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DIFFERENTIAL EFFECTS OF POST-SCHOOL TRAINING  
ON EARLY CAREER MOBILITY

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ABSTRACT

This paper examines in detail the factors that influence the probability of new entrants leaving their first job after completing school, including the differential effects of company provided training, apprenticeships, and training received off-the-job from for profit proprietary institutions. Particular attention is paid to how training effects vary by race, gender and educational attainment. In the paper it is shown that the majority of company provided training spells begin after an employee has been with an employer for at least one year while the majority of off-the-job training spells begin during the first year with an employer. Overall there is no significant difference in the probability of leaving the first employer by gender. Company provided training results in a lower probability of leaving an employer while off-the-job training increases the probability of leaving the first employer. Both of these effects are especially strong for women.

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While the number of studies on the incidence of private-sector training and its impact on wages and productivity has been increasing (recent studies include Altonji and Spletzer (1991), Barron et. al. (1988), Bartel (1989), Bishop (1991), Brown (1989), Duncan and Hoffman (1979), Lillard and Tan (1986), Lynch (1992), and Mincer(1988)) there has been virtually no analysis of the impact of private-sector training on the mobility patterns of young workers. Yet firms that make investments in workers' training are very concerned about the turnover of their trainees. At the same time there are other forms of private-sector training such as training programs provided by proprietary institutions off-the-job that individuals can use to move out of dead end jobs and into a higher paying career track. The lack of analysis on training and mobility has been due primarily to the lack of detailed information on the timing and source of private-sector training and employment spells in the United States. Surveys of employers' training practices are useful for examining the impact of training on wages and productivity but they are less useful for examining the patterns of job changes of workers and the role of training in these changes. Longitudinal surveys of individuals that follow workers over time and across employers, are much more useful for examining this type of issue.

This paper focuses on the role of different types of training on the probability of leaving an employer. In Lynch (1992) the impact of private-sector training on the determinants of wages and wage growth of young workers was examined and the following conclusions were reached. First,

formal company provided training, or ON-JT, appears to be highly firm specific in the U.S. and, therefore, not portable from employer to employer. Company provided training raises wages in the current job but has no effect on the wages earned in subsequent employment. Second, formal training received from 'for-profit' proprietary institutions, or OFF-JT, has little effect on the wages earned on the current job but it does raise the expected wage in subsequent employment. Finally, there are important differences by race, gender and education level in the probability of receiving different types of formal training and the impact this training has on wages and wage growth.

These findings have several implications for the impact of training on mobility. One implication is that if company provided training is primarily firm specific then the probability of leaving an employer should decline if a young worker has experienced some on-the-job training. An additional implication is that if workers participate in off-the-job training programs they are more likely to leave the current employer. In this case, off-the-job training allows a young worker to change career paths and find a 'better match'. Using data from the National Longitudinal Survey Youth cohort, NLSY, this paper examines in detail the factors that influence the probability of new entrants leaving their first job including the differential effects of company provided training, apprenticeships and training from 'for-profit' proprietary institutions.

There are a variety of explanations of why young workers change their employment status so often in the early years of their careers and then

seem to 'settle down' into more stable employment. For example, young workers are more likely to be laid off in a downturn than older more experienced workers. There are other explanations of the higher turnover rates of young workers, however, that have little to do with the state of demand. Such theoretical explanations include job search, job matching and on-the-job training. Job search theory, as detailed by Lippman and McCall (1976), predicts that workers who earn more relative to their alternative wage are less likely to quit a job. In the Jovanovic learning model (1979a, 1979b, 1984) both workers and firms 'learn' about the unobserved characteristics of each other over time. There are two main predictions on turnover in this framework. On the one hand, 'better' workers remain with employers longer leading to negative duration dependence in the probability of leaving a job. On the other hand, as 'bad' matches are revealed the turnover probability will rise over time. Finally, the process of on-the-job training within the human capital model as described by Mincer (1974) implies that as workers acquire firm-specific training, their productivity and, consequently wages, will rise. Therefore, the probability of leaving an employer will fall with training and tenure since the wage will rise relative to the alternative wage. In addition, employers will be less likely to lay off those workers in whom they have invested in specific skills.

All of these theories are not mutually exclusive and clearly some combination of all of these factors influences the probability of a young worker remaining with an employer. Consequently, it is not the purpose of this paper to distinguish between these different theories. Rather, it would be more

useful if precise data on employment spells and training could be found in order to establish the links between different types of training and turnover behavior.

There have been relatively few empirical studies that have attempted to examine the role of training, demand and other factors in predicting the probability of leaving an employer. Recent exceptions include Gritz (1988) and Mincer (1988). Gritz used data from the early years of the NLSY and found that private sector training (not distinguishing between different sources of training) increased the amount of time in total employment for females but decreased the amount of time males were employed. Gritz's study used data from the very early years of the NLSY when most of the observed training spells occurred before the detailed employment history in the survey begins. Mincer used data on training and mobility from the Panel Study of Income Dynamics, PSID. The training variable comes from the answer to the following question in the 1976 and 1978 interviews: "On a job like yours how long does it take the average new person to become fully trained and qualified?" While this is potentially a very broad measure of training it does not measure how much training has actually occurred for the specific respondent. It is also not possible with the PSID data to observe when the training occurred during an employee's tenure with the firm.

Using data from the NLSY it is possible to examine in more detail than has been possible in the past the role of training, the general state of demand, and other personal characteristics in determining turnover. In particular, I examine the incidence of private-sector training for young workers

in the United States in the early years after they have completed school; the timing of employer provided training versus training received off-the-job from proprietary institutions over a worker's tenure on the job; and the impact of different types of private sector training on the probability of leaving an employer.

### **Empirical Framework**

For the analysis presented in this paper a subsample of the NLSY is used. The NLSY is a survey of 12,686 males and females (who were 14 to 21 years of age at the end of 1978) and contains detailed data on education, jobs, military service, training programs marital status, health and attitudes of young workers. The respondents have been interviewed every year since 1979 on all aspects of their labor market experience. The response rate in 1985 was over 95 percent of the original cohort. The data on types of training (other than governmental training or schooling) received are some of the most comprehensive data available on private sector training. Respondents were asked about what types of training they had received over the survey year (up to 3 spells not just the longest) and the dates of training periods by source. Potential sources of training included business college, nurses programs, apprenticeships, vocational and technical institutes, barber or beauty schools, correspondence courses and company training. All of the types of training programs are independent from training received in a formal regular schooling program which is included in the schooling variables. However, the questions ask about only those spells of training that lasted at least 4 weeks (they did not

have to be full time). This suggests that the NLSY measure of training is more likely to capture formal training spells than informal on-the-job training. In 1988 this restriction of 4 weeks or more of training was dropped from the NLSY survey. It is therefore possible to see the impact of this restriction on the measurement of the incidence of training. The restriction only seems to affect the measurement of the incidence of company training and not the reported incidence of off-the-job training or apprenticeships. For a sample of non college graduates in 1988 who were 25 years old, 3.8 percent had four weeks or more of company training while 10.2 percent had company training of any length. The following percentages of females(males) had 4 weeks or more of on-the-job training versus OJT of any length - 1.4%(5.9%) versus 7.1%(12.9%). Therefore, in the following analysis which uses data from 1979-1987 when the 4 week restriction applied, the number of company provided training spells will be underestimated. However, from the point of view of firms, the turnover probabilities of those trainees in the longer spells of training is a major concern.

The training data are separated into three categories -- company training (ON-JT), apprenticeships (APPT), and training obtained outside the firm (OFF-JT). OFF-JT includes training obtained from business courses, barber or beauty school, nurses programs, vocational and technical institutes and correspondence courses. Each of these three types of training are allowed to have different effects on the probability of leaving an employer. For the empirical work I have excluded the 1280 respondents in the military subsample in the NLSY from the analysis. I have also deleted any respondent who has



completed school before the 1979 interview year. The final sample is a pooled sample of young workers who have left school and not returned to school for at least four years ('permanently' out of school). Therefore, this sample is made up of 5 waves of school leavers -- those who left in 1979, 1980, 1981, 1982 and 1983. They are then followed for their first four years in the labor market after leaving school. In addition, the respondents had to have obtained a job in the first year after 'permanently' exiting school. Since I do not include anyone who completed school before 1979 the sample size is substantially reduced. In addition, I do not attempt to model the decision to leave school over the period (1979-1983). Obviously this was a period in which many young people may have delayed entry into the labor market given the high unemployment rate. I include dummy variables for year of entry in the following analysis but future work would benefit from a complete modeling of the schooling/employment/ training decisions taken by young workers.

The empirical work examines the determinants of the turnover probability for the first job after leaving school permanently for this sample. Characteristics of this sample are presented in Table 1. As can be seen in this table, almost three quarters of the sample left their first employer during the first four years after school. The average duration of employment (including those still employed after four years) was about a year and a half. Almost seventeen percent of the sample experienced some form of formal training during their first job but the distribution of this job training by source varied substantially by demographic group. College graduates were much more likely to have received some form of ON-JT while those with just a high school

diploma were more likely to have participated in some form of OFF-JT. Women were more likely than men to have received some form of OFF-JT but there was little difference in the probability of receiving ON-JT by gender (not controlling for other factors). It is important to note that some of the cell sizes for training by demographic group are extremely small and this needs to be kept in mind when interpreting some of the following results.

Table 2 presents more detailed information on the relationship between tenure on the job with the first employer and the various types of training. The first panel shows that over 80 percent of the sample have left their first employer by the fourth year in the labor market. Those who left their employer relatively early were much less likely to have had any formal ON-J-T (only 1.3 %) than those who stayed with their first employer 3 years or more (8.1%). The pattern is a bit different with participation in OFF-J-T programs. Almost a quarter of those who left their first job between 2-3 years received OFF-J-T. However, this percentage drops dramatically for those with 3 or more years on the job to only 11.7 percent.

The second panel is perhaps even more interesting. This panel shows, conditional on having participated in one of the types of private training, when that training spell begin during the tenure with the employer. As discussed in Lynch (1992) one view of training is that it is a 'test' (Weiss and Wang (1990)). In other words, firms use formal training programs as a way to avail themselves of private information known only by the workers. Workers who fail the test leave the firms and those who pass do not leave. This would imply that we should observe ON-J-T occurring early in a

workers's tenure with the firm. However, in this second panel we see that 60 percent of ON-J-T spells began after one year on the job at the firm. This seems to be more consistent with a job matching story where firms(workers) make a determination within the first 6-12 months on whether or not there is a match, and if yes, the firm then invests in more costly formal ON-J-T. Since the measure of training used in this paper only captures spells that last 4 weeks it may be possible that shorter formal or informal training spells are used early in the career with an employer as an indication of match quality and longer training spells follow later. I also examined the timing of on-the-job training for those individuals who had remained with their employer for more than 3 years. For this subsample, as for the larger group of trainees, (note the sample size is becoming quite small) the majority began their training after the first year on the job.

Contrary to the timing of ON-J-T spells almost 60 percent of spells of OFF-J-T began within the first year with an employer. This may be due to employees going outside the firm to obtain training that they need for their current job, or employees deciding that there is not a job match and seeking a training program that will allow them to leave their current employer and get a better job. While off-the-job training may be funded by either the individual worker or the firm, there is evidence in the NLSY 1988 survey that the majority of those who participate in OFF-JT pay for the training themselves. Finally and not surprisingly, most apprenticeships begin very early in the tenure with an employer.

A convenient method for analyzing the determinants of the probability

of leaving an employer is estimating the hazard rate or failure rate as it is called in renewal theory. The hazard rate or turnover probability can be expressed as follows:

$$(1) \quad h(t) = g(t)dt/(1 - G(t))$$

where  $g(t)dt$  is the probability of leaving an employer between time  $t$  and  $t+dt$ ,  $1 - G(t)$  is the probability of being employed at time  $t$ , and  $t$  is the duration of the current spell of employment. In this paper the following Cox proportional hazards model is used:

$$(2) \quad h(t; z) = h_0(t)e^{zB}$$

where  $h_0(t)$  is an arbitrary and unspecified base-line hazard function and  $z$  is a vector of characteristics including training. The Cox model is convenient for dealing with right censoring and it is nonparametric in the sense that it involves an unspecified base-line hazard instead of making further distributional assumptions such as those required for the Weibull or Log-logistic hazard. This means that it will not be possible to measure whether or not there is negative or positive duration dependence in employment, but this is not a key focus of this paper.

Another possible empirical approach is to estimate a logit or probit model of the 0-1 probability of leaving an employer over some interval. The problem with this estimation strategy is that the choice of the interval is

somewhat arbitrary. In addition, it is not easy to incorporate time varying regressors such as training into this approach. However, the hazard framework can easily allow for time varying factors or covariates such as training. The hazard including time varying covariates is modified as follows:

$$(3) \quad h(t; z(t)) = h_0(t)e^{z(t)B}$$

where  $z(t)$  is a vector of all fixed and time varying covariates. As discussed in Cox and Oakes (1984) the components of the vector  $z(t)$  can be divided into the following three categories of variables - treatments that vary with time; intrinsic properties of individuals/jobs that are time invariant; and exogenous time varying variables.

Obviously the different types of private sector training are the 'treatment' variables of interest. Examples of time invariant personal and job characteristics include gender, race, education, occupation, industry, union status, location of the job in an urban area, and whether or not the respondent is disabled. Time varying 'exogenous' variables for the purpose of this study include the local unemployment rate, marital status and the number of children.

### Empirical Results

The results obtained from estimating the Cox proportional hazard with time varying covariates are presented in Tables 3 and 4. The time varying covariates are indicated by an asterisk. The time invariant intrinsic characteristics of the individuals/jobs in Table 3, equation 1, that seemed to

influence the probability of leaving an employer included being disabled, union status, race, and school level. Disabled respondents were more likely to leave their employer while being employed in a job covered by a collective agreement or being a college graduate significantly lowered the probability of leaving the first employer. Blacks were more likely to have shorter durations on their first job than whites and hispanics. There was no significant effect on the length of time with the first employer by gender. Therefore, it appears that employer concerns of investing in female employees because they have a higher probability of leaving an employer are not upheld by this data. There were significant differences in expected length of employment by school attainment. Those with a high school degree or less were more likely to leave their employer, whereas those with a college degree were less likely to leave.

Of the time varying 'exogenous' covariates the local unemployment rate was significant implying that those who lived in high unemployment areas were less likely to leave their employer. The hurdle for youths in high unemployment areas seems to be getting a job rather than keeping one. The number of children seemed to have no significant effect on the expected duration of the first job. Finally, those workers who were married were more likely to remain with their first employer.

With regards to the training variables, those young people who had some formal ON-JT were much less likely to leave their employer while those who participated in some form of OFF-JT were more likely to leave. This seems to suggest that ON-JT is more firm specific while OFF-JT is more 'general'. These findings are consistent with the results on training and wages

found in Lynch (1992).

In equation 2 the hazard is re-estimated including industry and occupation dummies. The inclusion of industry and occupation does not change the coefficients or significance of the variables in equation 1 with the exception of college which becomes insignificant. Those young workers employed in construction, wholesale and retail, and business, repair, personal and professional services were much more likely to leave their employers than those in manufacturing. The only significant occupation was managers with managers more likely to remain with their first employer.

In equation 3 of Table 3 an additional variable is added which is the difference between the log of the current wage (which varies with time) and a log predicted wage. The predicted wage is obtained by the formula in Table 1 which uses the estimated coefficients from a log wage equation for the starting wage for this sample. Those individuals who were being paid less than their predicted alternative wage were more likely to leave their employer as shown in both equations 3 and 4 of Table 3. None of the previous findings from equations 1 and 2 are altered very much.

In Table 4 the proportional hazard is re-estimated for various demographic groups of interest. Now the results change dramatically depending upon which sub-group is examined. Again, it is important to remember that some of the cell sizes are very small so care must be taken in interpreting the results in Table 4. Nevertheless, it is interesting to see how the results from the previous table change when the sample is divided into demographic categories of interest. For example, males, females, and blacks

who were high school dropouts had a shorter expected duration on the first job after they left school. However, being a male or black high school graduate had no effect on the duration of employment, while being a female high school graduate lowered the duration of employment. Male and black college graduates had longer expected durations of employment, while there was no effect of a college degree on the probability of females remaining with their first employer.

The differences by race and gender are even starker when one examines time varying regressors and the effect of training. For women, having additional children significantly lowered the expected duration of their first job relative to those women who did not have additional children. At the same time, there was no effect of children on the expected duration of male or black employment. Being married lowered the probability of leaving an employer for males and females but there was no effect of marital status for blacks. Finally, ON-JT and OFF-JT were insignificant determinants of the duration of employment for males and blacks. However, ON-JT increased the length of time in employment in the first job for females while OFF-JT increased their turnover probability.

When the sample is divided by educational attainment other interesting results emerge. For example, those who were high school graduates or had some post high school education and were covered by a collective agreement, were less likely to leave their employer. For the sample as a whole there was no difference in the probability of leaving an employer between males and females. However, when the sample was divided by educational level, males



were less likely to leave their employer than females if they had less than a high school degree or if they had a college degree, but they were more likely to leave if they had some post high school education. In addition, being black raised the probability of leaving an employer only if the young worker had a high school degree. Race was not a significant factor for any of the other educational groups.

The number of children seemed to affect the duration of employment with the first employer only for high school graduates, while marital status was significant only for college graduates and high school dropouts. In addition, the unemployment rate was only significant for high school graduates. Finally, ON-JT appeared to lower the turnover probability if the respondent had a high school degree or less, while OFF-JT seemed to raise this probability for those with a high school degree. Given the small cell sizes one must be cautious in drawing conclusions on variables that are insignificant, but the different effects of variables of interest by race and gender are quite striking.

### Conclusions

This paper has focused on the link between training and the probability of leaving an employer. A high percentage of ON-J-T spells begin after young workers have remained with their employer for at least one year. This seems to be consistent with a job matching story where firms(workers) make a determination within the first 6-12 months on whether or not there is a match, and if yes, the firm then invests in more costly formal ON-J-T. In contrast to the pattern associated with ON-J-T spells, almost 60 percent of

spells of OFF-J-T begin within the first year with an employer. This may be due to employees going outside the firm to obtain training that they need for their current job, or employees deciding that there is not a job match and seeking a training program that will allow them to leave their current employer and get a better job.

There are significant differences in the patterns of job mobility by race and gender. Overall there is no difference in the probability of leaving an employer by gender. However, when the sample is divided by race, gender, and educational attainment there are important differences between males and females. For example, children appear to have little affect on the probability of males leaving an employer. At the same time, they have a significant and positive effect on the probability of women not remaining with their employer. Among high school dropouts and college graduates, women are more likely than men to have shorter spells in their first job, but there is no gender difference among high school graduates. In contrast, among those who have had some post high school education men are more likely to leave their employer.

Evidence presented in Lynch (1992) indicated that on-the-job training for young workers in the U.S. appeared to be quite firm specific whereas off-the-job training appeared more general. The results presented in Tables 3 and 4 seem to reinforce this conclusion. Those with on-the-job training are more likely to remain longer with their employer which would be consistent with firm specific training. Although women are less likely to receive on-the-job training the finding of on-the-job training lowering the probability of leaving

an employer was particularly strong for women. This may be because women realize that many employers are reluctant to invest in their training so that when they do receive company training they are more likely to remain with that employer. Those who obtain off-the-job training are more likely to leave their employer and this would be consistent with off-the-job training being more general. Again, when the sample is divided by race, gender and educational attainment we see that the off-the-job training variables are only significant in the equation for females.

Overall it appears that blacks are more likely to leave their employer but this is only true for those blacks who received just a high school diploma. There does not seem to be any significant difference in the results for hispanics relative to whites. Finally, there does seem to be some evidence that blacks who receive some on-the-job training have longer expected job durations in their first job.

While this paper has attempted to shed new light on the skill formation process of young workers and the consequences of this on their patterns of mobility there are still many issues that remain unresolved. This paper has modeled the determinants of the duration of the first job after school, not subsequent employment. As the NLSY age future research should examine how some of the gender, race, and educational differences change over time.

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TABLE 1 - SAMPLE CHARACTERISTICS (N=2522)

Variable:

Urban	72%	Urate (6-8.9%)*	36%
# of Children*	.15	Urate (9+ %)*	37%
Disabled	4%	ON-JT*	3.7%
Married*	22.7%	OFF-JT*	11.8%
Union	15.4%	Apprentice*	1.1%
Black	21.2%	Year of entry 1979	16%
Hispanic	16.9%	" 1980	21%
Male	47.9%	" 1981	19%
Years of School	12.6	" 1982	23%
Tenure by year 4 (in 1st job (wks))	72.5	" 1983	21%
Log real wage*	\$1.61		
Log predicted real wage <sup>1</sup>	\$1.50		
% left first employer by 4th year	73.8%		

Notes:

\* Denotes time-varying covariate

<sup>1</sup> This predicted wage is created from the following equation:

Log predicted starting wage = .64 + (.14\*y1979) + (.07\*y1980) + (.04\*y1981) + (.03\*y1982) + (.21\*oc1) + (.06\*oc2) + (.03\*oc3) + (.03\*oc4) + (.05\*oc5) + (.03\*oc6) - (.03\*oc8) - (.06\*in1) + (.07\*in2) + (.05\*in4) - (.15\*in5) - (.07\*in6) - (.12\*in7) - (.33\*in8) - (.1\*in9) - (.05\*in10) + (.13\*male) + (.04\*urban) + (.02\*#children) - (.03\*disabled) + (.02\*marital) + (.15\*union) + (.02\*hispanic) - (.06\*blk) + (.06\*school) - (.03\*medium urate) - (.06\* high urate). All of the explanatory variables are evaluated at the first year of entry.

**TABLE 1 (continued)**

<u>Industry</u>		<u>Occupation</u>	
Ag., Forestry, Fisheries, & Mining	4.0%	Professional & Technical	9.8%
Construction	5.5%	Managers	3.2%
Manufacturing (omitted category)	17.1%	Sales	5.4%
Transport & Utilities	3.4%	Clerical	24.0%
Wholesale & Retail	31.2%	Craft	8.6%
Finance, Real Estate, & Insurance	5.6%	Operatives	14.7%
Business & Repair Services (omitted category)	6.0%	Laborers & Farmers (omitted category)	11.4%
Personal Services	6.2%	Service Workers	22.9%
Professional Services	17.2%		
Public Administration	3.8%		

**Percent with Training by Demographic Group**

	ON-JT	OFF-JT	Apprentice	N
Male	3.8%	11.3%	1.9%	1208
Female	3.7	12.1	0.3	1314
Black	2.2	11.3	1.3	535
Less H.S.	1.8	4.8	1.1	363
High School	2.2	16.2	1.3	1363
Post H.S.	4.5	10.1	0.6	439
College +	8.9	4.7	0.9	357



**TABLE 2 - CHARACTERISTICS OF PRIVATE-SECTOR TRAINING****Completed Tenure by % with Training by Type**

Completed Tenure	% of sample	ON-JT	OFF-JT	APT
1 - 26 weeks	33%	1.3%	10.6%	0.7%
27 - 52 weeks	20%	1.5%	11.8%	0.9%
1 - 2 years	19%	2.6%	15.6%	2.4%
2 - 3 years	7%	6.6%	23.6%	0.5%
3 - 4 years	21%	8.1%	11.7%	0.8%

**Conditional on having training in 1st job - when did it begin?**

Year	ON-JT	OFF-JT	APT
During 1st year	39.8%	57.2%	69.4%
1st - 2nd year	25.6%	14.9%	8.3%
2nd - 3rd year	18.8%	18.1%	8.3%
3rd - 4th year	15.8%	9.7%	13.9%

**TABLE 3 - DETERMINANTS OF THE PROBABILITY OF LEAVING EMPLOYER**

Variable	Eq. 1	Eq. 2	Eq. 3	Eq. 4
Urban	-.06 (-1.31)	-.06 (-1.25)	-.04 (-0.95)	-.04 (-0.85)
# Children*	.09 (1.59)	.09 (1.49)	.09 (1.54)	.08 (1.33)
Disabled	.22 (1.98)	.24 (2.10)	.22 (1.96)	.24 (2.10)
Married*	-.22 (-3.44)	-.22 (-3.41)	-.21 (-3.27)	-.21 (-3.25)
Union	-.28 (-4.34)	-.22 (-3.32)	-.27 (-4.16)	-.21 (-3.21)
Black	.14 (2.41)	.11 (1.98)	.11 (1.99)	.09 (1.50)
Hispanic	.05 (0.83)	.09 (1.36)	.04 (0.60)	.07 (1.19)
Male	-.05 (-1.20)	-.06 (-1.19)	-.06 (-1.32)	-.06 (-1.17)
Less than H.S.	.69 (8.51)	.61 (7.32)	.67 (8.22)	.58 (6.95)
High School	.26 (4.16)	.23 (3.62)	.23 (3.65)	.18 (2.89)
College	-.24 (-2.79)	-.13 (-1.35)	-.24 (-2.73)	-.11 (-1.11)
Medium Urate*	-.17 (-2.95)	-.16 (-2.74)	-.18 (-3.13)	-.17 (-2.88)
High Urate*	-.17 (-2.74)	-.17 (-2.70)	-.17 (-2.83)	-.17 (-2.71)
ON-JT*	-.40 (-2.62)	-.30 (-1.98)	-.32 (-2.12)	-.22 (-1.46)
OFF-JT*	.10 (1.51)	.09 (1.40)	.11 (1.70)	.10 (1.49)
Apprentice*	.03 (0.13)	.08 (0.40)	.10 (0.48)	.14 (0.67)
Log Wage Diff*	-	-	-.64 (-10.04)	-.64 (-10.06)
Industry & Occupation dummies	no	yes	no	yes
Log Likelihood	-14697.7	-14640.7	-14644.4	-14592.0

Notes:

\* denotes time varying covariates

Equations also include dummy variables for year of entry

**TABLE 4 - DETERMINANTS OF THE PROBABILITY OF LEAVING EMPLOYER  
BY DEMOGRAPHIC GROUP**

Variable	Males	Females	Blacks
Urban	-.06 (-0.94)	-.03 (-0.37)	-.01 (-0.11)
# Children*	-.08 (-0.71)	.20 (2.83)	.09 (0.89)
Disabled	-.14 (-0.67)	.41 (3.01)	.53 (2.40)
Married*	-.36 (-2.84)	-.13 (-1.66)	-.05 (-0.27)
Union	-.15 (-1.73)	-.44 (-4.40)	-.47 (-3.67)
Black	.10 (1.30)	.10 (1.17)	-
Hispanic	.03 (0.35)	.02 (0.26)	-
Male	-	-	.05 (0.44)
Less than H.S.	.39 (3.48)	.93 (7.72)	.55 (3.14)
High School	.08 (0.81)	.31 (3.74)	.19 (1.52)
College	-.53 (-3.79)	-.04 (-0.32)	-.54 (-2.40)
Medium Urate*	-.18 (-2.27)	-.16 (-2.02)	-.15 (-1.28)
High Urate*	-.23 (-2.66)	-.10 (-1.17)	-.34 (-2.35)
ON-JT*	-.27 (-1.19)	-.36 (-1.70)	-.66 (-1.43)
OFF-JT*	.03 (0.27)	.19 (2.09)	.08 (0.57)
Apprentice*	-.03 (-0.13)	.61 (1.21)	-.27 (-0.65)
Log Wage Diff*	-.55 (-6.18)	-.79 (-8.44)	-.62 (-4.56)
Log Likelihood	-6337.3	-6879.4	-2546.9
Number of Obs.	1208	1314	535

**TABLE 4 - DETERMINANTS OF THE PROBABILITY OF LEAVING EMPLOYER  
BY DEMOGRAPHIC GROUP (continued)**

Variable	< H.S.	H.S.	Post H.S.	College
Urban	-.26 (-2.01)	-.03 (-0.54)	-.03 (-0.24)	.08 (0.50)
# Children*	.06 (0.40)	.12 (1.61)	.11 (0.88)	-.03 (-0.13)
Disabled	-.28 (-0.92)	.40 (2.80)	-.25 (-0.77)	.68 (1.90)
Married*	-.53 (-2.81)	-.04 (-0.52)	-.16 (-1.08)	-.55 (-3.22)
Union	-.19 (-1.12)	-.20 (-2.47)	-.46 (-2.70)	-.32 (-1.55)
Black	.02 (0.12)	.15 (2.03)	.18 (1.33)	-.07 (-0.33)
Hispanic	.20 (1.45)	.01 (0.15)	-.08 (-0.54)	.10 (0.37)
Male	-.38 (-3.03)	.005 (0.08)	.22 (1.93)	-.32 (-2.26)
Medium Urate*	-.15 (-0.97)	-.18 (-2.38)	-.15 (-1.05)	-.12 (-0.74)
High Urate*	-.19 (-1.10)	-.19 (-2.34)	-.18 (-1.18)	-.08 (-0.48)
ON-JT*	-1.19 (-1.65)	-.35 (-1.34)	-.26 (-0.83)	-.12 (-0.48)
OFF-JT*	-.13 (-0.52)	.11 (1.41)	.21 (1.22)	.03 (0.08)
Apprentice*	.22 (0.43)	-.20 (-0.68)	.43 (0.83)	.58 (1.12)
Log Wage Diff*	-.34 (-2.30)	-.76 (-8.30)	-.84 (-4.84)	-.67 (-4.00)
Log Likelihood	-1625.1	-7450.2	-1921.5	-1288.9
Number of Obs.	363	1363	439	357