to conservative investment. Participants might not be aware of the larger investment returns available from investing in equities and thus may ignore the real interest rate risk inherent in investing too conservatively.[4] Some participants, especially workers nearing retirement, have shorter investment horizons and therefore might wish to avoid

[4] See Bernheim (1998).

the short-term volatility of equity rates of return. Similarly, other participants, especially younger workers, have higher liquidity needs and therefore prefer to invest more conservatively. Finally, 401(k) participants with access to other retirement income may be able to invest more aggressively than those whose 401(k) plan is their only source of retirement income.

This paper examines these issues and addresses the lack of information available as to whether married 401(k) participants coordinate their investment decisions with their spouses in order to share risks. If one spouse's retirement assets are invested more aggressively, does the other invest more conservatively? The answer to this question will provide insight into how households might respond to increases in the availability of self-directed retirement accounts, either through 401(k) plans or through Social Security individual accounts.

Data and Methods

The data for this analysis come from the 1995 and 1998 SCF, a triennial survey conducted by the Federal Reserve Board that obtains detailed information on household finances. The survey collects information from the household head regarding household-level asset and liability information as well as individual-level demographic, employment, and pension information for both the household head and the spouse.[5] An individual-level dataset was created by splitting each married household into two observations, one for the head and one for the spouse. Household-level asset and liability data are attributed to both spouses.

SCF respondents who report they have an account-based pension plan are asked about the specific type of plan. In this analysis, participation in 401(k)s is defined broadly to include not only workers who specifically report being covered by a 401(k) or 403(b) plan, but also those

[5] For a more detailed discussion of the SCF, see Kennickell et al. (1997).

who report being in a thrift savings plan. Workers who report a different type of DC plan are also considered 401(k) participants if they report that they are allowed to borrow or withdraw from their account.[6] These other plans likely function very similarly to 401(k) plans and, in fact, may be 401(k) plans, because some workers may not be well-informed about the specific type of their DC plan.

Because this analysis focuses on whether married couples share risks, the sample includes only married 401(k) participants. Married men and married women are analyzed separately to allow for different 401(k) investment patterns by gender. In addition, the sample excludes those who do not have a choice on how their account assets are invested, because the analysis focuses on determining how participants allocate their assets when they have the choice. The final analysis sample consists of 910 married men and 513 married women who are full-time non–self-employed 401(k) participants between the ages of 25 and 64.

The categorical responses for investment choice are used to examine 401(k) investment behavior: 401(k) participants can report that they invest (i) mostly or entirely in stocks (including company stock), (ii) mostly or entirely in interest earning assets (referred to hereafter as bonds), or (iii) split between stock and bonds. An ordered probit model measuring the relative levels of assets invested in stocks is used to estimate the 401(k) asset allocation decision.

Because on average stocks achieve higher rates of return than bonds, allocating a relatively small proportion of contributions to stock accounts can, over time, produce relatively large proportions of overall balances allocated to stock accounts unless the participant periodically rebalances the accounts. Therefore, it would be preferable to examine both the allocation of contributions and the allocation of balances. Unfortunately, it is unclear whether

[6] In general, the plans not defined as 401(k) plans are profit-sharing and stock option plans.

the SCF question regarding asset allocation intends to refer to the allocation of contributions or the allocation of account balances. Respondents could be reporting either. Bajtelsmit and VanDerhei (1997) examine the relative impacts of various factors on both the allocation of contributions and the allocation of balances and find similar results for each. This suggests that the ambiguity in the SCF should not affect the results presented here.

To examine whether spouses coordinate their investment decisions to share risks, two ordered probit regression models are specified. The first model includes variables for how the spouse allocates his/her 401(k) plan assets, if any. The second model also includes information regarding how the household's IRA assets, if any, are allocated. To examine other potential areas for risk sharing, each model also includes variables for whether the spouse has a DB plan, whether the spouse has a non-401(k) DC plan, whether the spouse works, whether the participant has a DB plan, and whether the participant has a non-401(k) DC plan.

A household's entire portfolio allocation may influence 401(k) investment decisions. Therefore, the model includes variables for total household net worth and the proportion of non-retirement financial assets invested in stocks. To control for attitudes about risk, the model includes an indicator for households that are less risk-averse, based on a self-reported measure for willingness to exchange financial risk for returns. The model defines less risk-averse households as those willing to take above-average or substantial financial risks to achieve above-average or substantial returns. Although these measures are available on a household-level only, it is likely that couples share risk-return preferences. The model controls for various other characteristics, including age, race, education level (to proxy for financial literacy), and wage. Finally, the model uses a dummy variable to differentiate between the 1995 and 1998 survey years, thereby controlling for different allocation trends over time.

Results

Table 1 presents the asset allocation patterns for the two samples. Among married men with 401(k) coverage, 17 percent invest mostly in bonds, 38 percent invest in a mix of stocks and bonds, and 45 percent invest mostly in stocks. Examining allocations by the spouse's 401(k) allocation (if any) reveals a strong correlation between the 401(k) allocations of husbands and wives. Men whose wives invest their 401(k)s mostly in stocks are themselves more likely to invest their 401(k)s mostly in stocks. Similarly, those whose wives invest their 401(k)s mostly in bonds are themselves more likely to invest their 401(k)s mostly in bonds. These results suggest that rather than diversifying holdings, spouses allocate their assets similarly.

Men whose wives have DB coverage invest more conservatively, which is perhaps somewhat counterintuitive. Defined benefit plans provide a more guaranteed source of retirement income, meaning other retirement assets could be invested more aggressively. Perhaps participants whose wives have DB plans are a more risk-averse group.

Having a spouse who works can also be a way to reduce risk, as lower investment returns can be offset by spousal earnings. However, married men whose wives work allocate their 401(k)s similarly to those whose wives do not work. Having access to a DB plan provides another way to reduce risk. DB plans offer a guaranteed source of retirement income, which would perhaps encourage 401(k) participants with an underlying DB plan to allocate their 401(k) assets more aggressively. Indeed, married men whose 401(k) is supplemental to an underlying DB plan are more likely to allocate their 401(k)s to stocks than those whose 401(k) plan is their primary plan. This is inconsistent with the finding that men whose wives have a DB plan invest more conservatively.

Married women with 401(k) coverage allocate their plan assets similarly to married men,

both overall and with respect to their spouses' 401(k) asset allocation behavior. These results refute prior research findings of more conservative asset allocation behavior among women. However, 401(k) allocation patterns of married women differ from those of married men in two interesting ways. First, whereas 401(k) allocations for married men vary only minimally by whether the wife works, married women with non-working husbands invest more conservatively than those whose husband works. And second, while men with an underlying DB plan invest more aggressively than those whose 401(k) is the primary plan, women's investment patterns do not vary by the presence of an underlying DB plan. These results suggest that for married men, a DB plan represents a more important source of income than does the wife's earnings. Among married women, in contrast, husband's earnings may be a more important source of income than an underlying DB plan.

To examine how 401(k) asset allocations vary by spousal pension coverage and other factors after controlling for demographic and economic characteristics, an ordered probit regression model is estimated with two slightly different specifications. Tables 2 and 3 present the results for each of these models. Variables with positive coefficients can be interpreted as being associated with more investment in stocks, and variables with negative coefficients can be interpreted as being associated with less investment in stocks and more investment in bonds.

Among 401(k) participants whose spouses also have 401(k) plans, both models differentiate between participants whose spouses allocate their 401(k)s to bonds, those whose spouses allocate their 401(k)s to stocks, and those whose spouses allocate their 401(k)s to a mix of stocks and bonds. The results of these models confirm the high correlation between spousal allocation behavior found in the descriptive results above. Relative to participants whose spouses do not have 401(k) plans, participants with spouses who invest their 401(k) assets in

stocks are much more likely to invest their own 401(k) assets in stocks. In addition, married men whose wives invest their 401(k) assets in bonds and married women whose husbands invest in a mix of stocks and bonds are each more likely to invest their own 401(k) assets in bonds. These findings provide evidence that rather than diversifying 401(k) holdings across spouses to reduce exposure to investment risk, spouses invest similarly.

IRAs provide another form of account-based retirement savings in which the assets are self-directed. The first model specification includes a measure for whether the household has an IRA. For both married men and married women, 401(k) participants in households with an IRA are more likely to invest in stocks than are participants in households without an IRA. Households with IRAs are those which have already decided to do some retirement planning, and which may be more financially savvy and comfortable with allocating retirement savings to stock accounts.

The second model differentiates between those whose IRAs are invested mostly in bonds, mostly in stocks, or in a mix of stocks and bonds. Similar to the results for spousal 401(k) investment allocations, 401(k) participants with IRAs invested mostly in stocks are more likely to also invest their 401(k)s mostly in stocks. In addition, 401(k) participants in households who invest over two-thirds of their non-retirement financial assets in stocks are more likely to invest their 401(k)s in stocks. Each of these findings suggest that not only do 401(k) participants not diversify their holdings with respect to their spouse's 401(k) assets, they do not diversify across other financial wealth holdings.

Most of the other findings are consistent across the two model specifications. Married men are less likely to invest in stocks if their wife has a DB plan. Again, this is somewhat counterintuitive and provides more evidence against risk sharing. The one finding that is

consistent with the idea of risk sharing is that married women are more likely to invest in stocks if their husband works.

Not surprisingly, participants who are less risk-averse are more likely to invest their 401(k) assets in stocks. Although 401(k) investment allocation behavior does not vary by educational attainment among married men, married women who are college graduates are more likely to invest in stocks than are married women with a high school education only. And nonwhite women are less likely to invest in stocks than are white women. No investment allocation differences by race were found for married men. Lastly, men, but not women, showed increases in the likelihood of investing in stocks between 1995 and 1998.

Discussion

The results presented here suggest that spouses do not coordinate their investment decisions to share risks. Instead, most of the findings point to just the opposite—spouses invest similarly. In particular, the 401(k) asset allocations of one spouse are highly correlated with the asset allocations of the other spouse, even after controlling for other factors. This suggests that married households determine an overall investment strategy, which each spouse then implements in the same way. On the other hand, these results could be an artifact of the SCF survey design, in which one respondent (usually the husband) answers the survey questions for both spouses. In this case, it is possible that a respondent who is less knowledgeable about his spouse's investment allocations simply reports his own asset allocation strategy for both himself and his wife. Ideally, this analysis would be conducted using a dataset in which both the husband and wife answer questions regarding their own asset allocations. But such a dataset does not appear to exist at this time. Although the Health and Retirement Study (HRS) contains

such self-reported information for each spouse, the dataset is limited to those ages 51 to 61 in 1992 and does not contain a large enough sample of 401(k) participants whose spouses also participate in 401(k) plans.

Other findings also point to the lack of risk sharing or diversification between 401(k) asset allocations and other household holdings. Asset allocations in 401(k) plans are highly correlated with IRA asset allocations. In addition, some households show a propensity to invest in stocks. They allocate a large proportion of their non-retirement financial assets to stocks and also allocate their 401(k)s to stocks. These households may be more used to and comfortable with making asset allocation decisions in general, and stock investments in particular. They may also have more information with which to make their 401(k) asset allocation decisions.

The results also suggest that households can diversify in other ways, such as through a spouse's earnings or through having an underlying DB plan. Women are more likely to invest in stocks if their husband works, and men are more likely to invest in stocks if they have an underlying DB plan, although the later result is not statistically significant after controlling for other factors.

On one hand, the finding that spouses allocate their 401(k) assets similarly probably bodes well for retirement income prospects. In about one-third of households in which both the husband and wife participate in 401(k) plans, both spouses allocate their plan assets to stocks. These households will likely reap the higher investment returns that traditionally accrue to stock investments compared to bond investments. As long as they direct their investments to diversified stock funds rather than to individual stocks, households will accrue these higher returns without overexposing themselves to investment risk.

On the other hand, the findings highlight a smaller group of households, about 8 percent of households in which both husband and wife participate in a 401(k) plan, that might be investing too conservatively—those in which both husband and wife allocate their retirement assets to bonds. Due to the lower rates of return on bond investments, these households run the risk of not accumulating enough money to provide adequately for their retirement needs. These conservative investment patterns may become even more of a problem as the availability of self-directed retirement accounts increases, either through the continuing shift from DB to DC plans or through Social Security individual accounts.

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Table 1. 401(k) Investment Allocation
Full-Time, Non-Self-Employed, 401(k) Participants Ages 25 to 64 Who Can Direct Their 401(k) Asset Allocations

		Married Men (n=910)				Married Women (n=513)			
			401(k) Investment Allocation				401(k) Investment Allocation		
Characteristic		% of Sample	Mostly in Bond (%)	Mix (%)	Mostly in Stock (%)	% of Sample	Mostly in Bond (%)	Mix (%)	Mostly in Stock (%)
All		100.0	17.2	37.7	45.1	100.0	16.5	37.3	46.2
Spouse's 401(k) Investment Allocation (if any):	Bonds	5.4	44.5	32.6	22.9	9.3	37.3	27.2	35.5
	Mix of Stocks and Bonds	11.0	8.6	64.2	27.2	16.8	9.4	73.0	17.6
	Stocks	14.0	10.9	18.3	70.8	22.6	3.5	19.7	76.8
Spouse has DB:	No	85.4	15.9	38.2	45.9	81.3	17.2	36.2	46.6
	Yes	14.6	25.2	34.7	40.1	18.7	13.7	41.8	44.6
Spouse works:	No	27.1	16.5	39.7	43.8	8.8	34.9	39.3	25.8
	Yes	72.9	17.5	37.0	45.5	91.2	14.8	37.1	48.2
Participant has DB:	No	71.4	17.1	39.4	43.5	78.5	15.8	37.7	46.6
	Yes	28.6	17.6	33.6	48.8	21.5	19.3	35.7	45.0
Participant has non-401(k) DC:	No	94.7	17.8	37.3	44.8	95.7	16.4	36.8	46.8
	Yes	5.3	6.8	44.5	48.8	4.3	20.0	46.8	33.2
Spouse has non-401(k) DC:	No	98.1	17.3	37.9	44.8	94.4	17.0	37.1	45.9
	Yes	2.0	15.8	27.5	56.7	5.6	8.8	39.2	52.1
Household has IRA:	No	60.2	19.4	41.2	39.5	56.7	19.2	41.4	39.4
	Yes	39.8	14.0	32.5	53.5	43.3	13.1	31.8	55.1
Household IRA Allocation (if any):	Bonds	11.6	26.1	31.1	42.8	12.3	19.7	41.4	38.9
	Mix of Stocks and Bonds	3.9	13.6	46.4	40.0	4.2	35.0	51.1	13.9
	Stocks	24.3	8.3	31.0	60.8	26.8	6.6	24.4	69.0
Stocks as a Share of Financial Portfolio:	0-33 percent	75.7	19.0	39.8	41.2	74.2	18.6	39.1	42.3
	33-67 percent	13.9	13.0	33.5	53.5	14.3	11.1	30.6	58.2
	67-100 percent	10.5	9.8	28.5	67.7	11.5	10.1	33.4	56.5
Risk Aversion:	More Risk Averse	61.8	20.7	42.9	36.4	64.2	20.4	39.2	40.4
	Less Risk Averse	38.2	11.6	29.3	59.1	35.8	9.6	33.7	56.7
Household Net Worth:	Less than $50,000	24.0	21.2	35.8	43.1	24.8	20.1	35.4	44.6
	$50,000-$100,000	21.0	19.9	37.9	42.2	21.7	16.7	41.7	41.6
	$100,000-250,000	28.2	15.1	39.6	45.3	26.7	18.9	36.2	45.0
	250,000-499,999	15.7	12.3	35.8	51.9	15.5	10.2	34.9	55.0
	500,000+	11.1	16.2	39.3	44.5	11.3	11.5	38.7	49.8
Wages:	Less than $25,000	10.0	25.1	36.6	38.3	34.4	19.2	36.6	44.2
	$25,000-50,000	45.0	19.0	39.3	41.8	37.4	19.0	38.8	42.2
	$50,000-$100,000	36.8	13.3	36.2	50.6	23.9	11.5	35.9	52.7
	$100,000+	8.3	16.0	37.4	46.6	4.4	2.3	36.8	61.0
Age:	25-34	24.5	17.0	33.8	49.3	32.5	15.0	36.9	48.1
	35-44	36.6	18.1	40.0	41.9	35.7	16.4	39.8	43.9
	45-54	28.2	16.2	35.2	48.6	24.4	16.8	38.0	45.2
	55-64	10.8	17.7	45.5	36.7	7.4	23.1	24.0	52.8
Education:	No high school degree	4.7	16.1	42.7	41.3	1.9	5.0	71.7	23.3
	High school graduate	26.7	22.6	39.0	38.4	29.2	24.2	36.2	39.6
	Some college	25.5	13.6	41.3	45.2	31.4	16.8	42.1	41.2
	College degree	43.1	16.2	34.3	49.5	37.5	11.0	32.3	56.7
Race:	White	86.5	15.8	38.9	45.3	86.8	13.5	38.0	48.5
	Nonwhite	13.6	26.5	30.1	43.4	13.2	36.5	32.6	30.9
Year:	1995	44.9	19.4	40.5	40.1	45.2	18.9	39.1	42.0
	1998	55.2	15.5	35.4	49.1	54.8	14.6	35.7	49.7

Source: Author's tabulations of the 1995 and 1998 Survey of Consumer Finances.
Note: Distributions are weighted to be nationally representative.

Table 2. Ordered Probit Regression Results of 401(k) Investment Allocations
Model 1

	Married Men		Married Women	
	Coeff.	SE	Coeff.	SE
Spouse invests 401(k) in bonds	-0.817 ***	0.210	-0.295	0.206
Spouse invests 401(k) in mix	-0.181	0.137	-0.371 **	0.160
Spouse invests 401(k) in stocks	0.382 ***	0.143	0.816 ***	0.178
Spouse has DB	-0.236 *	0.134	0.061	0.184
Spouse has non-401(k)	0.177	0.305	0.089	0.244
Spouse works	0.017	0.115	0.406 *	0.235
Participant has DB	0.062	0.098	0.018	0.139
Participant has non-401(k)	0.072	0.185	-0.187	0.291
Household has IRA	0.226 **	0.102	0.265 *	0.140
Stocks as a Share of Non-Retirement Financial Portfolio				
0-33 percent (ref)	...	...	...	...
33-67 percent	0.089	0.145	0.217	0.168
67-100 percent	0.344 ***	0.129	0.092	0.198
Less risk averse	0.301 ***	0.087	0.115	0.123
Household Net Worth				
Less than $50,000 (ref)	...	...	...	...
$50,000-$100,000	0.005	0.155	0.054	0.180
$100,000-250,000	0.028	0.146	-0.019	0.183
250,000-499,999	0.060	0.190	0.005	0.213
500,000+	-0.059	0.202	-0.171	0.226
Wages				
Less than $25,000 (ref)	...	...	...	...
$25,000-50,000	0.246	0.155	-0.191	0.156
$50,000-$100,000	0.345 *	0.180	-0.039	0.212
$100,000+	0.248	0.213	-0.075	0.235
Age				
25-34 (ref)	...	...	...	...
35-44	-0.180	0.124	-0.098	0.153
45-54	-0.030	0.130	-0.081	0.181
55-64	-0.245	0.158	0.142	0.279
Education Level				
No high school degree	0.383	0.258	0.215	0.434
High school graduate (ref)	...	...	...	...
Some college	0.148	0.121	0.060	0.148
College degree	0.071	0.116	0.232	0.164
Nonwhite	-0.029	0.139	-0.378 **	0.188
1998	0.204 **	0.083	0.069	0.117

*** significant at 1% level; ** significant at 5% level; * significant at 10% level
Standard errors are adjusted to account for imputation variance. Positive coefficients indicate more investment in stocks, and negative coefficients indicate more investment in bonds.
N(married men)=910; N(married women)=513

Table 3. Ordered Probit Regression Results of 401(k) Investment Allocations
Model 2

	Married Men		Married Women	
	Coeff.	SE	Coeff.	SE
Spouse invests 401(k) in bonds	-0.820 ***	0.211	-0.260	0.206
Spouse invests 401(k) in mix	-0.196	0.137	-0.297 *	0.165
Spouse invests 401(k) in stocks	0.364 **	0.144	0.838 ***	0.186
Spouse has DB	-0.213	0.135	0.057	0.192
Spouse has non-401(k)	0.176	0.306	0.051	0.243
Spouse works	0.022	0.114	0.423 *	0.235
Participant has DB	0.061	0.098	0.010	0.140
Participant has non-401(k)	0.071	0.184	-0.190	0.292
Household invests IRA in bonds	0.014	0.137	0.021	0.232
Household invests IRA in mix	0.158	0.211	-0.526 *	0.273
Household invests IRA in stocks	0.357 ***	0.112	0.589 ***	0.150
Stocks as a Share of Non-Retirement Financial Portfolio				
0-33 percent (ref)	...	...	...	...
33-67 percent	0.075	0.146	0.218	0.166
67-100 percent	0.318 **	0.130	0.013	0.200
Less risk averse	0.288 ***	0.088	0.053	0.124
Household Net Worth				
Less than $50,000 (ref)	...	...	...	...
$50,000-$100,000	0.008	0.154	0.013	0.181
$100,000-250,000	0.029	0.147	0.050	0.186
250,000-499,999	0.077	0.191	-0.002	0.214
500,000+	-0.073	0.204	-0.211	0.232
Wages				
Less than $25,000 (ref)	...	...	...	...
$25,000-50,000	0.263 *	0.155	-0.237	0.164
$50,000-$100,000	0.348 *	0.182	-0.072	0.224
$100,000+	0.256	0.215	-0.097	0.250
Age				
25-34 (ref)	...	...	...	...
35-44	-0.176	0.125	-0.027	0.153
45-54	-0.027	0.131	-0.066	0.180
55-64	-0.209	0.159	0.129	0.283
Education Level				
No high school degree	0.378	0.259	0.155	0.437
High school graduate (ref)	...	...	...	...
Some college	0.156	0.121	0.078	0.149
College degree	0.070	0.115	0.251	0.165
Nonwhite	-0.040	0.139	-0.384 **	0.187
1998	0.199 **	0.083	0.060	0.122

*** significant at 1% level; ** significant at 5% level; * significant at 10% level
Standard errors are adjusted to account for imputation variance. Positive coefficients indicate more investment in stocks, and negative coefficients indicate more investment in bonds.
N(married men)=910; N(married women)=513