What Affects the Choice of Retirement Plans among Faculty? Evidence from the University System of Georgia

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Introduction

Academics have long been interested in the level and manner by which faculty are compensated. Compensation is a tool used by all organizations to attract and retain employees. This is particularly important for colleges and universities because of the labor-intensiveness of the field. Compensation is important to individuals when deciding whether to work in higher education or in other labor markets, where to work within the academy, and how long to work before retiring.

Most of the attention to compensation issues in academe has been given to faculty salaries. This is largely the result of Equal Pay legislation in the 1960s and 1970s that required colleges to ensure that they were treating workers fairly in terms of salaries. A number of studies followed that examined whether there was evidence of pay disparities for faculty by gender (e.g., Barbezat, 2002; Toutkoushian & Conley, 2005). In addition to salary, however, academic employees receive in-kind compensation such as medical benefits, and deferred compensation in the form of retirement benefits. These non-salary components of compensation can be substantial, totaling half or more of the total financial benefits that a person receives during their lifetime. Non-salary benefits can also influence the labor market decisions of faculty.

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Retirement benefits are an important, but relatively understudied, aspect of compensation for faculty in postsecondary education. Planning for retirement can be a challenging exercise (Costrell & Podgursky, 2009; Keim & Mitchell, 2015; Lushak & Gunderson, 2000). An employee does not know at the time of hire how long he or she will live in retirement, nor how much money they will need to ensure a financially comfortable retirement. In addition, the retirement plans themselves can be confusing due to the many details involved in how they determine a faculty member's retirement funds.

Retirement plans are generally classified as either a defined benefit (DB) plan or a defined contribution (DC) plan. In a DB plan, the employee's income in retirement is set by a formula, and the employee receives this payment every year in retirement. In contrast, the retirement benefit in a DC plan is determined by the contributions made by an employee and employer into a fund and the annual market returns on these investments. Over time, many providers have moved away from DB plans to reduce their pension liability and give employees retirement options that are more portable (Conley, 2008; Dulebohn & Murray, 2007; Goldhaber & Grout, 2016; Gustman & Steinmeier, 1992).

Although many firms in the private sector offer a single plan for their employees, roughly half of public colleges and universities give their employees a choice between a DB and DC plan (Brown & Weisbenner, 2014; Clark, Hanson, & Mitchell, 2016). The choice is complicated because these types of plans are different in terms of the risk to the employee, the portability of benefits, and the total size of the expected financial payout during retirement (Clark & McDermed, 1988; Clark & Pitts, 1999; Chingos & West, 2015). In addition, DB and DC plans may differ in the number of years that an employee must work to receive full retirement benefits (Clark & McDermed, 1988). The vesting rule can impact the risk associated with a retirement plan and its expected benefits. Chingos and West (2015), for example, show that employees who leave prior to vesting would gain more from DC plans than DB plans. And there are significant variations in the details of DC plans and DB plans offered by providers (Toutkoushian, Bathon, & McCarthy, 2011).

Theory and prior literature suggest that there are reasons to believe that different types of professors may favor one plan over another. Faculty

who are relatively healthy and feel that they will live a long time may prefer a DB plan because it lowers the risk of not being able to fully fund their retirement. Others who are more financially savvy may prefer DC plans due to the opportunity to actively manage their investments. Likewise, younger professors who are more mobile may prefer a DC plan where retirement benefits tend to be more portable and have shorter vesting requirements. As a result, decisions about retirement plans could be correlated with factors such as gender, age, and type of position.

In this study, I focus on how faculty make the choice between a DB and DC plan. I begin by reviewing the types of retirement plans available, and the main studies that have been conducted where employees were given a choice between types of plans. I then turn to an analysis of plan choice for faculty in the public university system in the State of Georgia. The University System of Georgia (USG) requires faculty to select either a DB or a DC plan at the time of hire. I rely on data for faculty who were employed at USG institutions in 2015-16 and hired within the previous six years to examine how selected personal and institutional characteristics were associated with the choice they made between these two options.

Understanding why some faculty choose DB coverage while others prefer DC plans is important for several reasons. The two types of plans differ considerably in their costs and benefits for those who are mobile and more likely to consider job changes in the future. For example, because DB benefits are frozen at the time someone leaves their plan's sponsoring agency, a DB plan may be less lucrative for faculty who decide to switch institutions prior to retirement. Retirement plans may also vary with regard to their vesting requirements. Faculty who are enrolled in a retirement plan with a vesting requirement have a strong financial incentive to stay with the organization at least until vesting has been achieved. DB and DC plans also differ with regard to the risks that are placed on employees and the level of financial knowledge that they need to manage their retirement income. Finally, the choice between DB and DC plans is important to sponsoring agencies because, in recent years, many states and sponsors with defined benefit plans for college employees have introduced defined contribution plans as an option or a replacement for their DB plans.

Literature Review

Overview of Retirement Plans

Employers can offer workers deferred compensation in the form of either a defined benefit plan, a defined contribution plan or some combination thereof. From an economist's perspective, each type of retirement plan for college employees has costs and benefits associated with it. On the cost side, faculty and staff are usually required to contribute a certain amount from each paycheck to participate in the plan. The benefit refers to the amount of money that the employee has at his or her disposal during their years in retirement.

To examine the financial valuations of these retirement options, consider the case of a simplified model where a faculty member is hired at time t=1 and works at their college or university until time t=W. The professor then retires and lives in retirement until time t=T. In a defined contribution plan, the level of retirement benefits are determined by the contributions of the employee and/or employer over time, and the financial returns (or losses) which in turn will depend on how contributions are invested. The total retirement benefits may be expressed as follows:

$$(1) \qquad Benefit(DC) = \sum_{t=1}^{W} \sum_{j=1}^{J} (C_t + M_t) * a_j * \left(1 + r_j\right)^{W-t}$$

where C_t = employee contribution to the DC plan in year t, M_t = employer contribution to the DC plan for the employee in year t, a_j = percentage of annual contribution invested in the j-th financial asset (e.g., mutual fund, annuity) out of J options, and r_j = percentage gain or loss in the next year on the j-th asset in year t.

From equation (1), the financial benefits from the DC plan depend on the size of employee and employer contributions, how the contributions are invested, and the length of time that the investments are compounded. The ultimate retirement benefit in a DC plan is not known to the faculty member at the time of hire. On the cost side, although college employees are usually required to make financial contributions to the DC plan, these are best viewed as "investments" rather than "costs" because

employee contributions are returned to them with interest upon retirement.

In a defined benefit retirement plan, a person's income in retirement is determined by a formula set by the plan sponsor, which in higher education settings is usually the institution, state, or university system. The total retirement benefit depends on the annual payout and the length of time that payouts are made. Participants in a defined benefit plan will know their annual income upon retirement, but will not know the total lifetime benefit. The total benefit from the defined benefit plan (in present value) can be written as follows:

$$(2) \qquad Benefit(DB) = \sum_{t=W+1}^{t=T} Y * E * m \,/\, (1+i)^{t-W}$$

where Y = final average salary used in the benefit calculations, E = years of service credit, m = annual multiplier set by the sponsor, and i = annual rate of inflation. The final average salary is usually set equal to the average of salaries received in the last years of employment (generally 2 to 5 years). The years of service credit represent the amount of time that a person has worked for their plan's sponsor. The multiplier is the percentage of salary received in retirement for each year of service credit (generally ranging from 1.1% to 2.5% in education plans).

The total financial benefit in a defined benefit plan is affected by several factors. The first is the final average salary. DB plans should be more attractive to late-career employees since they tend to be in their peak earning years. Second, larger multipliers result in greater benefit payments. A third factor is that as years of service credit rise, so will the annual retirement payout. Fourth, because the payouts are made each year that a person is in retirement, those who live longer will receive greater lifetime benefits from the plan. With regard to costs, the contributions made by a college employee to take part in a DB plan are true costs in the sense that future benefits are not directly tied to how much the person pays into the plan, and they are not returned with interest upon retirement.

There are several complicating factors that can influence the total financial benefit from a defined benefit plan. An employer may place

restrictions on the size of annual payouts in a DB plan. One way to accomplish this is to limit the number of years of service credit that can be used to calculate benefits. Or, the employer may simply impose a rule that the annual payout in retirement cannot exceed a specified percentage of the employee's final average salary (such as 75% or 100%). Likewise, in states such as Colorado, Connecticut and Ohio, the employee cannot receive Social Security benefits if they also participate in the DB plan.

Finally, there are added challenges in choosing between a DB and DC plan for faculty who experience job changes before retirement. As previously noted, vesting rules may impose penalties on people who leave their job prior to becoming fully vested. The choice to leave a college or university may not be voluntary for assistant professors who are not granted tenure. In addition, except for possible cost-of-living adjustments the level of retirement income from a DB plan is effectively frozen at the time that a person leaves his or her employer. This is not the case for employees who are in a DC plan because these contributions can continue to grow (or fall) over time depending on how they are invested.

Theoretical Framework

Labor economists have devoted significant attention to competing wage differentials and the tradeoffs between salary and other forms of compensation (e.g., Ehrenberg & Smith, 2016). Theory suggests that employers should be concerned with total compensation as opposed to the salary-versus-benefit-distribution in terms of how much it costs to utilize a worker. However, the way in which workers are compensated can influence the type of people who are attracted to an organization and how long they stay. Non-salary benefits may be more important to workers with large families, health problems and those who are sole providers for their families. In contrast, younger and more mobile workers may be willing to forego some benefits in exchange for higher salaries.

This study draws on cost-benefit analysis to model the choice faculty and staff make with regard to their retirement benefit plan (Clark, Ghent, & McDermed, 2006; Goldhaber & Grout, 2016; McCarthy, 2003). According to this framework, an employee considers the total expected

benefits (*Benefit(P)*) and costs (*Costs(P)*) of the two types of retirement plans, and the risks associated with each retirement plan ($\pi(P)$), when evaluating options at their disposal. In simple terms, the utility of each type of plan to the employee is a function of the expected benefits and costs of each plan and the risk to the employee associated with each plan:

$$(3) \qquad U(P) = \mathrm{U}(\mathrm{E}(Benefit(P) - Cost(P)), \pi(P)), \ P = \mathrm{DB \text{ or } DC}$$

The plan ultimately preferred by the employee (R) is then the option with the highest expected utility. This may be expressed as a function of personal and work-related characteristics, as in:

$$(4) \qquad R = U(DC) - U(DB) = X\beta + \varepsilon$$

where $R = 1$ if prefer DC and 0 otherwise, and X = set of personal, occupational, employer, plan-specific, and other characteristics that are associated with this choice.

Although the expected utility and decision process shown in equations (3) and (4) are parsimonious, they are far from simple for most faculty and staff to calculate. Starting with the DC plan, employees do not know what the market returns will be on the various investment options at their disposal, nor the size of their future contributions. Similarly, employees in a DB plan do not know how long they will work at an institution, what their final average salary will be, nor how long they will need to draw retirement benefits. Accordingly, faculty and staff must form expectations of these quantities when making decisions about retirement benefits.

Risk, therefore, becomes an important factor to employees in assessing their retirement options (Clark & Pitts, 1999). Risk, in this context, comes in several different forms. The first is the uncertainty in the parameters as discussed above for each plan. When a faculty member estimates, for example, how long they believe they will live in retirement and what the market returns will be on different investments, they also have to take into account that their expectations may be incorrect. In particular, if the person overestimates the benefits from a plan, then he or she may not have sufficient income in retirement. Other sources of risk are more unique to each plan. In a DC plan, the risk for funding retirement is borne by the employee because once the retirement funds

are depleted, there are no future benefits. In contrast, the sponsor bears the risk in funding a DB plan because it is obligated to find the resources to pay employees for each year that they are in retirement. As discussed in the Introduction, this is a primary reason why many institutions and states are moving away from DB plans. In addition, under a DB plan, the annual payout is solely determined by the formula and thus there is no variability or risk in the size of future payouts. Although this protects employees in the event of a financial downturn that reduces the return on their investments, it also limits the gains they might realize when security markets are doing well. In contrast, employees in a DC plan can capture the higher returns in good years but take the chance of having lower returns in bad years.

Finally, risk enters into the retirement decision-making process through the vesting requirements imposed by providers. Some plans have no vesting requirements and thus the employee is entitled to the full dollar benefits once they are hired. At the other extreme, some retirement plans dictate that employees must work a specific number of years to receive the benefits, or else they forego some or all of the benefits. This adds to the risk of a plan because employees do not know at the time of hire how many years they will work for the plan's sponsoring agency.

Prior Studies

There have been a number of prior studies that have explored how employees make decisions about retirement and the role of benefits in these decisions (Chalmers, Johnson, & Reuter, 2008; Clark-Murphy & Gerrans, 2001; Conley, 2005; Costrell & McGee, 2010; Costrell & Podgursky, 2009; Dulebohn & Murray, 2007; Fields & Mitchell, 1984; Furgeson, Strauss, & Vogt, 2006; Ghent, Allen, & Clark, 2001; Gustman & Mitchell, 1992; Gustman, Mitchell, & Steinmeier, 1994; Gustman & Steinmeier, 1995; Pozzebon & Mitchell, 1989; Samwick, 1998; Yakoboski, & Conley, 2013). This segment of the literature focused on a range of issues, such as how retirement benefits influence job mobility and the timing of retirement.

Within this broader literature on retirement benefits, some researchers have specifically considered how workers choose among different types of retirement plans (Bodie, Marcus, & Merton, 1988; Brown & Weisbenner, 2009; 2014; Childs, Fore, Ott, & Lilly, 2002; Clark et al.,

2016; Dulebohn, Murray, & Sun, 2000; Goldhaber & Grout, 2016; Papke, 2004; Yang, 2005). Comparing studies on this topic is challenging in part due to the range of different retirement plans offered across the institutions being studied. Brown and Weisbenner (2009), for example, examined state employees in Illinois who could select between a DB plan, DC plan and a hybrid DB plan. In contrast, Goldhaber and Grout (2013) studied a system where employees could choose between a DB plan and a hybrid DB/DC plan, and several studies by Clark focused on the North Carolina system where employees had the option of a DB versus DC plan (Clark, 1999; Clark & Pitts, 1999; Clark et al., 2006). In addition, the specific parameters in the DB, DC and hybrid plans varied across these studies, making it hard to draw definitive conclusions from their collective results.

The majority of these studies found that although there were distinct preferences for DB plans among certain types of employees, the results are also fairly mixed across studies. For example, while some researchers found that DB plans were more popular among females than males (Brown & Weisbenner, 2014; Clark et al., 2006), others concluded that males prefer DB plans (Chingos & West, 2015) or that there were no significant gender differences in plan preference (Brown & Weisbenner, 2009; Clark & Pitts, 1999). One of the more consistent findings in the literature is that employees with higher earnings were more likely to enroll in a DC plan (Brown & Weisbenner, 2009; Clark & Pitts, 1999; Clark et al., 2016; Yang, 2005), though Clark et al. (2006) found no relationship between income and preference for the DB plan in North Carolina. Another factor of interest to labor economists and policymakers is the role of age in retirement planning (Berberet, Bland, Brown & Risbey, 2005; Burkhauser, 1979; Sawchuk, 2009). DB plans should be less attractive to young workers because they tend to be more mobile at this stage of life, and less attractive to older workers because they do not have as much time to accumulate years of service credit.

Finally, studies within this topic vary considerably in terms of the groups of employees studied. A number of studies addressed the retirement plan choices for K-12 teachers (Chingos & West, 2015; Goldhaber & Grout, 2016), while other studies focused on higher education workers (Brown & Weisbenner, 2009; Clark, 1999; Clark et al., 2006; Clark & Pitts, 1999; Dulebohn & Murray, 2007) or broad groups of public employees. Within the few studies on higher education, they also differed in whether

they examined all benefits-eligible workers or limited their analysis to only faculty.

Data and Methodology

Data Description

The data used in this study were obtained from the Human Resources data system for the University System of Georgia (USG). It includes information on faculty who worked at one of the 30 USG institutions in the 2015-16 academic year. At the time of hire, USG employees who are in positions that receive benefits must choose between a defined benefit plan known as the Teachers Retirement System (TRS) and a defined contribution plan known as the Optional Retirement Plan (ORP). Both tenure-eligible faculty and other employees in benefits-eligible positions at USG were given this option. Table 1 provides an overview of the two USG retirement plans. An employee was required to contribute six percent of his or her salary to take part in the ORP, and this was supplemented by an institution contribution of 9.24 percent. Therefore, the employee had 15.24 percent of salary in this year to invest in a menu of options provided by TIAA ranging from mutual funds to fixed rate annuities. For TRS, the employee also must contribute six percent of his or her salary to participate in the plan. Upon retirement, the employee receives 2% of their final average salary (based on last two years of employment) for each year of service credit at USG. There is a 40-year cap on the years of service credit, which effectively limits a retiree's annual payout to a maximum of 80% of his or her final average salary. Unlike workers in some public sector plans, employees in the TRS are

Table 1: Overview of USG Retirement Plans in 2015

Plan Attribute	Teachers Retirement System (TRS)	Optional Retirement Plan (ORP)
Type of plan	Defined benefit	Defined contribution
Benefit at retirement	Based on formula: Final salary x yrs service x 2%	Based on contributions and return on investments
Vesting	10 years of service credit	Immediate
Contribution rates	Employee: 6.00% Employer: 14.27%	Employee: 6.00% Employer: 9.24%
Payout for early USG departure (< 10 yrs)	Accumulated employee contributions plus interest only	All employee and employer contributions
Risk to employer	High, must ensure adequate funding for future payouts	No risk after employer contributions are made

Notes: Information obtained from Human Resources, University of Georgia. Description of plans is effective July 1, 2015.

covered by Social Security and also receive those benefits upon retirement. An important difference between the two USG plans is in their vesting requirements. Employees who opt for TRS must accrue at least 10 years of service credit to receive their complete retirement benefits. In contrast, both the employee and employer contributions to retirement benefits in the ORP are fully vested at the time of hire. More details on the TRS plan for USG can be found at http://trsga.com.

The USG dataset included information on the year of hire; personal characteristics including gender, race, date of birth, and citizenship; work-related characteristics such as academic position and institution employed; and, most importantly for the purpose of this study, the retirement plan in which they were enrolled. USG faculty were first allowed to choose between these plans in 1991. To minimize the possible effects of faculty attrition on the results, the sample was limited to faculty who were hired in the last six years (2009-15). The final dataset consisted of 3,853 tenure-eligible faculty.

The dependent variable in this study is whether a faculty member opted to enroll in the ORP (DC) plan. All USG employees in benefits-eligible positions were required to enroll in either the TRS or ORP plan, and had 60 days in which to make their decision. An employee could not change his or her retirement plan after the 60-day window passed. Those who did not make a deliberate decision within the 60-day window were enrolled in the TRS plan by default. The USG personnel data could not separate those who made an active decision to select TRS from those who were enrolled in TRS by default. Brown and Weisbenner (2009) note that the default option may be distinct from a deliberate choice of retirement plan, and that many employees enroll in a plan by default (also see Clark et al., 2016). In contrast, Clark et al. (2006) did not have data on which employees were enrolled due to default, and argued that there were relatively few defaulters in their study. It is possible that some faculty members who were placed into TRS by default decided to not make a decision because they wanted to be enrolled in TRS and would be without taking action on their part.

A number of independent variables were created that theory and/or prior research suggested could be associated with someone's choice of retirement plan. These included controls for the faculty member's gender (1 if male), race/ethnicity (five categories), age at time of hire, marital status as of Fall 2015, and whether the person was a U.S. citizen.

Selected models also included control variables for the institution where the faculty member was employed (30 variables) to account for possible differences across institutions. Likewise, dummy variables were added for year of hire to determine whether the preference for ORP changed over time after taking into account other variables. Because the USG data did not include salary at time of hire, this variable was estimated by deflating each faculty member's salary in Fall 2015 by their years of employment assuming that salaries grew by an average of three percent per year, and then converting to real dollars using the Consumer Price Index (base year = 2015). The regression models also included controls for each person's academic rank at time of hire, and whether the individual held managerial responsibilities in addition to their regular faculty position.

Table 2 presents descriptive statistics for the variables used in the regression models. Overall, about 37% of faculty at USG in Fall 2015 were enrolled in the TRS plan. Faculty were most frequently hired between the ages of 25-34 and 35-44. Interestingly, close to 20% of faculty were non-U.S. citizens, which could have a bearing on their understanding of and interest in the specific retirement plan options at USG. Likewise, more than three-quarters of faculty were originally hired at the assistant professor rank.

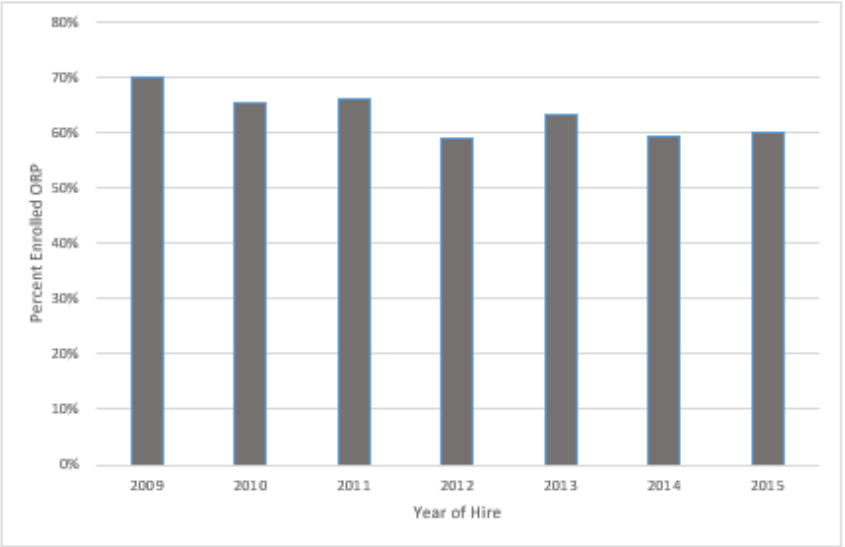
Table 2: Descriptive Statistics for USG–Tenure-Eligible Faculty

Variable	Mean	Std Dev	Minimum	Maximum
Enrolled in TRS	0.373	0.484	0	1
Enrolled in ORP	0.627	0.484	0	1
Male	0.569	0.495	0	1
White	0.685	0.464	0	1
Black	0.098	0.298	0	1
Asian	0.164	0.370	0	1
Hispanic	0.042	0.200	0	1
Other Race	0.010	0.101	0	1
U.S. Citizen	0.793	0.405	0	1
Age Hire: 25-34	0.348	0.476	0	1
Age Hire: 35-44	0.353	0.478	0	1
Age Hire: 45-54	0.181	0.385	0	1
Age Hire: 55-64	0.105	0.307	0	1
Age Hire: 65+	0.013	0.113	0	1
Married	0.653	0.476	0	1
Single	0.301	0.459	0	1
Other Marital Status	0.046	0.210	0	1
Management Position	0.083	0.275	0	1
Starting Salary (Log)	11.220	0.473	9.728	13.358
Hired Assistant Professor	0.774	0.419	0	1
Hired Associate Professor	0.116	0.320	0	1
Hired Full Professor	0.110	0.313	0	1
Hired 2009	0.101	0.302	0	1
Hired 2010	0.105	0.306	0	1
Hired 2011	0.148	0.355	0	1
Hired 2012	0.153	0.360	0	1
Hired 2013	0.165	0.371	0	1
Hired 2014	0.164	0.371	0	1
Hired 2015	0.164	0.370	0	1

Notes: Data include all tenure-eligible faculty employed at a University System of Georgia (USG) institution in Fall 2015 and hired in years 2009 through 2015 at the assistant, associate or full professor ranks (n=3,853). Data are not shown for the 30 dichotomous variables for each institution.

Figure 1 provides information on how the percentages of USG faculty enrolled in ORP varied by the year of hire. These percentages are not the same as the annual enrollment rates by cohort because the data only reflect those individuals who were still employed by USG as of Fall 2015. Nonetheless, it can be seen that the ORP percentages declined from 2009 through 2015.

Figure 1: USG Faculty Participation Rates in ORP Plan–2009 to 2015



Notes: Data are for tenure-eligible faculty ("Faculty") at the University System of Georgia in Fall 2015.

Methods

To help understand the retirement plan choices made by USG employees, logistic regression models were specified for faculty. The three different models can be written in the following general form:

(5.1) $R = \alpha + \boldsymbol{P\beta} + \varepsilon$ (Model 1)

(5.2) $R = \alpha + \boldsymbol{P\beta} + \boldsymbol{O\gamma} + \varepsilon$ (Model 2)

(5.3) $R = \alpha + \boldsymbol{P\beta} + \boldsymbol{O\gamma} + \boldsymbol{I\delta} + \boldsymbol{T\theta} + \varepsilon$ (Model 3)

where R = 1 if a faculty member was enrolled in ORP and 0 if enrolled in TRS, $\boldsymbol{P}$ = set of personal characteristics such as gender and race that could be related to the choice of plan, $\boldsymbol{O}$ = set of occupational characteristics including type of position, $\boldsymbol{I}$ = set of dummy variables for each USG institution, and $\boldsymbol{T}$ = set of indicator variables for year of hire at USG. The first model only controlled for personal characteristics such as gender, race, U.S. citizenship, marital status and age at time of hire. The second model added occupational characteristics (position type and

estimated salary at time of hire) to the first model. Finally, the third model added control variables for the institution where the person was employed and the year of hire to the second model specification. All of the coefficients are reported as marginal effects so that they can be interpreted as the impact of a one-unit change in each independent variable on the probability of an employee enrolling in ORP. Positive signs for each variable therefore indicate more preference for the ORP plan, and thus less preference for the TRS plan, due to the particular factor under consideration.

Results

Table 3 presents the results from the logistic regression models for only tenure-eligible faculty (n=3,853). With regard to personal characteristics, males were more likely than females to enroll in ORP. Black faculty and "other race" faculty were less likely than their White counterparts to enroll in ORP. The results in the third model also showed that faculty who were U.S. citizens were less likely to enroll in ORP. Turning to age at time of hire, the models showed that those faculty who were hired midcareer (ages 45-54) were least likely to enroll in ORP. This is consistent with the notion that middle-aged faculty can on average benefit the most from a defined benefit plan because they can accrue many years of service and leave at their peak earnings. In two of the three model specifications, married faculty were less likely than single faculty to select ORP, perhaps reflecting their lower labor market mobility.

Interestingly, the results revealed that full professors were less likely than comparable associate professors to enroll in the ORP plan. The fact that there were no statistically significant differences in ORP selection for assistant and associate professors is particularly puzzling given that assistant professors on average would tend to be more mobile at this stage of their career due to the added employment uncertainty that comes with being on the tenure-track. The 10-year vesting requirement in USG therefore means that there is a fair chance that an assistant professor will not be employed at USG long enough to receive the full financial benefit from the TRS plan. However, the finding could also mean that those who were hired at the associate rank were more mobile and may be more likely to consider moving again. The models showed that holding all else constant, faculty with higher (estimated) starting salaries were

significantly more likely to opt for the ORP plan. Finally, the time trend variables in the last model revealed that after taking the other variables into account, faculty enrollment rates in ORP decreased in the last four years. This is consistent with the descriptive information shown earlier in Figure 1.

Table 3: Choosing Defined Contribution Retirement Plan–Tenure-Eligible Faculty

Variable	(1) Model 1	(2) Model 2	(3) Model 3
Male	0.049**	0.032*	0.022
	(0.016)	(0.016)	(0.015)
Black	-0.129***	-0.123***	-0.134***
	(0.025)	(0.025)	(0.026)
Asian	0.078***	0.055*	0.023
	(0.024)	(0.024)	(0.024)
Hispanic	-0.030	-0.034	-0.045
	(0.038)	(0.038)	(0.037)
Other Race	-0.162*	-0.155*	-0.121+
	(0.074)	(0.074)	(0.073)
U.S. Citizen	-0.007	-0.015	-0.057**
	(0.021)	(0.021)	(0.022)
Age Hire: 35-44	-0.018	-0.024	-0.018
	(0.019)	(0.019)	(0.018)
Age Hire: 45-54	-0.044*	-0.070**	-0.066**
	(0.022)	(0.024)	(0.024)
Age Hire: 55-64	0.066*	0.037	0.052+
	(0.028)	(0.031)	(0.031)
Age Hire: 65+	0.124	0.116	0.108
	(0.076)	(0.076)	(0.075)
Married	-0.018	-0.034*	-0.039*
	(0.017)	(0.017)	(0.017)
Other Marital Status	-0.001	0.002	-0.021
	(0.039)	(0.038)	(0.038)
Management Position	-----	0.035	0.054
		(0.033)	(0.033)
Hired Assistant Professor	-----	-0.033	-0.033
		(0.027)	(0.027)

(Table continues)

Variable	(1) Model 1	(2) Model 2	(3) Model 3
Hired Full Professor	-----	-0.083*	-0.078*
		(0.037)	(0.036)
Starting Salary (Log)	-----	0.130***	0.123***
		(0.021)	(0.026)
Hired 2010	-----	-----	-0.049
			(0.034)
Hired 2011	-----	-----	-0.051
			(0.032)
Hired 2012	-----	-----	-0.127***
			(0.031)
Hired 2013	-----	-----	-0.082**
			(0.031)
Hired 2014	-----	-----	-0.108***
			(0.031)
Hired 2015	-----	-----	-0.104***
			(0.031)
Control for Institution?	No	No	Yes
Pseudo R2	0.02	0.03	0.08
Chi-Square	81.15***	135.50***	383.58***

Notes: Data include faculty hired in 2009 or later at the rank of assistant, associate or full Professor and employed at a University System of Georgia institution in Fall 2015 (n=3,853). Coefficients are shown as marginal effects. Standard errors are shown in parentheses. Reference category for race is white. Reference category for age at time of hire is 25-34. Reference category for marital status is single. Reference category for rank at time of hire is associate professor. Reference category for year of hire is 2009. Model 3 includes 29 dummy variables for institution. + p<.10, * p<.05, ** p<.01, *** p<.001.

Summary and Discussion

Choosing the right retirement plan is an important and often difficult decision. Faculty must estimate a number of parameters when making this decision, such as how long they will likely stay with the employer, what the stock market will do in coming years, and how much money they will need to live comfortably in retirement. These estimates can be particularly challenging for younger faculty who have to make such forecasts over a longer time horizon and have fewer experiences on which to draw when forming these estimates. For employees who work at an organization where there is only one retirement option, planning for retirement is fairly well defined. However, in many public colleges and universities, faculty must choose a plan shortly after their hiring.

In this study, I used personnel data on faculty at a large, public university system to examine how selected personal and work-related characteristics were related to enrollment into a defined benefit versus a defined contribution plan. The University System of Georgia is particularly interesting to study because the same benefit choices are given across the 30 USG institutions, and the vesting requirements for the two plans are substantially different. Furthermore, since employees have had the choice of plans for a number of years, I could also examine time trends in enrollment rates in the System's defined benefit plan.

Overall, I found that faculty who were either female, Black, or had lower estimated starting salaries tended to prefer the DB plan over the DC plan. The gender effect could be consistent with females being more risk averse (Jianakoplos & Bernasek, 1998), or having a longer average life expectancy than males. Likewise, the negative relationship between starting salary and enrollment in the DB plan could reflect different comfort levels with managing money, or higher-paid employees having more to potentially gain from strategically investing retirement funds in stocks. The models also showed that middle-aged faculty were most likely to prefer the DB plan. Accordingly, younger faculty may not prefer the DB plan due to mobility issues, whereas older faculty may not prefer the DB plan because of having insufficient time to receive the (back-loaded) benefits that accompany these plans. Finally, faculty with managerial-related duties were more likely to select the DB plan. US citizens were more likely to choose the TRS plan than were non-citizens. The time trend persisted even after taking into account these other factors that may influence the type of plan that a faculty member might prefer. It is particularly interesting that the enrollment rate in the DB plan for faculty increased between the years 2009 and 2015, given that this time period coincided with a major recession that would tend to favor secure financial payoffs over riskier investments.

One of the main implications of this study is that retirement plan options should not be viewed as a "one size fits all" policy. The regression results show that defined benefit plans are more attractive options for certain types of faculty. This study also fits within the larger trend in the US of movement away from defined benefit retirement plans. As the age distribution of the population in the U.S. has shifted to the right, a number of states and pension sponsors have experienced added difficulty in meeting their DB obligations (Conley, 2008; Dulebohn & Murray,

2007; Goldhaber & Grout, 2016; Gustman & Steinmeier, 1992). In the spring of 2018, for example, the state of Georgia allocated an additional $600 million to help cover projected payouts in its DB plan. If employers continue to migrate away from DB plans and toward DC plans, this shift may have implications for the types of professors who would be positively or negatively impacted by this change.

Given the unfavorable demographic trends in the US, the defined benefit plans in many states will likely face – if they haven't already – significant challenges in determining how to fund the sizable retirement obligations of employees in these plans. As states phase out DB plans in favor of DC plans or hybrid DB/DC plans, they shift the risk for funding retirement onto employees. Colleges and universities that maintain DB-type plans would therefore be more attractive to academics who are risk averse, in the middle of their careers, and perhaps less prone to voluntary turnover. Of course, employers who find a way to maintain DB plans may do so by raising the participation costs for workers, or cutting back on other expenditures to ensure that the DB plan can fulfill its financial obligations.

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