

Determinants of Participation in and Contributions to All-Employee Stock Plans

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Introduction

This paper assesses influences on participation in and contributions to all-employee stock plans, using empirical data on the U.K. Save As You Earn (SAYE or Sharesave) plan. All-employee stock plans enable employees to acquire options in their companies' shares while subscribing to a tax advantageous Save As You Earn saving contract so that options can be exercised in three, five, or seven years time. These plans have been popular among U.K. companies and their employees since their introduction over twenty-five years ago. In most years during the 1990s around one million employees (3–4 percent of the employed workforce) typically subscribed to a new SAYE offer.

Although rising markets, discounts on market price, and substantial tax concessions offered the opportunity for substantial gains at no downside risk, by no means did all eligible employees participate in SAYE offers (see Engelhardt and Madrian 2004). This raises an interesting question: what factors influence whether an employee decides to participate in a SAYE plan? And what influences how much she decides to contribute?

The role of ownership of company stock in the increasingly important defined contribution pension system in the United States has generated considerable interest in these questions (Mitchell and Schieber 1998). They are important for companies, policy makers, and researchers. Companies need to estimate the likely take-up of their share plans as a way of forecasting charges under new accounting standards. If share plans are seen as a way of spreading wealth (Gates 1998), it is important to determine whether subscription-based plans counter or merely reproduce existing patterns of resource inequality. And for academics interested in the effects of share plans, what goes into a share plan in terms of employee characteristics is likely to have a bearing in what comes out in terms of attitudinal and behavioral effects.

Several specific questions are posed in this paper: One, to what extent do income levels determine participation and contributions (relating to the

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inequality issue)? Two, how far do other personal characteristics, such as age and gender, influence these decisions? Three, how important are attitudes toward the firm and views of the plan itself? Four, does “familiarity” with the company and its share plans influence the level of contributions, as has been suggested in the behavioral finance literature (Huberman 2001)? Five, are the balance of factors influencing participation similar to those influencing contribution levels?

The main findings are as follows. Income, then age, are the strongest influences on participation, although, similar to other savings studies, age has a hump-shaped effect (Banks and Tanner 2001). Contrary to some recent findings on 401(k) plans (Huberman et al. 2003), gender does not have an important effect. Attitudinal factors have a small effect, but attitudes toward the plan are far more important than attitudes toward the firm (Dewe et al. 1988). In common with other studies (Degeorge et al. 2004), determinants of the contribution level decision are broadly similar to those of the participation decision. Finally, the evidence is supportive of the view that “familiarity” influences the level of contributions to employee stock plans.

The paper makes a contribution by extending analysis of participation in pension plans to other share ownership plans. It shows that the factors influencing participation and contributions are similar across different types of savings plans. The research goes beyond most studies in utilizing attitudinal as well as demographic information. By collecting data directly from employees rather than from plan records, the results have a greater depth and richness.

The paper proceeds by reviewing recent literature on influences on savings decisions. Some predictions are derived from this literature, and these predictions are then tested using the U.K. data. Results are presented in sequence for participation decisions and contribution levels.

Background

The 401(k) literature provides a useful starting point for formulating propositions about SAYE plans because it deals with savings decisions in general and decisions to acquire employer stock in particular. This literature has consistently identified a set of individual factors that account for both the participation decision and, once this decision has been made, the contribution level decision. In this section we extrapolate the main findings from this literature to generate research questions.

This literature shows that income is a powerful determinant of employee savings decisions and contribution levels (Huberman et al. 2003; Kusko et al. 1998; Degeorge et al. 2004; Munnell et al. 2000; Andrews 1992). Contribution levels and rates (the fraction of income contributed to the plan) also rise with

income (Bassett et al. 1998; Huberman et al. 2003). Typically, four explanations for the income effect are proposed: liquidity constraints are inversely related to income; marginal tax rates generate greater benefits for higher earners; lower earners can rely more on social security for pension benefits; lower earners are likely to be less educated and thus face greater “set-up” and transaction costs in deciding whether to join (Bassett et al. 1998; Huberman et al. 2003). On this basis, I predict that income will be a powerful determinant of participation in and contributions to SAYE plans.

Age is also important, though the effects are less straightforward than those of income (Kusko et al. 1998; Huberman et al. 2003; Munnell et al. 2000; Andrews 1992). Explanations focus on time horizons and the value of human capital. Investors with longer time horizons, themselves a function of age, seem likely to invest a larger proportion of wealth in stocks, all things being equal (Agnew et al. 1999; Bertaut and Starr-McCluer 2000). But as retirement approaches, time horizons are truncated, leading to a preference for current consumption and liquidity. At the same time, the value of future human capital falls, implying that an optimal investment choice will be to move out of riskier financial assets (Agnew et al. 2003). Thus, the age is likely to have a hump-shaped effect.

Predictions for gender effects are mixed. Women tend to exhibit stronger saving preferences, possibly because of higher life expectancy. Participation rates and contribution levels in 401(k) plans are higher among women (Huberman et al. 2003), with the gender gap greatest for lower-income employees. However, women seem to be more conservative investors than men (Barber and Odean 2001) and are less likely to subscribe to equities in 401(k) plans (Agnew et al. 2003). Similarly, DeGeorge et al. (2004) find that women are more likely to participate in an employee share purchase plan but contribute less.

Several studies have investigated the role of job tenure in explaining participation and contribution rates but with divergent theoretical predictions. One argument is that tenure and participation/contributions to employee stock will be inversely related: investments in firm-specific human capital, proxied by tenure, should be countered by diversified investments rather than further concentration in employer stock. An alternative view is that human capital risk declines with tenure because of greater job security. Thus, an optimal portfolio balances secure human capital with riskier investment assets, such as employer stock (Agnew et al. 2003). Overall, the evidence indicates a positive relationship between participation and contribution in 401(k) plans and tenure (Andrews 1992; Bassett et al. 1998; Madrian and Shea 2001). As for stock purchase plans, DeGeorge et al. (2004) find that participation rates are

positively affected by tenure (though the effect is small) while contribution levels are negatively related.

Employee attitudes and preferences may also affect employee participation in and contributions to stock plans, though most of the literature has been unable to explore this possibility. For instance, risk preferences seem likely to impact on stock plan behavior (DeGeorge et al. 2004). Where a savings opportunity is stock-based, risk-averse individuals might be less likely to participate and contribute. Those studies that have incorporated risk aversion have tended to use proxies for risk rather than more direct measures of preferences: DeGeorge et al. (2004), for instance, use occupational levels on the (questionable) assumption that employees in higher occupational levels will be less risk averse.

Employee participation and contributions could also be influenced by commitment to the firm (Mitchell and Utkus 2002). More committed employees might express their commitment through a higher propensity to become involved in stock plans (Dewe et al. 1988). Certainly, there is evidence that organizational commitment is a powerful predictor of satisfaction with an employee stock ownership plan (ESOP) (Klein and Hall 1988). However, the evidence on the role of commitment in influencing voluntary participation in subscription-based share plans is not supportive: Dewe et al. find that workers who feel a strong sense of commitment to the firm are no more likely to want to participate than those who do not (1988: 19). There is also a possibility that less committed employees may be more likely to participate and to contribute more. Culpepper et al. 2004 find that the financial value of an ESOP investment is negatively related to continuance of commitment, suggesting that a substantial ESOP investment can give employees greater capability to leave their employment. Their research is concerned with ESOPs, but similar processes could be at work in share subscription plans: those employees seeking to leave their employment may be more likely to contribute so as to build up a “nest egg.”

Opinions about the stock plan itself may be a powerful influence on the decision to contribute. The employee ownership literature contends that employee-owners seek more control of decision making, and there is some evidence that satisfaction with employee ownership is greatest where greater control is secured (Klein and Hall 1988). Klein (1987) has called this—perhaps confusingly in the present context—an “instrumental orientation.” However, others have argued that a financial orientation tends to be strongest: employees seek personal profit rather than control from ownership (French 1987). The literature to date has not assessed the role of these possible orientations in determining employee decisions to participate in subscription-based stock plans.

A related explanation for employee subscriptions to employer stock has focused on familiarity (Huberman 2001). The issue at stake here is why employees violate sound investment principles by investing in employer stock, often to excessive levels. Huberman argues that people like to invest in what is familiar to them. On this basis, it might be anticipated that tenure will influence the decision to participate, on the basis that greater familiarity with stock plans will derive from duration of employment. Further, contribution levels may be influenced by the length of time employees have participated in stock plans. The more familiar they are with the plan, the more they subscribe.

To summarize, several predictions are made about the influences on decisions concerning participation in and contribution to SAYE plans: One, income will be a powerful determinant of participation and contributions. Two, age is likely to influence both participation and contributions, though the magnitude of these effects may decline beyond a certain age point. Gender is expected to have mixed effects: women are predicted to be more likely to participate but to contribute less (conditional on participation). Three, employee attitudes and orientations will influence participation and contributions. Employee commitment to the firm and risk preferences are predicted to positively influence participation and contributions. It is also predicted that control over and financial orientation to share plans will have a positive impact on participation and contribution levels. Four, familiarity with stock plans, as expressed by tenure, will influence participation. It will also influence contribution levels, as expressed by the duration of participation in the plan.

The Empirical Study

Data were collected from 2,600 employees in three large U.K. companies with Save As You Earn plans in 1999. Company A is in banking and finance, Company B is a food manufacturer, and Company C is in leisure and brewing. All three companies are long-established, listed firms with an established tradition of employee stock ownership plans. Plan design is similar among the three companies, primarily because the Inland Revenue rules governing the plan are fairly prescriptive. For instance, the same discount (20 percent) on market price was offered. Also, all three companies had experienced rising stock prices over the previous five years, with similar levels of volatility. These similarities between the participating companies have advantages and disadvantages. The main disadvantage is that we cannot systematically explore the role of plan design and company-specific features in accounting for variations in participation and contributions. The advantage is that the research design controls to some extent for company specific factors. This is important given the small number of companies in the study.

The survey collected data on all aspects of employee participation in SAYE

and other stock plans. Questionnaires were passed to share plan administrators in each of the three companies, with the request that line managers distribute them to their employees on a random basis. The survey responses indicate that participation rates in SAYE plans are high: two of the companies record take-up rates of 70 percent or more.

The SAYE plan is a combined savings and stock option plan. Participating employees decide on a level of option awards for three or five (extendable to seven) years hence. Firms may offer up to a 20 percent discount on the market price at grant, and this is free of income tax. Employees take out a SAYE tax-advantageous savings plan, with regular payments up to a maximum of £3,000 per annum. At the end of the savings period they can either take the tax-free lump sum or use it to exercise their SAYE options. Other data from this survey indicates that about 55 percent exercise and hold, with the remainder choosing to exercise and sell. Few just take the money from the savings contract. Those retaining shares are liable to capital gains tax when shares are sold, though the taper relief introduced since this study was conducted means that the tax liability declines to zero if shares are retained for four years or more.

Data and Variables

Two dependent variables are created for the analysis.

Participation. This is a 0,1 variable recording whether respondents are currently participating in the SAYE options plan by saving a regular amount each week or month.

Contribution. This is a continuous measure of the amount SAYE participants are saving each year. Nonparticipants are excluded, so this variable is always greater than zero. It is presented in log form in the regressions.

The independent variables are as follows:

Age. Respondents were asked their age, using a five-category ordinal question. This has been converted into four dummy variables for each of the following age categories: 26–34, 35–44, 45–54, and 55 and older, with 16–25 as the reference group.

Salary. An eight-category question on respondents' income was converted into three dummies. These are annual salary categories of £10,000–19,999, £20,000–29,999, £30,000 and above, with £1–9,999 as the reference group.

Sex. This is a 0,1 dummy (female is 1).

Tenure. This measures the length of employment in years.

Commitment. Employees were asked the six positively worded five-point items from the British Organizational Commitment scale (Cook and Wall 1980). Exploratory factor analysis was used to determine the underlying factors, bearing in mind that three factors typically arise in research into organizational commitment. In this case all items loaded onto one factor. The items were therefore combined together into a single scale with lower scores indicating higher levels of commitment ($\text{Alpha} = 0.83$).

Risk Preferences. A single item was used to measure employees' orientations toward risk. Respondents were asked to respond to the statement "Share ownership is only worthwhile if there is no risk involved," using a five-point scale, where 1 = strongly agree and 5 = strongly disagree.

Control. This is a single-item, five-point scale based on a question as to whether stock plans are a good way of securing greater control of the company.

Financial. This assesses financial orientations to the stock plan. Respondents were asked to what extent they see the stock plan as delivering financial benefits to workers. It is a five-point, single-item scale.

SAYE Duration. This is an ordered category variable (1–5) recording the length of time the respondent has participated in the SAYE plan. This proxies for familiarity when I analyze contributions (see table 1).

TABLE 1
List of Variables

	N	Minimum	Maximum	Mean	Standard Deviation
Participation in SAYE	2,631	0	1	0.85	0.35
Contribution	2,191	52	3,000	1,361.79	961.40
(Natural log)		3.95	8.01	6.90	0.87
Salary: 10 to 19.9k	2,638	0	1	0.40	0.49
Salary: 20 to 29.9k	2,638	0	1	0.27	0.44
Salary: 30k+	2,638	0	1	0.15	0.30
Age: 25–34	2,638	0	1	0.33	0.47
Age: 35–44	2,638	0	1	0.34	0.47
Age: 45–54	2,638	0	1	0.21	0.40
Age: 55+	2,638	0	1	0.05	0.21
Sex	2,600	0	1	0.39	0.49
Tenure	2,638	0	53	11.19	8.44
Risk Preference	2,577	1	5	3.44	0.94
Commitment	2,554	1	5	2.31	0.67
SAYE Duration	2,354	1	5	3.40	1.34
Control	2,580	1	5	1.58	0.92
Financial	2,594	1	5	2.93	0.75

Results

Participation

The first analysis assesses the determinants of participation in the SAYE plan. Four models are estimated, as seen in table 2. The first includes just age, sex, and income, without company dummies. The second adds company dummies. The third model adds tenure, while the fourth includes employee commitment to the firm, risk preferences, and orientation to share plans. The probit models show marginal probabilities (when other variables are held at their means) rather than coefficients because the former are easier to interpret.

The first model (as do subsequent models) shows that salary is a powerful determinant of participation. Marginal effects rise with each income category and are substantial for salaries of £20,000 or more. These results are robust to the insertion of company dummies and other variables. Age is also important: the results indicate a hump-shaped effect, with the probability of participating in SAYE plans rising with age up until age fifty-five. Beyond this age the probability of participating in SAYE is not much higher than the under twenty-five group, and the results are not significant at 0.05. In the first model sex is significantly negative, indicating that women are more likely to subscribe. However, this result is sensitive to the inclusion of company dummies. The dummy for the brewing company is significant: many of this company's employees are female. Model 3 also includes tenure. In this model, tenure has a tiny marginal effect (too small to be recorded at two decimal places), though this effect is significant at 0.01. The age effects are slightly smaller in this model than in the previous model, suggesting some of these effects are now embodied in tenure. Age and tenure are highly correlated in the data ($r = 0.5706$), as all three organizations provide career employment (mean tenure = eleven years; median tenure = nine years). Nevertheless, the overall conclusion is that age is a more significant determinant of participation than tenure. This also suggests that familiarity is not a significant influence on the decision to participate, once other factors are controlled for.

Model 4 adds the various attitudinal variables. Here the results are mixed. Surprisingly, participation in SAYE plans is associated with *lower* rather than higher levels of commitment to the organization. It is difficult to explain why this is so. At the least it implies that the decision to participate in SAYE is in some sense separate from attitudes toward the firm. According to this interpretation, SAYE would appear to be perceived as a savings opportunity made available by the firm but not linked to the firm in any close way. This implies a strongly instrumental approach toward SAYE participation.

We also test the role of views about share plans in general. As can be seen in Model 4, a control orientation has no effect at all on the decision to participate.

TABLE 2
Determinants of Participation in the Employer's SAYE Plan

Variables	<i>Probit Marginal Effects</i>			
	Marginal Effect (Standard Error) Model 1	Marginal Effect (Standard Error) Model 2	Marginal Effect (Standard Error) Model 3	Marginal Effects (Standard Error) Model 4)
Age: 26–34	0.08 ^{***} (0.02)	0.08 ^{***} (0.02)	0.07 ^{***} (0.02)	0.06 ^{**} (0.02)
Age: 35–44	0.10 ^{***} (0.02)	0.10 ^{***} (0.02)	0.09 ^{***} (0.02)	0.07 ^{***} (0.02)
Age: 45–54	0.13 ^{***} (0.02)	0.13 ^{***} (0.02)	0.11 ^{***} (0.02)	0.10 ^{***} (0.02)
Age: 55+	0.03 (0.03)	0.04 (0.03)	0.00 (0.04)	–0.01 (0.04)
Salary: 10–19.9 k	0.07 ^{***} (0.02)	0.07 ^{***} (0.02)	0.07 ^{***} (0.02)	0.06 ^{***} (0.02)
Salary: 20–29.9k	0.12 ^{***} (0.02)	0.12 ^{***} (0.02)	0.11 ^{***} (0.02)	0.11 ^{***} (0.02)
Salary: 30k+	0.13 ^{***} (0.01)	0.13 ^{***} (0.01)	0.13 ^{***} (0.01)	0.12 ^{***} (0.01)
Sex	–0.04 ^{**} (0.02)	–0.02 (0.02)	–0.02 (0.02)	–0.02 (0.02)
Tenure	–	–	0.00 ^{***} (0.00)	0.00 ^{***} (0.00)
Commitment	–	–	–	–0.03 ^{**} (0.01)
Risk Preferences	–	–		0.02 ^{***} (0.00)
Control				0.00 (0.00)
Financial				0.03 ^{***} (0.01)
Company Dummy: Banking and Finance	–	0.01 (0.02)	0.03 (0.02)	0.03 (0.02)
Company Dummy: Leisure and Brewing	–	0.05 ^{**} (0.02)	0.06 ^{***} (0.02)	0.06 ^{**} (0.02)
N	2600	2600	2485	2485
Log Likelihood	–1,037.52	–1,034.08	–1,028.94	–963.19
Pseudo R ²	0.055	0.058	0.062	0.070

°° = significant at 0.01

°°° = significant at 0.001

Caution must be exercised in interpreting this result: it does not necessarily mean that share plan participants are uninterested in control but merely that participants are not more likely than nonparticipants to view SAYE plans as a means of gaining greater control. This is well-founded because research evidence indicates that share plans do not give significant governance rights—de jure or de facto—to employees (Pendleton 1997). By contrast, the result for a financial orientation to share plans is positive and significant at 1 percent. The probability of joining SAYE is greater among those who view share plans as a good way of saving for the future. This reinforces the interpretation that participation in SAYE plans is influenced by instrumental reasoning. Finally, those with positive risk preferences have a slightly higher probability of participating in SAYE.

Contribution Rates

The next stage of the analysis is an investigation of the determinants of contribution levels (measured in log form). Five models are presented in table 3. The first is a basic model comprising measures of income, age, sex, and company dummies. The second includes the tenure variable, while the third further adds the measure for commitment to the organization. The fourth model also includes the measures for risk preferences and orientations toward share ownership plans. The final model includes the measure for duration of participation in SAYE and is designed to test the proposition that familiarity influences contribution levels.

The results for the determinants of contributions are much as expected. In Model 1 salary is clearly the strongest determinant of contribution levels, with the highest beta attached to the highest salary category. Contribution levels also rise with age up until the fifty-five and over age group. Sex does not have significant effects. These results are very similar to the structure of results for participation in SAYE. When tenure is added, the age effects are attenuated somewhat though they remain strong. However, tenure has significant effects on contributions independently of age. This finding is consistent through all but the final specification and appears to indicate a familiarity effect (see below). In Model 3 commitment is added and is significant at 95 percent in the direction predicted—that is, more committed employees tend to contribute more. However, when the measure for risk preferences is inserted (Model 4), its effect is halved and becomes insignificant. Risk preference is a sizeable and significant influence on contribution levels. In Model 4 orientations toward share plans are included: the view that share plans enable greater employee control is negative and insignificant, while the view that share plans provide a good ways of securing a financial return is significantly related to contribution levels in the direction expected.

TABLE 3
Determinants of Contributions to SAYE Plans

<i>OLS</i>					
Variables	Beta (<i>t</i>) Model 1	Beta (<i>t</i>) Model 2	Beta (<i>t</i>) Model 3	Beta (<i>t</i>) Model 4	Beta (<i>t</i>) Model 5
Age: 26–34	0.13 ^{°°} (3.18)	0.11 ^{°°} (2.62)	0.12 ^{°°} (2.86)	0.10 [°] (2.40)	0.01 (0.31)
Age 35–44	0.20 ^{°°°} (4.91)	0.16 ^{°°°} (3.72)	0.17 ^{°°°} (3.95)	0.16 ^{°°°} (3.68)	0.05 (1.29)
Age: 45–54	0.27 (7.11) ^{°°°}	0.20 ^{°°°} (4.86)	0.20 ^{°°°} (4.84)	0.18 ^{°°°} (4.47)	0.08 [°] (2.18)
Age: 55+	0.12 ^{°°°} (4.72)	0.08 ^{°°} (2.84)	0.08 ^{°°} (2.90)	0.07 [°] (2.54)	0.03 (1.20)
Salary: 10–19.9k	0.14 ^{°°°} (4.62)	0.13 ^{°°°} (4.46)	0.12 ^{°°°} (4.08)	0.12 ^{°°} (3.81)	0.10 ^{°°°} (3.41)
Salary: 20–29.9k	0.35 ^{°°°} (11.87)	0.34 ^{°°°} (11.34)	0.33 ^{°°°} (10.66)	0.31 ^{°°°} (9.84)	0.28 ^{°°°} (9.60)
Salary: 30k+	0.44 ^{°°°} (15.53)	0.42 ^{°°°} (14.97)	0.41 ^{°°°} (13.90)	0.39 ^{°°°} (12.98)	0.36 ^{°°°} (12.55)
Sex	0.03 (1.26)	0.03 (1.21)	0.03 (1.12)	0.02 (0.75)	0.04 (1.85)
Tenure	–	0.13 ^{°°°} (5.25)	0.13 ^{°°°} (5.18)	0.13 ^{°°°} (5.20)	–0.05 [°] (–2.05)
Commitment	–	–	0.04 [°] (2.07)	0.02 (1.04)	0.02 (0.93)
Risk Preferences	–	–	–	0.10 ^{°°°} (4.73)	0.07 ^{°°} (3.57)
Control	–	–	–	–0.01 (–0.47)	– (0.35)
Financial	–	–	–	0.08 ^{°°°} (4.16)	– (3.31)
SAYE Duration	–	–	–	–	0.38 ^{°°°} (16.80)
Company Dummy: Banking and Finance	–0.04 (–1.14)	0.01 (0.24)	–0.01 (–0.16)	–0.01 (–0.22)	0.02 (0.79)
Company Dummy: Leisure and Brewing	0.01 (0.46)	0.06 (1.79)	0.05 (1.45)	0.03 (0.94)	0.06 [°] (2.08)
<i>N</i>	2160	2160	2094	2071	2067
<i>F</i>	54.11 ^{°°°}	52.31 ^{°°°}	46.97 ^{°°°}	40.32 ^{°°°}	60.51 ^{°°°}
Adjusted R ²	0.20	0.21	0.21	0.22	0.32

[°] = significant at 0.05

^{°°} = significant at 0.01

^{°°°} = significant at 0.001

Finally, Model 5 assesses the effect of familiarity on SAYE contributions. The measure for duration of participation in SAYE plans is strongly positive (significant at 0.001), and the model fit improves from 0.22 to 0.32. The finding that length of duration in SAYE plans is related to contribution levels suggests that familiarity is an important influence, given that the influence of income (also expected to rise with longevity of employment) continues to be strong. It is notable that age effects are much reduced and that tenure becomes negative. In other words, it appears not to be age or tenure per se that influence contribution levels but increasing familiarity with SAYE as employees grow older and accrue tenure.

Summary and Conclusions

Several observations can be made in relation to the questions raised at the outset. First, income is clearly an important influence on participation and contributions, and this finding is consistent with both the 401(k) and broader savings literature. Second, age is also important, though to a lesser extent. Third, there is some evidence that views and attitudes can influence participation and contribution levels. The most important views are those associated with risk preferences and a belief that share plans are a good way of achieving financial returns. The influence of commitment to the organization is the opposite of what was expected for participation but an insignificant determinant of contribution levels. These findings are consistent with those of Dewe et al. (1988) in that beliefs about the plan are more important than attitudes toward the firm. However, the overall contribution of these influences should not be overstated: model fit improves only slightly with the addition of these variables. Fourth, familiarity appears to influence participation levels and has a large impact on the size of contributions, conditional on participation.

The final question is whether the factors influencing participation are similar to those influencing contribution levels. On the whole the answer is yes, since most of the variables share similar signs and significance levels between the two though with some qualifications. However, differences in the company dummies indicate that company actions and characteristics can influence participation levels but not, on the whole, contribution levels. In summary, these results confirm earlier findings that emphasise the role of income and age. The novelty of the study is that the role of attitudes can be assessed but the results indicate that these are of limited importance.

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