

Employee saving and investment decisions in defined contribution pension plans: survey evidence from the U.K.

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Abstract

This paper uses data from a survey of the members of a U.K. defined contribution pension plan to explore the attitudes and knowledge of employees faced with pension saving and investment decisions. The results are consistent with behavioral economics in that many employees show limited interest in their pension arrangements. Not all members have received advice about their pension, but those who have are more likely to have calculated their savings needs, to have higher levels of investment knowledge, and to actively review their investments than those who have not. The members' investment preferences appear broadly consistent with traditional finance theory, although the popularity of property may reflect familiarity bias. © 2007 Academy of Financial Services. All rights reserved.

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1. Introduction

Most occupational pension plans operate on either a defined benefit (“DB”) or a defined contribution (“DC”) basis.¹ In recent years there has been a significant shift in retirement income provision in the U.K. from the situation where employers typically offer DB plans, to a situation where DC plans are more common (e.g., NAPF, 2003). This follows a similar trend in the United States (e.g., Friedberg & Owyang, 2002).

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Saving for retirement is a complex task and the stakes, ensuring an adequate income in retirement, are high. The move from DB to DC pensions puts much more responsibility into the hands of the individual participants, principally in terms of how much to save and how to invest the resulting funds. There is evidence that many people struggle to deal with this greater responsibility. For example, the U.S. Retirement Confidence Survey (EBRI, 2006) reports only 42% of respondents had tried to calculate how much money they should save for retirement, while 42% of the respondents in a survey of U.S. DC participants conducted by the John Hancock insurance company (John Hancock, 2003) said they had little or no investment knowledge. Volpe, Chen and Liu (2006), find that U.S. pension plan administrators think that their plan members lack knowledge on important personal financial issues, including investment and retirement planning.

This paper uses data from a survey of the members of a mid-sized U.K. DC pension plan to explore the attitudes and knowledge of individual employees faced with saving and investment choices in their pension plan. The data are used to assess the plan members' behavior against key theories from both traditional and behavioral economics and finance, and to assess the impact of advice on behavior. The results show that many plan members have little interest in or knowledge about their pension arrangements, including the investment decisions that they face. This is consistent with behavioral economics ideas such as default and status quo bias, and with previous U.S. survey evidence. Where members have received some form of advice about their pension, they are more likely to have calculated how much they need to save for their retirement, to report higher levels of investment knowledge and to be active in reviewing their investments. The members' investment preferences are broadly consistent with traditional finance theory. They do not report much interest in investing in own company stock, a poorly diversified strategy, but they do show a strong preference for investing in property, which may be an alternative manifestation of Huberman's (2001) familiarity bias.

The remainder of the paper is organized as follows. Section 2 reviews the previous literature on employee decision making in DC pension plans. Section 3 describes the objectives for the study and Section 4 discusses the data and method. Section 5 presents the results, with the discussion in Section 6, limitations and directions for future research in Section 7, and Section 8 concludes.

2. Previous literature on decision making by DC plan members

Standard economic theory holds that individuals save to smooth consumption over their lifetime, and standard finance theory implies they will choose investments to maximize expected utility taking account of their level of risk aversion. However, evidence indicates that many people struggle to understand and deal with the choices they face when saving for retirement. This is consistent with the principles of behavioral economics, which suggest individuals often do not make decisions in the rational, well-informed, and unbiased manner assumed by standard theory. For example, Mullainathan and Thaler (2000) claim there are 'bounds' to human rationality and self-control and these bounds can have a significant effect on decision-making, including in saving for retirement. Baker and Nofsinger (2002) provide

a comprehensive review of the various biases documented in investor behavior more generally.

A wide range of behavioral traits has been documented in the context of DC pension plans. For example, Benartzi and Thaler (2002) argue that most members have weakly defined investment preferences and that, as a result, investment choice in DC plans is of limited value. Samuelson and Zeckhauser (1988) discuss “status quo bias,” whereby individuals stick with their initial choices even where they have cause to make a change.

There is also evidence that investors with DC pension plans display attitudes to risk and portfolio construction that are at odds with accepted investment principles. Some plan members appear to suffer from myopic loss aversion, seeking to avoid short-term losses, despite the long time horizon usually involved in planning for retirement (Benartzi & Thaler, 1999). Other findings include the use of ‘1/n heuristics’ whereby investors divide their contributions equally among the ‘n’ funds on offer, with little regard to the underlying asset composition of the funds. (Benartzi & Thaler, 2001).

Perhaps most worryingly, several studies, for example, Benartzi (2001), find DC plan members in the United States investing high proportions of their pension assets in the stock of their employer, despite the risk implications this has. VanDerhei (2002) notes that the percentages invested in company stock are partly explained by the requirement in some plans for employer contributions to be invested in company stock. On the other hand, Benartzi finds significant numbers of employees voluntarily holding high proportions of company stock in their 401(k) accounts. This may be explained by an endorsement effect, with members following company matching contributions made in stock, naïve extrapolation of past performance, or a desire to ‘invest in the familiar’ (Huberman, 2001).

The studies discussed above provide significant evidence that the investment strategies employed in self-directed retirement plans are often at odds with standard investment theory and suggest this can be explained, at least in part, by well-documented behavioral biases. The remainder of this paper seeks to add to the picture by considering case study evidence from the U.K..

3. Study objectives

The objective of the study was to gather data on the attitudes and knowledge of U.K. DC plan members with respect to pensions and saving for retirement, which can be used to assess the extent to which their behavior is consistent with theories from both traditional and behavioral economics and finance. The data allows assessment of the members’ approach to investment in terms of issues such as asset allocation, lifecycle investment theory, and portfolio diversification. It also allows assessment of the extent to which members are subject to behavioral biases such as naïve acceptance of default arrangements, status quo bias, and familiarity bias.

4. Data and method

4.1. *The plan surveyed*

Data were collected by sending a questionnaire to the members of a mid-sized occupational pension plan. The plan that participated in the survey (hereafter “the plan”) is sponsored by a long-established professional services company based in the Southeast of England, which is now a subsidiary of a United States listed company.

The plan operates on an occupational money purchase basis, with a board of trustees overseeing the affairs on behalf of members. At the date of survey, it had 1118 members, of which 484 were “active” members still employed by the company, and the remaining 634 were “deferred” members no longer employed by the company, but with preserved pension rights. The total assets of the plan amounted to £17.5m.

The minimum employee contribution to the plan is 4.5% of salary, with the employer contributing an additional 6.0%. Employees have a choice of three main investment options, graded according to risk. The “Aggressive” option (Fund A) is approximately 90% equity and 10% fixed interest, whereas the “Balanced” option (Fund B) is 80% equity and 20% fixed interest, and the “Conservative” option (Fund C) is 65% equity and 35% fixed interest. Fund B is the default option, which is adopted if the employee does not make a choice. The same fund manager manages all three funds. Additionally, members over the age of 50 have the option of investing all or part of their assets in a fund that is 100% government bonds. However, there is no automatic ‘lifecycle’ option that will switch risky assets to bonds as the member approaches retirement. Approximately 77% of plan assets are invested in the default Balanced fund. The Aggressive fund accounts for a further 10% and the Cautious fund 2%. The gilt fund holds 7% of the assets and the remaining 4% is invested in externally managed funds used for additional voluntary contributions from members.

4.2. *Survey details*

The survey questionnaire was sent out along with each member’s annual benefit statement (known as the statutory money purchase illustration). A covering letter from the plan’s senior trustee asked for the member’s help in completing the questionnaire, but no inducement was offered and no deadline set for return.

The questionnaire asked about various issues in relation to pension saving and investment, as well as collecting basic demographic information. The questionnaire is reproduced in the appendix. Table 1 lists the question numbers alongside the corresponding research objectives.²

A total of 161 useable responses were received, representing a response rate of 14.4%. The response rate for active members was higher at 19.0%. In the context of a consumer survey using a lengthy questionnaire (six pages), this can be argued to be a reasonable response rate. Nonetheless, with a small sample drawn from one company, care needs to be taken in generalizing the results.

A breakdown of the characteristics of the membership of the plan and the corresponding figures for the respondents are shown in Table 2. The nature of the sponsoring company

Table 1 Questionnaire research objectives by category

Category	Research objectives	Question numbers
Pension knowledge	Assess members' knowledge and engagement with retirement planning.	1–12
Saving adequacy	Assess members' views on required savings levels and test response to Thaler and Benartzi's (2004) Save More Tomorrow.	8–13
Investment knowledge	Assess members' knowledge and engagement with investment decision making.	14–16; 21–25
Default behavior	Assess degree to which members make active decisions or accept scheme defaults. Test for status quo bias (Samuelson and Zeckhauser, 1988), and default bias (Choi et al., 2002).	17–20
Life-cycle theory	Assess the extent to which members follow lifecycle investment theory (Bodie, 2003), reducing exposure to risky assets as retirement approaches.	22 and 26
Asset allocation	Assess the rationality of members' asset class preferences	26–28
Familiarity bias	Assess the extent to which members are attracted to investing in their employer's stock, for example through Huberman's (2001) familiarity bias.	27–28
Demographic	To enable analysis and cross-tabulation of results.	29–40

Question numbers refer to the questionnaire reproduced in the appendix.

means the membership of the pension plan has certain biases relative to the general working population. In particular, it is predominantly male (78%), older (average age 43.5 years) and more highly paid (average salary of active members of £35,079) than the U.K. working population at large.³ In turn, the respondent group has certain biases relative to the overall membership of the plan. The respondents are mainly males (89%) who on average are 2.2 years older and earn £4,300 per annum more than the typical plan member. It may be the case that older and higher paid employees have more interest in, and knowledge about, pensions than their younger and lower paid colleagues. Worthington (2006) finds that general financial literacy is positively related to age, education, and income and that males are generally more financially literate than females. This should be borne in mind when interpreting the survey results.

5. Survey results

5.1. Pension knowledge

This section covers the respondents' general attitudes to and knowledge about pensions focusing particularly on the extent to which they have benefited from advice about retirement savings.

Most respondents expect to retire at either 60 or 65 and to rely mainly on their occupational pension(s) to provide a retirement income of between 50% and 74% of their current

Table 2 Scheme and respondent demographic information

		Active members	Deferred members	All members
Plan	Members	484	634	1118
	% Male	76.9%	78.7%	77.9%
	% Female	23.1%	21.3%	22.1%
	Average Age	43.4	43.5	43.5
	Average tenure	5.9	8.8	7.6
	Average salary	£35,079	N/A	N/A
	Respondents	Members	92	66
% Male		87.0%	90.9%	88.8%
% Female		13.0%	7.6%	10.6%
Average age		47.2	46.2	45.7
Average tenure		7.2	7.4	7.3
Average salary		£39,348	N/A	N/A
Total response rate		19.0%	10.4%	14.4%
Male response rate		21.5%	12.0%	16.4%
Female response rate		10.7%	3.7%	6.9%

Active members are still employed by the company that sponsors the plan. Deferred members have left the company's employment, but retain accrued pension benefits. Salary figures for deferred members are not available because the individuals no longer work for the company and there is no way of tracking their current actual earnings. Three respondents failed to indicate whether they were still employed by the company and one deferred member returned the form complete except for the indication of sex.

income (data not reported). However, there are also a significant number of respondents who expect a retirement income of less than half the amount they currently earn. Few respondents expect to defer retirement beyond age 65, despite media commentary about the effects of longevity and the need for many employees to work later in life to ensure an adequate retirement income.

Only 59% of respondents to the survey report having received advice about their pension. It is more common for older and higher earning respondents to report having received advice. The proportion of respondents over age 50 who have had advice is 69%, compared to 52% of those under 50. The χ^2 statistic for the difference is 4.90, which is significant at the 5% level (DF = 1; $p = 0.027$). Similarly, the proportion of respondents earning over £40,000 who report having had advice at 72% significantly exceeds the proportion (45%) of those earning less than £40,000 (χ^2 11.15; DF = 1; $p = 0.001$).

Of those who have received advice, the most common source relied on was an independent financial adviser; 73% had relied on advice from an IFA at least "moderately" (data not reported). The next most common source of advice was the member's employer, with 55% of those having received advice relying on this source at least moderately. Relatively few respondents report having relied on other sources of advice.

There is some evidence that advice influences members' opinions about retirement saving.⁴ In a number of questions responses differ significantly between the group that has received advice and the group that has not. Those who have had advice are more likely to have calculated the amount they need to save for retirement and to report the corresponding figure as being above 10% of salary. There are fewer significant differences in terms of responses to the investment questions, although respondents who have received advice tend to report a more active stance on reviewing their investments. Differences in savings and

Table 3 Savings adequacy: respondents' views on savings rates

	All	Advice	No advice
a. Have you ever tried to calculate how much you need to save for retirement?			
Yes - I have done this on my own	25.2%	30.9%	16.9%
Yes - with the help of an adviser	20.1%	33.0%	1.5%
Yes - using an online resource	2.5%	2.1%	3.1%
Yes - but I was unable to work it out	7.6%	9.6%	4.6%
No - I have not tried to do this	44.7%	24.5%	73.8%
		χ^2 44.21; DF = 4; p = .000	
b. What percentage of your income do you think you should be saving for retirement (including any contribution your employer makes)?			
Up to 5%	1.3%	0.0%	3.1%
5%-to-9%	15.1%	8.5%	24.6%
10%-to-14%	37.1%	40.4%	32.3%
More than 15%	38.4%	47.9%	24.6%
Don't know	8.2%	3.2%	15.4%
		χ^2 22.20; DF = 3; p = .000	
c. Given your desired level of income in retirement, do you think:			
You are saving too much	0.6%	1.1%	0.0%
You are saving the correct amount	24.5%	30.9%	15.4%
You are saving too little	56.6%	57.5%	55.4%
You don't know if you are saving enough	18.2%	10.6%	29.2%
		χ^2 11.49; DF = 2; p = .003	
d. Would you be prepared to commit a portion of any future wage rises to increasing the amount you save—for example, if you got a £100 rise, you would pay an extra £50 to your pension?			
Yes	59.6%	66.0%	50.0%
No	28.1%	24.5%	33.3%
Don't know	12.4%	9.4%	16.7%
		χ^2 2.43; DF = 2; p = .297	

In panels a, b, and c, the “Advice” column reflects responses from those plan members who reported having received advice on their pension ($N = 94$), whereas the “No Advice” column reflects responses from members who report never having had advice about their pension ($N = 65$). The question in panel d was answered only by respondents who answered “You are saving too little” to the question in panel c (“Advice” $N = 53$; “No Advice” $N = 36$). The χ^2 test in panel b groups the “up to 5%” and “5% to 9%” categories together to avoid having cells with a low expected count. The χ^2 test in panel c groups the “too much” and “correct amount” categories together.

investment behavior contingent on having received advice are consistent with existing evidence that some plan members change their behavior after having received education and advice (e.g., Dolvin & Templeton, 2006).

5.2. Saving adequacy

The move from DB to DC raises important questions about whether employees are saving enough for retirement. However, more than half of respondents report they have never tried to work out how much they need to save for retirement or that they have tried, but were unable to work it out (45% and 8%, respectively) (Table 3). The balance of responses varies significantly between those who have received advice and those who have not: 25% of the former group has not tried to calculate how much they need to save, whereas the corre-

sponding figure for the latter group is 74%. The difference in responses is significant at the 1% level using the χ^2 test.

Despite the limited proportion of respondents who have done a formal calculation, most respondents appear to have a realistic view of how much they will need to save for retirement. Three quarters of the respondents state they should be saving 10% or more of their income, with 38% opting for a savings rate in excess of 15%. On the other hand, 16% of respondents think a savings rate below 9% will be adequate, and 8% say they do not know what the correct savings rate is. Again, there is significant variation between those who have received advice and those who have not. A required savings rate in excess of 10% is cited by 88% of respondents who have had advice, but this drops to 57% for those who have not had advice. It appears that many of the respondents who have not had advice underestimate the amount they need to save. By way of comparison, DB plans designed to produce pensions of between half and two-thirds of final salary after 40 years service tend to have total (i.e., employee and employer) contribution rates of 15% to 18% of salary (Blake, 2003).

Most respondents (57%) note they are currently saving too little for retirement. A further 18% state they “don’t know” if they are currently saving enough for retirement, whereas 25% of respondents think they are saving the correct amount. The proportion saying they are saving too little does not vary by much depending on whether the respondent reports having received advice. However, the proportion of those who have had advice who say they are saving the correct amount (31%) is more than twice as high as the proportion of those who haven’t had advice (15%) and respondents who haven’t had advice are more likely to state they are unsure if they are saving enough (29% vs. 11%). The difference in the distribution of responses is significant at the 1% level using the χ^2 test.

Thaler and Benartzi (2004) propose a prescriptive savings plan called “Save More Tomorrow” (SMarT) where employees with low saving rates commit in advance to allocate a portion of future salary increases towards retirement saving. This approach plays to the common desire to avoid reductions in nominal take home pay (driven by loss aversion and money illusion) and the systematic conflict between long-term and short-term preferences, whereby individuals often assume they will be willing to do something in future they are reluctant to do today. (Laibson, Repetto & Tobacman, 1998) Furthermore, the status quo bias identified by Samuelson and Zeckhauser (1988) means once the initial commitment is made, few people make the effort to change it.

Implementation of the SMarT plan in some U.S. plans had considerable success in raising savings rates among employees who rejected immediate action to raise their pension contributions. The survey results also suggests the approach could be effective, with almost 60% of the respondents who say they are not saving enough prepared to make a commitment to allocate a proportion of future salary rises to increasing their saving rate (Table 3, panel D). This includes 43% of those who state they plan to make no change in their contributions in the next year and 60% of those who are unsure whether they will change their contributions in the next year.

Table 4 Investment knowledge: Respondents' self reported and actual investment knowledge

	All	Advice	No advice
a. How knowledgeable are you about investment matters?			
Not at all knowledgeable	1.9%	1.1%	3.0%
Not very knowledgeable	31.1%	22.3%	43.3%
Moderately knowledgeable	41.6%	42.6%	40.3%
Fairly knowledgeable	23.6%	30.9%	13.4%
Very knowledgeable	1.9%	3.2%	0.0%
		χ^2 13.51; DF = 4; p = .009	
b. If long-term interest rates were to rise, what effect do you think this would have on the value of a fund invested in fixed income securities ("Bonds")?			
(i)			
Correct answer (fall)	All 28.8%	Advice 33.3%	No advice 22.4%
Wrong Answer	46.2%	48.4%	43.3%
Don't know	25.0%	18.3%	34.3%
		χ^2 2.78; DF = 1; p = .131	
(ii) Investment knowledge:			
Correct answer (fall)	High 39.0%	Moderate 27.3%	Low 22.6%
Wrong answer	53.7%	40.9%	47.2%
Don't know	7.3%	31.8%	30.2%
		χ^2 3.149; DF = 2; p = .207	
c. If an investment earns a return of 7% per year, roughly how long do you think it will take for the value of that investment to double?			
(i)			
Correct answer (10 years)	All 68.6%	Advice 75.3%	No advice 59.1%
Wrong answer	21.3%	18.2%	25.7%
Don't know	10.1%	6.5%	15.2%
		χ^2 4.69; DF = 1; p = .030	
(ii) Investment knowledge:			
Correct answer (10 years)	High 75.6%	Moderate 69.2%	Low 62.3%
Wrong answer	22.0%	23.1%	18.9%
Don't know	2.4%	7.7%	18.9%
		χ^2 1.93; DF = 2; p = .380	

Questions b and c gave respondents three options to choose from plus a "don't know" option. The "Advice" column reflects responses from members who reported having received advice on their pension ($N = 94$), while the "No Advice" column reflects responses from members who report never having had advice ($N = 67$). The χ^2 tests group "don't know" responses with "wrong answer" responses. In panels b (ii) and c (ii) the "high" investment knowledge category reflects respondents who said they were "very" or "fairly" knowledgeable in answer to the question in panel a, "moderate" those who answered "moderately" knowledgeable, and "low" the remainder ($N = 41, 66$ and 53 , respectively).

5.3. Investment knowledge

The John Hancock (2003) survey of United States DC plan members finds that many of them report their investment knowledge as being quite limited. In the U.K. plan surveyed here, the most common response (reported in Table 4) is for members to state they are "moderately knowledgeable" (42%). For the remainder, slightly more respondents (33%) say they are "not very" or "not at all" knowledgeable than say they are "fairly" or "very knowledgeable" (25%). Respondents who say they have not received advice typically report

a lower level of investment knowledge than those who have had advice. The difference in the distribution of responses is significant at the 1% level using the χ^2 test.

Questions designed to test understanding of basic features of investment present a mixed picture. Almost 70% of respondents were able to answer correctly a question relating to the effects of compound interest; an important aspect of long-term saving. However, far fewer (29%) were able to identify that the value of fixed income securities would be likely to fall if long-term interest rates rise. A key part of the investment choice available to members is to choose between funds that differ in terms of their asset allocation between equities and bonds; a choice that may be difficult for members unfamiliar with the basic characteristics of these types of investments. Those who have had advice perform slightly better than those who have not, but still only 33% of them identify the correct answer to the fixed interest question and the difference is not significant.

In both of the test questions, respondents who report high levels of investment knowledge are more likely to get the question correct than those who report moderate knowledge, who in turn perform better than those with low self-reported knowledge. This gives some validity to the self-reported knowledge levels, although the differences between categories are not statistically significant.

5.4. *Default bias*

Choi, Laibson, Madrian and Metrick (2002) discuss how members of U.S. retirement plans tend to take the “path of least resistance;” accepting default options and making few active choices. In this plan, 54% of respondents note they prefer to make the decisions about which funds to invest in themselves, whereas 46% would prefer someone else to make the decisions for them. Furthermore, 48% of respondents describe the investment funds in their pension account as being the result of an active choice they made, whereas 52% of respondents say they accepted the plan default option (Table 5). Respondents who have had advice are more likely to say they prefer making decisions themselves and that the investments they hold are the result of an active decision. However, the difference in the distribution of responses is not statistically significant.

The survey results indicate that a significantly higher proportion of respondents are prepared to make an active choice than is typically the case in U.K. pension plans. For example, consultancy Hewitt Bacon and Woodrow reports that about 80% of members of group personal pension plans in the U.K. tend to accept the default option. (Bridgeland, 2002) However, it is also the case that almost 80% of the plan assets are in the default ‘Balanced’ fund, meaning many of those who exercised active choice still decided this fund was the most appropriate for them. It is worth noting that the structure of the plan with three funds labeled “A, Aggressive;” “B, Balanced;” and “C, Conservative” may lead investors to choose the balanced fund (i.e., the middle option) based on the “extremeness aversion” discussed by Benartzi and Thaler (2002).

In terms of managing the investment choices they have made, two-thirds of respondents state they review the investments in their pension plan at least every three years, with 48% doing so at least annually. However, at the other end of the scale, the remaining third review their choices less than once every five years, or not at all. Those who do review their choice

Table 5 Default bias: Respondents' attitudes to investment choice

	All	Advice	No advice
a. As regards the investment choices in your pension scheme, do you prefer to:			
Make the decisions yourself	53.8%	58.1%	47.8%
Have someone else make the decisions	46.3%	41.9%	52.2%
		χ^2 1.63; DF = 1; p = .197	
b. Are the investment funds in your pension the result of:			
An active choice you made	47.5%	53.8%	38.8%
A default option set by the scheme	52.5%	46.2%	61.2%
		χ^2 3.49; DF = 1; p = .060	
c. How often do you <u>review</u> the investments in your pension fund?			
More than once a year	5.0%	6.5%	3.0%
Every year	43.1%	48.4%	35.8%
Every 2–3 years	18.1%	22.6%	11.9%
Every 5 years	0.6%	0.0%	1.5%
Less than every 5 years	16.3%	12.9%	20.9%
Never	16.9%	9.7%	26.9%
		χ^2 13.69; DF = 4; p = .008	
d. How often do you <u>change</u> the investments in your pension fund?			
More than once a year	0.6%	0.0%	1.5%
Every year	1.3%	1.1%	1.5%
Every 2–3 years	18.1%	25.8%	7.5%
Every 5 years	1.3%	1.1%	1.5%
Less than every 5 years	36.3%	37.6%	34.3%
Never	42.5%	34.4%	53.7%
		χ^2 8.77; DF = 2; p = .012	

The “Advice” column reflects responses from those plan members who reported having received advice on their pension ($N = 93$), whereas the “No Advice” column reflects responses from members who report never having had advice about their pension ($N = 67$). The χ^2 tests in panels c and d group the “5 years” and “less than every 5 years” categories together to avoid having cells with a low expected count. The χ^2 test in panel d additionally combines the first three categories.

regularly make few changes as a result; 36% make changes less than once every five years and a further 43% never make any changes, consistent with the status quo bias noted by Samuelson and Zeckhauser (1988). Members who have had advice are more likely to review and change their investments on a regular basis, with the difference in the distribution of responses significant at the 5% level in both cases.

5.5. Asset allocation

Respondents were asked to state the extent to which they thought particular asset classes were appropriate for saving for their retirement. The results of the question, reflecting the average score on a 1-to-5 scale where 1 is “not at all appropriate” and 5 is “very appropriate” are shown in Table 6. The table also shows the percentage of respondents who state each asset class is either “fairly” or “very” appropriate. Investment in property attracts the highest scores, with 83% of respondents saying they think owning their own home is either a fairly or very appropriate way of saving for retirement and 77% saying the same about other investments in property. This compares to 52% for U.K. equity funds and 50% for U.K. gilts.

Table 6 Asset allocation: Respondents' views on appropriateness of asset classes for retirement saving

	Average score	All	Advice	No advice	<50 years	>50 years
Cash	2.5	22.2%	22.2%	22.2%	20.9%	24.6%
Government bonds	3.5	49.7%	49.2%	50.0%	41.4%	60.7%
Corporate bonds	3.1	32.4%	30.5%	33.7%	30.7%	33.9%
U.K. equities	3.5	51.7%	38.3%	60.4%	47.8%	56.7%
Overseas equities	3.0	30.0%	21.7%	35.6%	28.9%	30.5%
Individual shares	2.8	24.8%	22.0%	26.7%	21.6%	30.0%
Employer's stock	2.4	11.7%	12.7%	11.0%	9.9%	14.5%
Property	4.1	76.8%	77.4%	76.3%	78.0%	76.2%
Own home	4.3	82.8%	87.5%	79.6%	87.1%	77.8%

Responses to the question "How appropriate do you think the following asset classes for saving for your retirement?" Average score is based on scale 1 = "not all appropriate" through to 5 "very appropriate". Percentage figures are % of respondents saying asset class is either a "fairly" or "very" appropriate. The "Advice" column reflects responses from those plan members who reported having received advice on their pension ($N = 94$), while the "No Advice" column reflects responses from members who report never having had advice about their pension ($N = 67$). The "<50 years" column reflects responses from those plan members who are aged less than 50 years ($N = 94$), while the ">50 years" column reflects responses from members who are aged greater than 50 years ($N = 66$). χ^2 tests are all $DF = 1$.

Several aspects of the respondents' investment preferences appear consistent with traditional finance theory. For example, an understanding of the benefits of diversification is evident in the relatively low scores assigned to individual shares and particularly own-company stock. Equally, cash is given one of the lowest scores, contrary to the view that individual pension fund investors often show 'myopic loss aversion' by favoring stable, but low return, assets (Benartzi & Thaler, 1999). For most asset classes there is relatively little difference between the views of the respondents who have had advice and views of those who have not. The group that has had advice is, however, more disposed towards equity investment: 60% state U.K. equity funds are a fairly or very appropriate way of saving for retirement, compared to 38% of the group who haven't had advice. The difference is significant at the 1% level. For overseas equities, the corresponding figures are 37.3% and 20.4%, although the difference is only significant at a 10% level. These results are broadly consistent with Dolvin and Templeton's (2006) findings that some plan participants change their asset allocation decisions after attending investment education seminars.

5.6. Lifecycle theory

The 'lifecycle' approach to investment (e.g., Bodie, 2003) argues that asset allocation should vary with age, with higher weightings in risky assets (i.e., equities) at younger ages,

Table 7 Familiarity bias: Respondents' views on investment in own company stock

	All	Advice	No Advice
a. If you were given the option of investing some of your pension fund in [your employer's] shares—that is those of your employer; how attractive would this be to you?			
Not at all attractive	34.2%	34.4%	33.9%
Not very attractive	29.7%	30.0%	29.2%
Moderately attractive	24.5%	23.3%	26.2%
Fairly attractive	6.5%	6.7%	6.2%
Very attractive	5.2%	5.6%	4.6%
		χ^2 0.21; DF = 4; p = .995	
b. If the option of investing in [your employer's] shares were available, what percentage of your fund would you allocate to this option?			
0% of my fund	50.7%	47.6%	55.2%
1–5% of my fund	22.5%	22.6%	22.4%
6–10% of my fund	9.2%	9.5%	8.6%
11–20% of my fund	9.9%	10.7%	8.6%
>20% of my fund	7.8%	9.5%	5.2%
		χ^2 1.41; DF = 4; p = .843	

The questions gave the name of the ultimate parent company, which is a U.S. listed company, but it is omitted here for confidentiality reasons. Question b required respondents to write in a figure, but the responses are shown in ranges for ease of reference. The “Advice” column reflects responses from those plan members who reported having received advice on their pension ($N = 90$ in panel a; $N = 84$ in panel b), while the “No Advice” column reflects responses from members who report never having had advice about their pension ($N = 65$ in panel a; $N = 58$ in panel b).

and lower risk strategies (bonds) as retirement approaches. This has the objective of reducing the risk of losses close to retirement when there is little scope to recover from them.⁶ When asked directly, 45% of respondents state they plan to reduce the proportion of equities in their account as retirement approaches, whereas 16% say they do not, and 39% don't know if they will (data not reported). The plan offers a fixed income fund for the use of members over the age of 50 years to enable them to adopt this approach. The older plan members do appear to have a more favorable view of bond investment with 61% of respondents over the age of 50 saying gilts are either a fairly or very appropriate way of saving for their retirement, compared to 42% of respondents under 50 years of age. The difference is significant at the 5% level. However, there are no other significant differences in asset class preferences between those aged under 50 and those aged over 50. Notably, the higher score assigned to gilts by older respondents is not mirrored in a lower score being assigned to equities.

5.7. Familiarity bias

In the United States many DC plan members have high levels of investment in the shares of their employer in their pension accounts. The 1990 Social Security Act limits self-investment by U.K. pension funds to 5% of assets, meaning the issue has not become significant in the U.K. The survey results show that relatively few respondents view the idea of investing their pension assets in the stock of the plan sponsor as attractive (Table 7). Only 12% stated it was either fairly or very attractive, whereas 30% stated it was not very

attractive and a further 34% stated it was not at all attractive. If the option to invest in the employer's stock were available, 51% of respondents indicated they would not put any part of their fund into it. A further 23% would allocate 5% or less. However, it is still notable that 18% of respondents would be prepared to put more than 10% of their pension fund assets into their employer's stock. For these investors, limited diversification appears to be outweighed by the attraction of investing in the familiar.

6. Discussion

Overall, the survey depicts a situation where most of the employees are relying on their DC occupational pension for a retirement income that they expect to be comparable with what the best quality DB plans have achieved. Most of them have realistic expectations about how much they will need to save to achieve this, but also note that their current saving level falls short of this. Although many have received advice about their pension, a significant minority has not and this has to be viewed against the fact that the respondents do not regard themselves as particularly knowledgeable about investment matters and that many struggle to answer questions on basic aspects of investment.

Despite the limited investment knowledge, several aspects of the respondents' investment preferences appear rational in the context of retirement planning and consistent with standard theory, for example, a desire to avoid investment in individual stocks and, particularly, investment in their employer's stock.

Financial advice appears to make a difference to the members attitudes and choices. Those who have had advice are more likely to state they know what they are required to do and more likely to take active decisions in managing their pension accounts (or at least to state that they do). Therefore, it is easy to come to the view that advice is a beneficial in the context of DC pensions and that more of it should be available. This obvious counterpoint is that advice has a cost that employers and employees may be unwilling to bear.

It is interesting that the respondents lack enthusiasm for investing in their employer's stock, given that self-investment is a significant characteristic of many U.S. DC plans. Benartzi (2001) has argued that payment of employer contributions in the form of stock creates an endorsement effect and it may be that the absence of this endorsement (i.e., stock is not even offered as an option) has an influence on the employees' preferences.

The strong views expressed about the attractiveness of property may be of more concern. Most employees will already have significant exposure to property through home ownership and additions to this are likely to result in poor diversification. It may be that this preference is an alternative manifestation of the familiarity bias that leads U.S. DC plan members to invest in own company stock.

7. Limitations and directions for future research

Although the survey provides evidence to consider in relation to behavioral and traditional finance theory, there are, of course, limitations to the conclusions that can be drawn. The data

are drawn from only one plan where the members have particular characteristics and face particular choices and circumstances. Furthermore, like any survey it relies on self-reported information, with no way of knowing how accurate it is. The survey must also be interpreted without knowing about the broader financial circumstances and investment holdings of the respondents.

As noted earlier, the membership of the plan has certain biases relative to the working population at large and the self-selection of the respondents exacerbates these biases. It could be argued that older and more highly paid (and more highly educated) employees are more likely to be interested in, and knowledgeable about, their pension arrangements than the average employee. To the extent that this is true, the results of the survey should be taken as an upwardly biased view of the level of knowledge and interest in pensions and investment among employees with DC pensions.

Future research can improve our understanding by considering evidence from a wider range of plans, spanning different industries, regions, and plan designs. Furthermore, survey evidence can be complemented by more qualitative work, for example, using focus groups, and use of plan level administrative data. This information should ultimately help us answer the key question of what can best be done to support employees in retirement saving.

8. Conclusions

This paper provides a case study view of the attitudes and beliefs of investors within a U.K. DC pension plan. The results are broadly consistent with behavioral economic theory in that many employees show limited knowledge and interest in their pension arrangements. They support the case for broader provision of investment advice in the workplace and for ongoing care in choosing pension plan default options in the knowledge that many employees will accept them. There is also some support for the effectiveness of programs with behavioral underpinnings, such as “Save More Tomorrow.” Plan members appear to have a rational view on the attractiveness of investing their assets in own company stock, but also show a preference for property investment that may be driven by behavioral bias. However, the results are drawn from one set of employees in one particular plan and care needs to be taken in generalizing them. There is clear scope to extend the work to other plans in the U.K. and beyond. As DC pensions become more common it will be important that we know how to structure them and how to support the plan members to maximize their chances of enjoying comfortable retirement incomes.

Notes

1. In a DB plan, an employee who qualifies for a pension will receive an income from the pension plan from retirement until death. The annual benefit is typically a proportion of the employee's final salary, with the proportion depending on length of tenure in the pension plan. In contrast, in a DC plan contributions are paid into the plan and the employee can usually choose from a range of investment options. The

contributions, with accumulated investment returns, are then available to provide a retirement income, either directly or by purchasing an annuity.

2. To conserve space, and in some cases because of low response rates, the results of questions 3, 14, 16, 31–33 are not discussed in this paper.
3. Data from the Office of National Statistics show that in Q4 2003 56% of people in employment were male, that the mean age in the labor force in 2001 was 39, and that average gross annual pay for full time employees in the 2002/03 tax year was £25,170 (available at: www.statistics.gov.uk).
4. Alternatively, it may be that respondents with these particular characteristics are more likely to have sought advice. It is not possible to determine the direction of causality.
5. “Save More Tomorrow” is a registered trade mark.
6. Bodie (2003) argues that higher-risk strategies are appropriate at younger ages (1) because young people have more of their wealth in ‘bond-like’ human capital and can afford to take more financial risk, and (2) because younger people have greater flexibility to increase their labour supply to make up for any shortfall created by losses in financial assets.

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Appendix – Survey Questionnaire

SECTION A – QUESTIONS ABOUT YOUR PENSION

1. At what age do you expect to retire? [] years of age

2. How long have you been a member of the [Company Name] Retirement Benefit Plan?

- Less than one year [] (Tick one)
- One-to-five years []
- Six-to-ten years []
- More than ten years []
- Don't know []

3. Do you think all employees should be required to join their employer's pension scheme?

- Yes []
- No []
- Don't know []

4. What do you expect to be your main source of income in retirement?

- Pension from employer(s) [] (Tick one)
- Personal pension []
- State pension []
- Earnings from employment []
- Income from investments []
- Income from property []
- Other [] (Please specify.....)
- Don't know []

5. What proportion of your current income do you expect to maintain in retirement?

- All of it (100%+) [] (Tick one)
- Three quarters or more (75%-99%) []
- Half or more (50%-74%) []
- Quarter or more (25%-49%) []
- Less than a quarter (0%-25%) []
- Don't know []

6. Have you ever received advice about your pension?

- Yes []
- No []
- Don't know []

If you answered "yes" to question 6, please go to question 7 – otherwise, please move on to question 8.

7. To what extent did you rely on advice about your pension from:

	Not at all	Not much	Moderately	Quite a lot	Very much
Employer	<input type="checkbox"/>				
Independent Financial Adviser	<input type="checkbox"/>				
Other Professional Adviser	<input type="checkbox"/>				
Bank / Building Society	<input type="checkbox"/>				
Insurance / Investment Company	<input type="checkbox"/>				
Friend or Family member	<input type="checkbox"/>				
Internet / Online resource	<input type="checkbox"/>				
TV / Newspaper feature	<input type="checkbox"/>				

8. Have you ever tried to calculate how much you need to save for retirement?

- Yes - I have done this on my own (Tick one)
 Yes - with the help of an adviser
 Yes - using an online resource / the internet
 Yes - but I was unable to work it out
 No - I have not tried to do this

9. What percentage of your income do you think you should be saving for retirement (including any contribution your employer makes)?

- Up to 5% (Tick one)
 5%-to-9%
 10%-to-14%
 More than 15%
 Don't know

10. Given your desired level of income in retirement, do you think:

- You are saving too much (Tick one)
 You are saving the correct amount
 You are saving too little
 You don't know if you are saving enough

If you answered "too little" to question 10, please go to question 11 - otherwise, please move on to Section B.

11. What is the main barrier to you saving enough?

- Don't earn enough (Tick one)
 Have other financial priorities
 Plan to save more in future
 Don't trust pensions
 Lack of interest in financial matters
 Other (Please specify.....)

12. Over the next year, do you plan to:

- | | | |
|---|--------------------------|------------|
| Increase what you pay into your pension | <input type="checkbox"/> | (Tick one) |
| Keep the contributions you make unchanged | <input type="checkbox"/> | |
| Decrease what you pay into your pension | <input type="checkbox"/> | |
| Don't know | <input type="checkbox"/> | |

13. Would you be prepared to commit a portion of any future wage rises to increasing the amount you save – eg if you got a £100 raise, you would pay an extra £50 to your pension?

- Yes No Don't know

SECTION B – QUESTIONS ABOUT INVESTMENTS IN YOUR [COMPANY NAME] PENSION

14. Do you agree with the statement:

"I am a cautious person who generally avoids risks"

- | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Disagree strongly | Tend to
Disagree | No strong
opinion | Tend to
Agree | Agree
strongly |
| <input type="checkbox"/> |

15. How knowledgeable are you about investment matters?

- | | | | | |
|-----------------------------|---------------------------|-----------------------------|--------------------------|--------------------------|
| Not at all
knowledgeable | Not very
knowledgeable | Moderately
knowledgeable | Fairly
knowledgeable | Very
knowledgeable |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

16. Do you have any savings or investments apart from your pension?

- Yes No Don't know

17. As regards the investment choices in your pension scheme, do you prefer to:

- | | | |
|--|--------------------------|------------|
| Make the decisions yourself | <input type="checkbox"/> | (Tick one) |
| Have someone else make the decisions for you | <input type="checkbox"/> | |

18. Are the investment funds in your pension the result of:

- | | | |
|------------------------------------|--------------------------|------------|
| An active choice you made | <input type="checkbox"/> | (Tick one) |
| A default option set by the scheme | <input type="checkbox"/> | |

19. How often do you review the investments in your pension fund?

- | | | |
|--|--------------------------|------------|
| More than once a year | <input type="checkbox"/> | (Tick one) |
| Every year | <input type="checkbox"/> | |
| Every two-to-three years | <input type="checkbox"/> | |
| Every five years | <input type="checkbox"/> | |
| Very occasionally (less than once every 5 years) | <input type="checkbox"/> | |
| Never | <input type="checkbox"/> | |

20. How often do you change the investments in your pension fund?

- | | | |
|--|--------------------------|------------|
| More than once a year | <input type="checkbox"/> | (Tick one) |
| Every year | <input type="checkbox"/> | |
| Every two-to-three years | <input type="checkbox"/> | |
| Every five years | <input type="checkbox"/> | |
| Very occasionally (less than once every 5 years) | <input type="checkbox"/> | |
| Never | <input type="checkbox"/> | |

21. Is the range of investment options in your pension scheme:

- | | | |
|---|--------------------------|------------|
| Too narrow – there are not enough options | <input type="checkbox"/> | (Tick one) |
| About right | <input type="checkbox"/> | |
| Too broad – there are too many options | <input type="checkbox"/> | |
| I don't know what the options are | <input type="checkbox"/> | |

22. Do you plan to reduce the proportion of your pension invested in equities (“shares”) as you get nearer to your planned retirement date?

- | | | |
|------------------------------|-----------------------------|-------------------------------------|
| Yes <input type="checkbox"/> | No <input type="checkbox"/> | Don't know <input type="checkbox"/> |
|------------------------------|-----------------------------|-------------------------------------|

23. If long-term interest rates were to rise, what effect do you think this would have on the value of a fund invested in fixed income securities (“Bonds”)?

- | | | |
|-----------------------------------|--------------------------|------------|
| Value of fund would rise | <input type="checkbox"/> | (Tick one) |
| Value of fund would fall | <input type="checkbox"/> | |
| Value of fund would stay the same | <input type="checkbox"/> | |
| Don't know | <input type="checkbox"/> | |

24. Which factor most influences your choice of investments for your pension fund?

- | | | |
|--------------------------------------|--------------------------|------------|
| Level of charges and fees | <input type="checkbox"/> | (Tick one) |
| Performance record of the investment | <input type="checkbox"/> | |
| Recommendation of my adviser | <input type="checkbox"/> | |
| Brochure / marketing information | <input type="checkbox"/> | |
| Other (Please Specify.....) | <input type="checkbox"/> | |

25. If an investment earns a return of 7% per year, roughly how long do you think it will take for the value of that investment to double?

- | | | |
|---------------|--------------------------|------------|
| Five years | <input type="checkbox"/> | (Tick one) |
| Ten years | <input type="checkbox"/> | |
| Fifteen years | <input type="checkbox"/> | |
| Twenty years | <input type="checkbox"/> | |
| Don't know | <input type="checkbox"/> | |

26. How appropriate do you think the following investments are for saving for your retirement?

	Not at all appropriate	Not very appropriate	Moderately appropriate	Fairly appropriate	Very appropriate
Cash deposits	[]	[]	[]	[]	[]
Government bonds (Gilts)	[]	[]	[]	[]	[]
Corporate Bonds	[]	[]	[]	[]	[]
UK Equity Funds	[]	[]	[]	[]	[]
Overseas Equity Funds	[]	[]	[]	[]	[]
Individual Company shares	[]	[]	[]	[]	[]
Shares in your employer	[]	[]	[]	[]	[]
Investment in property	[]	[]	[]	[]	[]
Owning your own home	[]	[]	[]	[]	[]

27. If you were given the option of investing some of your pension fund in [Company Name] shares – that is those of your employer - how attractive would this be to you?

Not at all attractive	Not very attractive	Moderately attractive	Fairly attractive	Very attractive
[]	[]	[]	[]	[]

28. If the option of investing in [Company Name] shares was available, what percentage of your fund would you allocate to this option?

[] % of my fund

SECTION C – DETAILS ABOUT YOUR [COMPANY NAME] PENSION

29. Are you still employed by [Company Name]?

Yes [] No []

30. Do you know the details of your pension, or have them to hand?

Yes [] No []

If you answered “yes” to question 30, please go to question 31 – otherwise, please move on to Section D.

31. How much do you contribute to your pension? [£] per month

32. How much does your employer contribute to your pension? [£] per month

33. What percentage of your pension is invested in each of the plan options:

“A” Fund (Aggressive)	[]	%
“B” Fund (Balanced)	[]	%
“C” Fund (Conservative)	[]	%
Gilts Fund	[]	%
External AVCs	[]	%

Section D of the questionnaire asked questions on standard demographic variables (Sex; Age; Marital Status; Education; Occupation; Income). In the interests of conserving space, the questions are not reproduced here.

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