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PENSIONS AND QUITTING: A TEST AMONG COMPETING EXPLANATIONS[1]

Multiple regression analysis of 402 unionized, public utility employees is used to examine the effects of a final-earnings pension plan and other human resource management programs on the willingness to engage in quit behaviours in response to problems as work. Consistent with expectations, employees facing higher expected losses under the pension plan are found less likely to quit. The willingness to quit is also found to be reduced by other factors that raise the cost of this action to the individual (e.g., compensation premia), where dispute resolution options are perceived to be more effective (e.g., voice) and where the current setting is viewed more favourably (e.g., under conditions of higher affective commitment and job satisfaction). Implications for pension theory and research are discussed.

Over the past several decades, there has been an abundant number of empirical studies on role of occupational pension incentives, particularly as they relate to employee turnover (for recent reviews see Ippolito 1994, Gustman, Mitchell and Steinmeier 1994; and Dorsey 1995). Much of this research follows an implicit contracting model in which employees are viewed as providing a long-term commitment and performance guarantee in exchange for an implied right to employment security and a pension linked to salary just prior to retirement. The pension plan plays an important enforcement role in this model by imposing a loss in the form of reduced benefits for employees who quit prior to the completion of their long-term contract.

Despite all the research conducted, however, important questions remain unanswered about pension contracts such as how much employees know about them and how important a role they play in encouraging long-term employment relations. In the pension-turnover research, for example, separation measures do not always closely distinguish the reasons for departure and so don't provide a strong test of how cognizant employees are of the pension incentive in choosing to remain or not in the long-term contract (Luchak 1997). Isolating the effect of the pension on the voluntary quit decision would provide more direct evidence of employee responsiveness, and hence understanding, of their pension contracts. Also, pension loss is often imputed based on average plan characteristics rather than actual plan features so that the actual amounts of pension loss that employees are presumed to respond to is not fully known. Finally, little or no control is typically provided for alternative mechanisms for encouraging long tenure in the firm (e.g., other seniority based benefits, efficiency wages, an attractive work setting, due process mechanisms) so that the unique effects of pensions vis-a-vis other HR practices are not fully known (Gustman, Mitchell and Steinmeier 1994).

Based on data gathered in 1997 from a group of full-time, unionized public utility workers covered by a defined-benefit pension plan in Ontario, this study addresses some of

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these gaps in the literature. Specifically, the effects of pension capital loss on employee quitting, after controlling for other potential explanations for exit under long-term employment contracts is examined. The remainder of the paper is organized as follows. In the next two sections, an elaboration of the theoretical framework and manner in which pensions and other workplace programs affect the incentive to quit under long-term employment contracts is provided. Data and methodology are then discussed and findings are analyzed. Lastly, a discussion and conclusion completes the paper.

Theoretical Model

The decision to quit is conceptualized as a form of withdrawal behaviour that employees may engage in in response to a workplace problem (Withey and Cooper, 1989). Quitting is viewed as a product of three general factors:

$$\text{QUIT} = f\,(\text{COST, INSTRUMENTALITY, ATTRACTIVENESS})$$

where COST refers to the cost of venting one's frustrations through the quit decision, INSTRUMENTALITY refers to the effectiveness of alternative dispute resolution methods available to employees for addressing their problems, and ATTRACTIVENESS refers to the desirability of remaining in the current job and expending the necessary time and effort to reduce the sources of problems causing dissatisfaction at work. The higher the costs of exit, more instrumental are dispute resolution procedures, and attractive is the current setting, the less employees are expected to withdraw through the quit behaviour.

Pensions and Alternative Influences on Quitting

There are a variety of mechanisms for encouraging long-term employment contracts, and hence, reducing the propensity to engage in quit behaviour. Failure to control for these factors may lead to omitted variable problems and, hence, faulty conclusions about the incentive effects of pensions and other human resource management programs.

Pension Capital Loss

The most common form of occupational pension plan bases benefits on a formula that multiplies final earnings by years of pensionable service and a constant. Such final-earnings formulas penalize early leavers (e.g., quitters, those who are dismissed for just cause) in two main ways. First, the early leaver's pension is fixed in nominal terms at the point of termination rather than their pre-retirement wage so their pension does not reflect any of the nominal wage growth that would normally occur during this period. Second, early leavers forego entitlement to more generous early retirement subsidies which are generally allocated on the basis of higher years of continuous service or membership in the pension plan. Assuming non-portability between plans, quitting creates discontinuities which prevent employees from taking advantage of the cumulative value of their pensionable service over their career. Generally, the final-earnings pension is expected to increasingly reduce the propensity to quit by increasingly confronting the employee with a stronger economic loss for failing to remain with the firm. Other things equal, if employees desire pension contracts and respond to their incentives they should be less willing to voluntarily quit, the greater the losses they face under the pension plan.

Firm-Specific Training

Investments in firm-specific training may discourage quitting because the returns to such training can only be realized through continued employment. Thus, if employees share in the costs and benefits of specific training they may be less willing to quit as this would prevent them from amortizing the full costs and realizing the full benefits of their training investment. Pension covered employees have been found more likely to receive training (Hutchens 1987) suggesting the importance of controlling for this and other human capital determining factors in estimating the pension-quit relationship.

Seniority

Rewarding longer service with increasingly better job rights such as increased wages and benefits, and greater promotion opportunities and protection from arbitrary treatment can encourage long-term employment contracts, particularly in unionized environments where seniority is more heavily relied upon as a decision making criterion. The general non-portability of seniority based benefits between jobs raises the cost of quitting so that higher seniority may be associated with less willingness to engage in quit behaviour.

Wage Tilt

Tilted wage profiles that pay employees below-market wages early in their career and above-market wages later in their career can encourage long-term employment contracts, and hence, discourage quit behaviour. Employees will be less likely to quit early under these circumstances for fear of losing the higher wage later in their career. Empirical evidence showing a positive correlation between pension coverage and higher wages provides some support for this proposition (Lazear 1979). As a determinant of job changing, more recent evidence suggests that wage tilt may be relatively less important in comparison to pension capital losses (Ippolito 1991).

Compensation Premia

Compensation premia, or the payment of rents to employees, may encourage long-term contracts (Allen, Clark and McDermed 1993; Gustman and Steinmeier 1993). Compensation premia may be especially important during the early stages of a career when employees are generally more mobile and pension capital loss is small. Alternatively, it may be paid as a compensating wage for the risk of layoff, especially where reputation costs to the firm for reneging on pension commitments are low (Gustman, Mitchell and Steinmeier 1994). Evidence of pension-covered employees receiving premia is contained in empirical research showing that there is not a dollar-for-dollar tradeoff between pensions and wages and that pension covered job changers receive low wages. There is disagreement in the literature as to whether pension capital losses (Allen, Clark and McDermed 1993) or compensation premia (Gustman and Steinmeier, 1993) are the primary determinants of the lower mobility observed among pension-covered workers.

Labour Market Sorting

Labour market sorting argues that employees with greater productive characteristics sort themselves into long-term employment contracts (Allen, Clark and McDermed, 1993). According to this view, pensions and other human resource management programs don't reduce quitting, but rather, attract workers with characteristics of value to the firm and discourage those with unwanted characteristics (Gustman, Mitchell and Steinmeier 1994). Thus, the pension or other human resource management programs are an efficient means by which firms are able to deal with asymmetric information about unobservable worker characteristics. In pension research, the sorting hypothesis is typically tested by looking for a residual effect of pension coverage on employee behaviour, after controlling for pension capital loss. Pension research shows the sorting hypothesis to play an important, but secondary role to pension capital loss as a determinant of job changing (Allen, Clark and McDermed 1993).

Instrumental Dispute Resolution

Providing instrumental forms of dispute resolution can be expected to encourage long-term employment relations, particularly in the case of human resource management programs that require employees to relinquish the exit option as a dispute resolution tactic. Where "safety-valves" for the expression of conflict are provided (e.g., voice), employees should feel less compelled to rely on other responses such as quitting to settle their differences (Hebdon and Stern 1998). Alternatively, however, by making supervisors look bad, voicers may be more subject to retributive behaviours (Lewin 1987; Lewin and Peterson 1988; Klaas and De Nisi 1989) increasing the probability of responses other than voice as a dispute resolution tactic.

Attractiveness of the Work Setting

Employees are more likely to agree to long-term employment relations and to expend the necessary time and effort to manage employment disputes in ways other than through quitting where they find the work setting to be more attractive (Withey and Cooper 1989). Not using the exit option in these cases is likely for various reasons. For example, employees attracted to the work setting likely view their interests as more closely aligned to those of the firm, and as a result, may be expected to stay, recognizing that this decision will not only benefit the organization but also themselves. Attraction to the work setting may also be a result of greater satisfaction with terms and conditions of employment which lowers any felt need to use exit as a response to workplace problems.

Research Methodology

The data for this study was gathered through a survey administered in the late spring/early summer 1997 to a random sample of approximately 1250 regular full-time employees in a large, unionized, public utility company in the province of Ontario. Surveys were distributed through the company's inter-office mail system to union members at their places of work. Data collection continued throughout the summer with two follow-up letters reminding individuals to complete and return the survey. In the end, 429 surveys were returned for a response rate of approximately 35%. This response rate is somewhat low and is most likely due to the long length of the questionnaire (12 pages), sensitive nature of some of the questions, and its distribution during summer months. Notwithstanding these concerns, however, characteristics of the achieved sample compared very favourably with actual characteristics of the bargaining unit suggesting that the 429 responses were fairly reflective of the union's membership as of the summer 1997. For example, sample estimates showing approximately 18% of all employees to be female and, on average, to be 42 years of age with 15 years of service and earning $53,000 annually, compare favourably with descriptive statistics provided by the union showing 19% of all members to be female and, on average, to be 41 years of age with 15 years of service and earning $57,000 annually.

Dependent Variable

The dependent variable (QUIT) was measured by 3-items based on a question asking respondents how often they engaged in the following behaviours over the past year. The items were "thought about quitting", "searched for another job" and "intended to quit the job." Responses were measured on a 7-point scale ranging from 1=almost never to 7=almost always, with the mid-point 4=sometimes. Coefficient alpha reliability for this scale was .73. The sum of the 3 response items was divided by 3 leading to an average QUIT score of 2.52 (S.D.=1.50). This dependent variable offers the advantage of measuring employee initiated quit attitudes and behaviours and so provides a stronger test of employee responsiveness to pension incentives.

Pension Capital Loss

Following the work of Lazear and Moore (1988) and Stock and Wise (1990), the reduced value of pension benefits from early departure is modelled as the loss of an option value (PENSION). A worker who quits or is discharged loses the option of working and accruing additional pension benefits. The option value in this study is defined as the present discounted value of the difference in maximum pension payments if one were to work until their pension wealth was maximized in the current job (the stay pension), and their wealth from two other jobs, identical in all respects to the present but for the fact that separation from the first job and the start of the second job occurs immediately (the quit pensions). The difference in pension wealth between the two scenarios is not due to different years of service as retirement in the quitter's second job is constrained to occur at the same age that pension wealth is maximized for the job stayer. Option values are expressed as a ratio of the employee's current annual salary and are calculated in the context of a plan that provides a lifetime pension payable as early as age 55 (for the vast majority of employees). The benefit received is based on a varying percentage of employees' highest three consecutive years of salary multiplied by their year's of continuous service under the plan. Annual benefits get a guaranteed annual increase equal to three-quarters of the previous year's increase in the consumer price index. In constructing the option value measure, certain assumptions were made: inflation and nominal interest rates were assumed to grow at annual rates of 3% and 8%, respectively, and date of death varied by current age. Higher option values to continued work are expected to reduce the propensity for quitting. On average, not remaining in the current job until pension wealth was maximized led to a loss of 118% of current annual salary (M=1.18, S.D.=.80).

Other Variables

As mentioned, other factors are expected to influence the quit decision and need to be controlled to provide stronger tests of employees' responsiveness to their pension contracts. In particular, controls are provided for firm-specific human capital, seniority, wage tilt, compensation premia, labour market sorting, instrumentality of dispute resolution mechanisms and the attractiveness of the work setting.

The extent of firm specific training (TRGSPEC) received by respondents is measured by a question asking them to indicate how much they agreed with the statement that the employer-sponsored education, training and development they received over the past 3 years would not be very useful outside the organization. Responses were measured on a 7-point scale ranging from 1=strongly disagree to 7=strongly agree. Because the returns to specific training can only be captured through continued employment, it should reduce the willingness to engage in quit behaviour (M=3.72, S.D.=1.93).

By rewarding longer-term employees with increased wages and greater promotion opportunities, and protection from arbitrary treatment, seniority is expected to be associated with lower quit behaviour. Seniority is measured by years of credited service under the pension plan (SENIORITY). On average, respondents had 14.5 years of service (M=14.49, S.D.=6.82). Seniority, as well as a measure of earnings (SALARY) may also provide a rough proxy for wage-tilt in that low levels of seniority or salary will likely reflect below-average wages early in one's career and higher levels of seniority or salary will likely reflect above-average wages later in one's career. On average, respondents earned $53,400 annually (M=53.43, S.D.=7.92).

Compensation premia (PREMIA) was measured by a question asking respondents to indicate how much better they believed comparable other employee's terms and conditions of employment were relative to their own (the 7-items measured were: wages; pension benefits; other benefits; employment security; opportunities for advancement; rights to due process; and working conditions). Measurement was on a 7-point scale ranging from 1=much worse to 7=much better. Scores were reverse coded so that higher PREMIA values represent the extent that employees believe their own terms and conditions of employment are better than those received by comparable other employees working in different organizations (alpha=.84, M=4.33, S.D.=.96). The higher the compensation premia employees risk forfeiting, the lower the likelihood they will engage in quit.

Labour market sorting (SORT) is measured directly by a 3-item scale that asked respondent to think back when they were first hired and indicate the extent that they "were attracted to the organization in hopes of a stable, long-term job", "accepted the job knowing that a long-term relationship was expected and would be rewarded" and "had a good understanding of terms and conditions of employment, including the pension plan." Measurement was on a 7-point scale ranging from 1=strongly disagree to 7=strongly agree (alpha=.72, M=5.90, S.D.=1.15). If human resource management program impacts operate through labour market sorting then this variable should be negatively associated with quit behaviour.

Instrumentality perceptions of two voice mechanisms are measured by two questions asking respondents to indicate how effective a means directly voicing your concerns "to a person in authority" (INDVOICE) and "through the union" (UNIVOICE) were in responding to an important problem in their workplace. Both items were measured on a 7-point scale ranging from 1=highly ineffective to 7=highly effective. Means and standard deviations for the instrumentality of individual and union voice items were: INDVOICE (M=5.04, S.D.=1.88) and UNIVOICE (M=4.52, S.D.=1.86). Employees using voice may be more (the "supervisor retribution" effect) or less (the "safety valve" effect) likely to quit.

Feelings of belonging, identification and involvement with the organization (ACS) and higher levels of general job satisfaction (SATIS) likely reduce the tendency to engage in quit behaviour as such employees view the organization as a more attractive place to work. More satisfied employees may also have less sense of grievance because existing dispute resolution mechanisms in the organization are considered sufficiently effective. ACS is measured by an 8-item affective commitment scale (see Allen and Meyer, 1990; Meyer and Allen, 1984; 1991). A 7-point scale was used with higher scores reflecting higher levels of affective commitment to the organization (M=3.84, S.D.=1.24). Coefficient alpha reliability for this scale was .82. General job satisfaction (SATIS) is measured by a 5-item scale of its major facets: pay, promotions, co-workers, supervision and the work itself. Items were measured on a 7-point scale ranging from 1=very dissatisfied to 7=very satisfied (M=4.58, S.D.=1.10). Coefficient alpha reliability for this scale was .64.

Other control variables included in the model are age (AGE) gender (FEMALE), marital status (MARRIED) and five occupational (OTHTRADE, CIVTRADE, OPERATOR, CLERICAL, TECHNICA) and two geographic work location (REGION, NUCLEAR) dummy variables. Older workers (AGE) are generally less mobile which both raises the cost of quitting and increases the attractiveness of working for change within the current organization. Age was measured through a question asking respondents to indicate their year of birth. The average respondent was 41.58 years of age (S.D.=7.21). All things being equal, it is not clear whether males and females (FEMALE) should differ in their willingness to engage in quit behaviour. Fewer job opportunities due to systemic labour market discrimination, delayed career entry due to child rearing and family responsibilities, and/or longer life expectancies may all combine to raise the costs of quitting from good paying, long-term jobs for females. Gender is measured dichotomously (1=female; 0=male). Approximately 18% of the sample was female (M=.18, S.D.=.38). Employees who are married (MARRIED) may be less likely to quit because it is costly to the effective functioning of the household. Marital status is measured dichotomously (1=married; 0=otherwise). Approximately 85% of the sample was married (M=.85, S.D.=.35).

Findings

The final specification of a reduced form OLS equation in which QUIT is regressed on the various independent variables is found in Table 1. Beta weights, which are the coefficients of the independent variables when all variables are expressed in standardized (z-score) form, are included in the table to make comparisons between independent variables somewhat more comparable (Norusis 1988). Sample size dropped slightly to N=402 due to a small number of missing values spread across the variables under consideration.

The regression results are generally consistent with expectations. In particular, the coefficient on PENSION is consistent with expectations that as the option value of continued work increases, employees are less likely to engage in quit related behaviours. Moreover, this finding occurs after controlling for other important determinants of quitting.

Among variables reflecting plausible alternative mechanisms for encouraging long-term contracts, identification and satisfaction with the organization, voice mechanisms and compensation premia all played a role in influencing quit propensities. The PREMIA effect is consistent with the work of Gustman and Steinmeier, 1993 however, how much of this effect represents an efficiency wage is not immediately obvious. While the instrumentality of dispute resolution mechanisms available to respond to problems were found to be important, they worked in opposite directions. The negative coefficient on INDVOICE supports the safety valve hypothesis whereas the positive coefficient on UNIVOICE supports the supervisor retribution hypothesis. Both ACS and SATIS results were very robust and quantitatively significant highlighting the importance of an attractive work setting in which to incur, among other things, the risk of pension loss.

Specific training (TRGSPEC), labour market sorting (SORT) and seniority (SENIORITY) effects were not significant for the population but the coefficients for these variables were in the anticipated direction. Conversely, the salary (SALARY) coefficient was significant but in the wrong direction. The first three effects may operate through other variables such as ACS or SATIS. The poor showing of SENIORITY may also reflect countervailing influences in its impact on quitting. For example, certain seniority benefits available to the employees in this sample are portable (e.g., health and dental coverage is provided after termination where employees have 25 or more years of service) so that once this seniority threshold has been met, the costs of quitting becomes lower. The absence of a negative earnings effect may be due to the fact that higher earners have more marketable skills that reduce the costs of quitting. It may also reflect the frustrations of higher income earners stuck at the tops of their salary scales. The insignificance of the SENIORITY and SALARY variables may also reflect the limitations inherent in wage tilt programs for encouraging long-term employment relations. For example, by redistributing income and tax liability to the later stages of employees' careers such programs may run contrary to their life cycle needs for disposable income and increase their overall exposure to tax liability. Also, such programs would appear difficult to implement given the need to alter wage levels depending on age of entry into the job, a practice that would appear inconsistent with age discrimination laws (Gustman, Mitchell and Steinmeier 1994).

Table 1. OLS Regression Analysis of QUIT (N=402)

Variable	B	SE B	Beta	T	Sig T
AGE	-.003	.011	-.018	-.342	.732
FEMALE	.594**	.249	.150	2.383	.017
MARRIED	.096	.183	.022	.527	.598
ACS	-.375***	.060	-.311	-6.256	.000
SATIS	-.353***	.066	-.257	-5.346	.000
PREMIA	-.131*	.072	-.084	-1.824	.069
INDVOICE	-.082**	.038	-.103	-2.161	.031
UNIVOICE	.076**	.036	.094	2.092	.037
TRGSPEC	-.021	.032	-.027	-.638	.523
SORT	-.029	.056	-.022	-.524	.600
SENIORITY	-.019	.014	-.087	-1.329	.184
SALARY	.027**	.013	.145	2.064	.039
OTHTRADE	-.029	.269	-.005	-.109	.913
CIVTRADE	-.141	.254	-.026	-.556	.578
OPERATOR	-.716***	.209	-.174	-3.425	.000
CLERICAL	-.376	.328	-.088	-1.147	.252
TECHNICAL	-.444**	.187	-.129	-2.365	.018
REGION	-.464**	.216	-.150	-2.144	.032
NUCLEAR	-.559***	.210	-.186	-2.656	.008
PENSION	-.216**	.101	-.114	-2.135	.033
CONSTANT	6.248***	.979		6.379	.000
R^2	.358				
Adj-R^2	.325				
F	10.633***				

* p<.10, ** p<.05, *** p<.01

Finally, among control variables, females (FEMALE) were significantly more likely to want to quit, as well as employees in certain occupations and work locations. The FEMALE effect may reflect their somewhat better retirement options under this particular plan (some female employees can retire as early as age 50) which raises the relative costs of responding to workplace problems through the quit option.

Discussion and Conclusions

Using data from a 1997 survey of unionized, public utility employees, this study finds that expected pension capital losses reduce the willingness of employees to utilize the quit option as a way to respond to workplace problems. This willingness is also found to be reduced by other factors that raise the cost of this action to the individual (e.g., compensation premia, gender), where dispute resolution options are perceived to be more effective (e.g., voice) and where the current setting is viewed more favourably (e.g., under conditions of higher affective commitment and job satisfaction).

The finding that expected pension losses reduce the use or perceived need for quitting is consistent with implicit contracting arguments that pensions help maintain long-term employment contracts. The results of this study also suggest the importance of other human resource management practices working in complement with pensions in promoting long-term employment contracts. For example, efficiency wages and pension capital losses may work in concert, with the former creating an incentive for younger workers to stay at a time when pension capital loss is low, and the latter playing more of a role in penalizing quit behaviour among middle aged workers. Also of importance will be human resource management programs that provide some sense of identification with and reason to want to belong to the organization, as well as for fair and effective procedures for the resolution of interest and other disputes at work. Absent these conditions, employees may not be willing to accept the risk of capital losses under a final-average-earnings pension plan. Pension research needs to more fully account for these factors when examining the influence of pension incentives on employee behaviour.

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