"Gender-Based Wage Growth Differentials: Does Job Mobility Play a Role?"

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May 5, 2011

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I. Introduction

One-third of American families rely on women as the primary breadwinner[1]. Even though women are significant contributors to their family's economic well-being, they continue to earn less on every dollar than men. After the Equal Pay Act of 1963, which outlawed separate pay scales for men and women using similar skills and performing work under the same conditions, women were earning approximately 60 cents for every dollar that their male counterpart earned[2]. Since then, the ratio of women's to men's earnings has only increased 18 cents. For full-time female workers in 2010, median earnings were 78.2 percent of men's median earnings. In terms of annual wages, women earned an average of $35,549 while the median earnings for men averaged $45,485. This wage gap is even more significant for minorities. African-American women earn only 68 percent of what men earn and Latina women earn only 58 percent of what their male counterpart earns.

Although the disparity in wages between men and women is significant, the trend is positive towards minimizing the gap. As older women exit the labor force, this statistic will continue to decrease as these female workers age 25 and older earned 79.4% of what men earned in 2005. Women under 25 on the other hand, earned approximately 93.2% of men's salaries. Another explanation for the diminishing gap in wages is due to women's increased participation in the labor force and continually growing investment in higher education.

One factor that is less often considered a contributor to the wage gap is the possibility for a difference in returns to job mobility for men and women. It is has been shown that young professionals are subject to both high job mobility and high wage growth early on in their careers. However, the difference in both mobility patterns and returns to mobility by gender has not yet revealed consistent results. This is an important issue because it is not clear whether the difference in wage growth is due to

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[1] Boushey H., Arons J., Smith L. "Families Can't Afford the Gender Wage Gap: Equal Pay Day 2010." Center for American Progress. April 20, 2010. Accessed February 2, 2011 from http://www.americanprogress.org/issues/2010/04/equal_pay.html
[2] US Department of Labor: Women's Bureau <http://www.dol.gov/wb/equal-pay/equal-pay-toolkit-20110412.htm>

a gender gap in the rate of return for the same type of mobility or because women are more likely to change jobs for a reason that usually has a lower rate of return. Some economists have found that although the mobility patterns may be similar for men and women the magnitude of returns to mobility differs greatly by gender (Loprest, 1992). Other studies such as Keith and McWilliams (1997) find little gender difference in the returns to job mobility when the reason for job change is taken into account. Based on the inconsistency of results and potential implication that this topic may have on the gender wage gap, this subject has proven to be important area of study in the field of labor economics.

This study will examine the returns to job mobility for men and women and the effect that the type of job mobility has on wage growth. This will be done by finding the rate of return that each type of job mobility has on wage growth and examining the differences in the mobility patterns of men and women. The remainder of this paper is organized as follows. Section II describes the theoretical framework that provides economic evidence that both job mobility and gender have an effect on wage growth. Section III explores the results of other literature that has analyzed the effect that the combination of these two variables have on wage growth. Section IV is a description of the sample data and section V explains the empirical model, development of results and estimation concerns. Finally, section VII discusses the conclusions that can be made from this analysis along with recommendations for further research.

II. Theoretical Framework

This study is based off the work of Keith and McWilliams (1997). The conclusion of their research is that women experience lower wage growth due to changing jobs for reasons that have inherently lower returns to wage growth, rather than any gender differences in the wage effect of mobility: such as discrimination. Wage discrimination in the labor market is said to exist if the prices paid by employers for given productive characteristics are systematically different for different demographic groups. Assuming that all firms make nondiscriminatory, profit-maximizing decisions, long-term discrimination

should theoretically not exist. Profit-maximizing employers would hire more women if they were able to be paid a lower wage rate for the same productivity. However, as more firms demand women workers, the wage for women would continue to be bid up until it is equal to the wage demanded by men and firms would become indifferent to hiring either a man or woman. With women continuing to earn 22 cents less on every dollar, we can conclude that this is not the case.

The wage growth estimation model from Keith and McWilliams (1997) was chosen for a few key reasons, the main being a focus on determining the annual wage growth. Also, the separate analysis of the wage effects by gender and the emphasis on the importance of distinguishing between the types of job mobility are additional factors that led to the selection of this specific model. To accurately test the hypothesis of whether gender and the type of job mobility plays a role in determining wage growth in the early years of an individual's career, the analysis needs to include these main factors to draw a final conclusion.

Other studies either do not account for the type of job mobility (Loprest, 1992), focus more on job search than solely job separation (Keith and McWilliams, 1999) or do not account for workers entering the labor force with minimal experience (Hilmer and Hilmer, 2004). Many of the papers use a similar model with slight differences in the estimation method such as Ruiz, et al. (2004) and Del Bono and Vuri (2008). This study will aim to determine if in fact the type of job mobility has a greater effect on wage growth than gender alone.

It is important to study the various types of job mobility because past research has found that the different reasons for job separation each present varying returns. Bartel and Borjas (1981) found that "job-related quits have a greater positive impact on wage growth that non-job-related quits." This is intuitive as those workers who quit for job-related reasons are likely doing so because the current job is paying an unsatisfactory wage, limits opportunities for growth or fails to provide acceptable benefits. If these are the sole reasons for job separation, the worker will not move to a new position unless it

satisfies one of the problems that initially led to the job separation (i.e. pay's a higher wage than the individual's previous position, providing opportunities for growth, etc.). When gender is included into the analysis, many studies find that the mobility patterns of men and women differ significantly when the type of job separation is taken into account. Ruiz, et al. (2004) finds that women appear to be more vulnerable to employer-initiated job separations than males. Also, males seem more inclined to employee-initiated quits, or leaving their job voluntarily. More analysis of past research will be examined below, however, it is important to note how all of these factor have proven to play a role in determining wage growth.

The dependent variable being analyzed in this study is the difference between the log of the hourly wage at time $t+3$ and the log of the hourly wage at time t, where t refers to the year that the individual enters the labor force. By analyzing the change in the logged wages, a better estimate will be provided of the non-linear effect that job mobility and gender have on wage growth. The explanatory variables in this wage growth equation include the log of the hourly wage at time t, the four potential reasons for job separation (layoffs, discharges, family-related quits and non-family-related quits) and other various demographic characteristics.

The reasons for job separation can be separated into two categories: voluntary and involuntary quits. These are likely to have different directional effects on wage growth. There is consistent evidence that voluntary quits increase wage growth while involuntary, employer-initiated separations decrease wage growth relative to staying with the same employer[3]. With regard to voluntary quits, it is important to distinguish between family-related and non-family-related quits because they are likely to have different impacts on wage growth. In most cases, family-related quits occur for reasons that are not motivated by an increase in wage such as an increase in the number of children or a spouse moving jobs. These reasons will likely cause the individual to either drop out of the labor force (in which case the data

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[3] The wage effect of quits and layoffs are examined in Blau and Kahn (1981), Flinn (1986), Ruhm (1987), Antel (1986;1991) and McLaughlin (1990;1991).

would not be included in this study) or experience a fall in the number of hours worked or the wage rate as the decision to move was not purely motivated by receiving higher pay. Therefore, we expect to see a negative impact on wage growth if an individual quits for family-related reasons.

Non-family-related quits encompasses a large category of other reasons such as quitting to looking for or take another job, working conditions, illness or injury and returning to school. Since this category is very broad, it may have an ambiguous effect on wage growth. Quitting for an injury or Illness for example is likely to have a negative effect on wage growth as the worker will have to cut back on hours or change to a less skill-intensive position. On the other hand, quitting to take another job may have a positive impact on wage growth as the individual would likely be switching jobs in order to obtain a higher wage rate, better benefits, etc. The best solution to determine the true effect of non-family-related quits would be to separate out job-related and non-job-related reasons. However, due to the limitations of the data, this is not feasible.

Since this study analyzes young workers who experience high job mobility, it is likely that a non-family-related quit may not be motivated by wage and simply by preferences. It is very common for individuals to begin their career in a position that is not entirely in line with the worker's desires but at the time, is satisfactory. For this reason, we expect younger workers to make many job moves early on in order to determine what career or position is well suited for the individual. As the job switching costs are relatively low early on, younger workers may choose to move laterally or even downward in their career path in order to find a position more in line with their preferences. Based on this, we would expect both positive and negative impacts on the wage growth for non-job-related quits. For this specific demographic group, it would not be surprising if the overall effect is negative.

Similar to family-related and non-family-related quits, involuntary quits are expected to have a negative effect on wage growth. Most individuals are not actively job searching for a position that provides a higher wage while they are currently employed. Depending on the lead time that a worker

has from the time they find out they will be terminated until the day they must leave (usually not a long-period), a position waiting for them with higher or even equal pay is not likely. Although being laid off includes some anticipated reasons such as the end of a temporary job or a program ending the overall impact on wage growth is still expected to be negative. Individuals, especially younger workers, are most likely working in a temporary position or unstable job because nothing else was available for them at the time. The change of moving immediately to a higher paying position is not great.

Intuitively, discharges are also likely to have a strong negative impact on wage growth. Not only is the worker not usually expecting to be terminated, but there is a strong probability that the individual does not have another more preferred position lined up (or the job change would have been voluntary). For these reasons, both types of involuntary quits are expected to have a negative impact on wage growth in the early years of an individual's career.

The various demographic characteristics included in this study are all measured as "change" variables, or the difference in these variables from t to $t+3$. These include the increase in the number of children, a change in marital status, a change in the number of hours worked and the change in the achievement of a higher degree.

An increase in the number of children is likely to have a negative impact on wage growth as children provide a significant opportunity cost of time for working parents. When the children are born, it may be necessary for one parent to stay home and raise them until the child is old enough for day-care or schooling. If a woman cuts back on hours to raise her children, her wage is likely to grow much slower than an individual who is able to commit fully to the position. On the other hand, as the size of the family increases, the need for a higher household income also increases and the opportunity cost of not working may grow significantly for both parents. In this scenario, we could expect to see the increase in the number of children to have a positive effect on wage growth. This study does not take into account workers that left the labor force in the three year period, many of which may have dropped out in order

to raise children. This may lead to a sample selection bias which is further explained in the *Estimation Concerns* section of this paper.

A change in marital status may have a similar estimation concern as the increase in the number of children. Those individuals who were single when entering the labor force and became married and dropped out of the labor force within three years are not included in this analysis. However, the effect of a change in marital status from single to married is likely to have a negative effect as, similar to children, having a spouse increases the opportunity cost of time spent working and may slow down the rate of wage growth. In addition, as workers become married they must use a joint decision-making process to allocate the time each individual has and to agree on who does what in the household. For example, if a woman gets married and the household income is now increased, it could serve to make her indifference curve steeper, causing her to reduce her hours of work and increase her hours at home.

Lastly, the attainment of a higher degree is expected to have a significant positive impact on wage growth due to the basics of human capital theory. Similar to the initial cost necessary for migration and the search for new jobs, the investment in education is made in hope and expectation that the decision will pay off well in the future. A worker with more knowledge and skills generates a greater amount, or stock, of productive capital. The value of the capital is derived from how much these skills can earn in the labor market and individuals with a higher degree (or greater stock of productive capital) are expected to receive a higher wage rate.

This study will expand on the research conducted by Keith and McWilliams (1997) by looking at the most recent NLSY data (97) in order to quantify the effect that the type of job mobility has on wage growth and determine whether or not gender plays a key role in either the magnitude or direction of this impact.

III. Literature Review

Numerous empirical studies find evidence of high job mobility in the first few years of an individual's career. This mobility seems to pay off as wage growth is also high for young workers. However, discrepancies in the literature exist when trying to discern the effect that gender has on the differences in wage growth, mobility patterns and the type of mobility.

Loprest (1992) studies the extent of differences in job mobility and returns to job mobility for males and females. She examines the differences in job characteristics by gender in attempt to account for the discrepancy in wage growth. In particular she focuses on the differences in two job characteristics before and after the job change: hours worked and occupation. Her conclusion is that women, on average, have a 19 percent lower annual wage growth than men relative to staying with the same employer and over a 50 percent lower wage growth when changing jobs. Instead of testing whether the type of job mobility matters in determining wage growth, Loprest (1992) tests whether the differences in hours worked and occupation can account for any difference in wage growth with job changes. Loprest is unique in the fact that she does not disaggregate the various types of job mobility into voluntary and involuntary. This is significant because her results are not easily compared and confirmed by other studies that find little gender differences in the wage growth from mobility when the reason for job change is taken into account. It is possible that by not differentiating the types of mobility, the wage growth disparity remains so large. Keith and McWilliams (1997) on the other hand find a 35 percent difference in wage growth when accounting for the type of job mobility.

Keith and McWilliams (1999) not only study the returns to job mobility but also the effect that the job search process has on wage growth for young men and women. They expand on the fact that men and women's search behavior could vary for any of several reasons including differences in intensity of the search effort, reservation wages or wage offer and other functions. They find that men are more mobile than women (higher separation rates) and men suffer more from involuntary mobility (although

contradictory to Ruiz, et al. (2004) who finds that women who are laid off suffer the strongest wage discrimination).

Ruiz, et al. (2004) and Keith and McWilliams (1997) all examine the patterns and returns to mobility for young men and women but disaggregate mobility into employer-initiated and employee-initiated separations. Both studies further disaggregate involuntary separations into layoffs and discharges and voluntary separations into family-related and non-family-related quits. Keith and McWilliams (1997) find that gender differences exist in the type of job separation, where men are more likely to separate for an employer-initiated reason (such as a layoff or discharge) and women are more likely to separate for an employee-initiated reason (mainly family-related). With the exception of family-related quits, the gender differences in the types of job separation are not large. After running separate regressions by gender, they find that men's wage growth from quitting is 35% higher than women's and that the wage growth associated with family-related quits is significantly lower than non-family-related quits for both men and women. As previously discussed, workers who quit for family-related reasons are likely to experience a smaller wage growth as their reason for job change is not motivated by a higher wage. In fact, when a worker changes jobs due to an increase in children, result of a spouse's job change or other family responsibility such as an illness, it would be fortuitous if the new job provided a higher wage. After all, if the worker knew changing jobs would increase their wage, they would quit for a non-family related reason and would be qualified under a different category in this study.

Ruiz, et al. (2004) also finds that family responsibilities have a negative impact on job mobility. In addition, they try to explain part of the wage gap by incorporating differences in human capital characteristics such as education and experience. They find that women generally receive higher returns from education than men given their mobility status and for both genders, voluntary movers profit more from their education. The effect of experience follows the same positive relationship with wages and pattern as that of education: women receive higher returns and so do voluntary movers. Their main

conclusion is that women who voluntarily leave their job to obtain a more preferred job (the characteristics of a more preferred job is not explicitly explained) are expected to suffer very little, if any, wage discrimination and females who are laid off suffer the strongest wage discrimination.

Hilmer and Hilmer (2010) add to the literature by focusing on the job mobility patterns and resulting salary effects for academic economists. Job tenure plays an important role in this analysis, as academic mobility is somewhat different from other industries. In most industries, an individual is not given tenure where the firm, or academic institution, gives up the right to terminate that person without good cause. They find that for women, job movements tend to be in the downward direction (as compared to a lateral or upward/promotion move) and first moves occur at significant points in the tenure process. For men, the timing of the first move is similar but a greater percentage is able to move laterally or even upward. For both genders there are negative returns to seniority but the estimated effect is nearly twice as large for women. Women are penalized for moving the first time early in their career but rewarded for moving the first time later: the results are opposite for men. They conclude that although the data do not allow them to explain why the differences exist, they hypothesize that men and women move for dissimilar reasons. Men tend to move more often to reap economic rewards and women tend to move more often for non-pecuniary reasons.

Theory suggests that individuals will remain in their current job unless they receive a wage offer whose discounted present value is greater than the discounted present value of their current wages. If we assume that men and women have similar characteristics and face similar wage distributions and offer rates, we would expect them to change jobs with the same frequency and experience the same wage growth on average with each job change. Loprest (1992) points out several reasons why this may not be true. First, men and women have different job preferences between wages and non-financial aspects of the job. For example, women may prefer flexible schedules, less hours, or jobs that involve lower skill atrophy in order to be able to uphold certain household responsibilities. Also, women may

not have access to certain higher-paying jobs due to discrimination. Employers may perceive that women are more likely to leave their job and therefore not want to invest in costly job-specific training.

Even with consistent findings by many of the studies, different assumptions made regarding the criteria of the data included in the analysis in the models may yield significantly different results. For example, the impact of mobility on wage growth is likely based on the assumption that the analysis should include full-time and/or part-time workers. Part-time jobs have much lower switching costs as compared to full-time positions that may also include retirement packages and benefits. An individual who is laid off from a full-time position may have greater negative impact on wage growth than an individual who is laid off from a part-time position where the investment in skills made by the employer is much lower. Loprest (1992) tests the difference in wage growth for full-time and part-time workers and finds that the differences between men and women in wage growth when changing to part-time positions accounts for 19.6 percent of the disparity in growth associated with job change. Loprest explains that this may be due to the fact that women are more likely to make this transition and that a larger wage decrease is associated with this type of job change for women than for men.

The vast amount of literature proves that the topic of gender differences in wage growth and job mobility has been studied extensively. However, there still remain multiple aspects of this relationship that invite future research. This study will differ by incorporating a more recent data set (NLSY97 versus NLSY79). This is significant because of the changing demographics of the labor market. As older women exit the labor force, the gender wage gap is continuing to decrease. Female workers age 25 and older earned 79.4% of what men earned in 2005 while women under 25 earned approximately 93.2% of men's salaries. Incorporating a more recent data set will allow this study to determine and verify whether the changing generation is contributing to the narrowing of the wage gap.

As other research has confirmed, the type of job mobility does indeed play a role in the determination of wage growth. This study will therefore include four reasons for job change in the

analysis and will include only the young individuals who are no longer in schooling, working full-time in the labor force and have exhibited one or no job changes in their first three years of work. Part-time workers are likely to face different career profiles and restricting to full-time employees is designed to make the female and male samples are comparable as possible. With all of these factors taken into consideration, this research will be able to better accurately measure the true effect that a specific type of job separation has on the wage growth of an individual. By excluding individuals with more than one job change there is some question as to whether these results are representative of the entire population and this will be addressed later in the *Estimation Concerns* section.

IV. Methodology: The Sample

To analyze the effect that job mobility and gender have on wage growth, the National Longitudinal Survey of Youth data is examined. The NLSY97 consists of a nationally representative sample of approximately 9,000 youths who were 12 to 16 years old as of December 31, 1996. The first year of observation is 1997 and this study includes observations through 2008.

Specific criteria need to be met for each individual to be included in the data set. First, each individual must have two wage observations: one at *t*, entrance to the labor force, and one at *t+3*, three years after entrance into the labor force. The year of entry is defined as the first year that the individual is no longer in school and is receiving compensation from working full-time (35 hours or more a week). The NLSY97 data did not have a distinction for the worker's main CPS job. Therefore, in this study, the first job in the year of observation is designated as the "main job". Although this may lead to estimation concerns as the first job may not necessarily be the individual's main job, including only full-time workers aims to correct for this assumption.

The reason for job mobility plays a significant role on wage growth and is summarized into one of four main reasons. The reason for job change is measured at any time between *t* and *t+3*. Although

many individuals had more than one job change over this time period, they were not included in the study. There are many reasons for their exclusion, the main being for the simplification of the analysis. As the goal of this research is to determine the effect that the specific types of job mobility have on wages, it is imperative to be able to precisely measure the effect that each type of job change has on wage growth. If a worker changed jobs in one year for family-related reasons and was laid off from their job in the following year, the three year change in wage growth would fail to differentiate the effect that each job separation had on the overall change in wages. Therefore, only workers who changed jobs once (or remained with the same employer) were included and although this reduces the size of the sample, it also eliminates the ambiguity and biases associated with the combined effect of multiple types of mobility during the sample time period. The four reasons for job separation are as follows:

1. Layoff- Including plant closings, the end of a temporary/seasonal job or the program ending.

2. Discharge- Including being fired.

3. Family-related quit- Including pregnancy or other family reasons.

4. Non-family-related quit- Including reasons such as quitting to look for another job, returning to school, working conditions, illness/injury or any other reason not covered above.

Other variables included in the data set are mainly control characteristics such as hours worked per week, achievement of a higher degree, marital status and number of children. Descriptive statistics for males and females are provided in the Appendix in Tables I and II respectively. Approximately 60 percent of the individuals observed are male and approximately 40 percent are female. Since the regressions will be estimated separately by gender, and the reference group is the individual who do not change jobs, this uneven distribution does present a major concern. Descriptions for the complete list of variables used are included in the Appendix as well.

Many of the statistics are similar for men and women but there are a few notable differences. The mean beginning wage for men and women differ by approximately 64 cents, with hourly

compensation for men averaging $13.35 per hour and the hourly compensation for women averaging $12.71 per hour[4]. This equates to only a five percent wage gap between men and women when entering the labor force. This statistic is much more in line with the current national estimations of the wage gap of young individuals (seven percent) as compared to older studies such as Keith and McWilliams (1997) who find a beginning wage disparity of 14 percent.

Almost 46 percent of this sample changed jobs once in the first three years of entering the labor force with approximately 22 percent for men and a total of 24 percent for women. The distributions of job changes can be seen in figure one. As one would predict, the percentage of individuals who quit voluntarily for non-family-related reasons was the highest, around 10 percent for both genders, and family-related quits were much higher for women than for men: 6 percent and .01 percent respectively. 7 percent of men were laid off from their job while only 3.5 percent of women experienced a layoff.

Figure 1

Job Separation Statistics- % of Total Separations		
	Male	Female
Layoff	31.96%	14.29%
Discharge	15.98%	17.29%
Family-related quit	4.12%	24.81%
Non-family-related quit	47.94%	43.61%
n	194	133

Human capital differences exist between men and women with an average of only 16 percent of men earning a higher degree (more than high school diploma) and 28 percent of women achieving a higher degree. Also, both genders exhibit a large percentage of individuals whose marital status changes from single to married in the three years after entrance into the labor force: 78 percent for men and 69 percent for women.

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[4] All wages have been converted to real wages using the CPI-U (1982-1984 = 100).

The key statistics that are relevant to this study are the size of the initial wage disparity and the difference in the wage growth over time between men and women. When entering the labor market, women experience only a 5 percent gap relative to men's earnings. Three years later, the gap has increased to 10.5 percent where the average annual wage for women is $14.74 per hour and $16.46 per hour for men. The results indicate that men's wages increased 23.26 percent in three years while women's wages increased only 15.93 percent. On average, in the first three years of an individual's career, women's wages grow 7.33 percent lower than men's or about 2.44 percent lower per year. The goal of this study continues to be determining whether the type of job mobility can explain this 7.33 disparity. Are women changing jobs for a reason that has inherently lower wage growth or is there some other factor, such as discrimination, that explains this increasing gap?

V. Methodology: The Model

The ordinary least squares (OLS) method will be used to estimate a logged wage equation that Keith and McWilliams (1997) utilize in their analysis. Similar to their analysis, this study will estimate separate wage equations for males and females. In addition, the regression will be run for the entire data sample to determine the effect that each variable has on wage growth without separating out the effect by gender. The specific empirical model will be represented as follows:

$$\Delta log Wi = \beta\ log Wi,t + \beta\ Ri + \beta\ \Delta Xi + ei*$$

The dependent variable is the difference between the log of the hourly compensation at t and at the log of the hourly compensation at $t+3$, where t refers to the year of labor market entry. $W_{i,t}$ is the individual's starting wage in the initial period. R_i is a vector of dummy variables that indicate a reason for job change between t and $t+3$. X_i is a vector of control characteristics including change in the number of hours worked per week, change in marital status (either from single to married or married to single), increase in the number of children and attainment of a higher degree. The estimations of the models are

shown in Table III in the Appendix. As in most standard specifications, by differencing or accounting for the change in variables all non-time-varying characteristics are removed from the equation. In this model, there are no non-time-varying variables, however, these characteristics such as race and schooling level may influence wage growth and wage levels.

Results

The results from the estimated regressions show many important findings relating to the effect of job mobility on gender-based wage growth differentials. For both genders, relative to staying with the same employer, wage growth is negatively affected by changing jobs, regardless of the type of job separation. This may seem counterintuitive as individuals usually change jobs in order to attain a higher wage although this sample does not necessarily embody the same career profile as workers who have spent a longer time in the labor force. Many of these individuals are likely to make lateral movements while the job switching costs are low in order to try and satisfy their career preferences. The employer-initiated job separations (layoffs and discharges) are likely to slow the growth of wages relative to an individual who stays with the same employer and this is found to be the case in this study. Although not statistically significant for women, men who are laid off from their job experience a 18.6 percent lower wage growth and men who are discharged from their previous job experience an almost 18 percent lower wage growth than their counterpart who stayed with the same employer.

Also notable are the results for family-related quits. This is the only type of job separation that is statistically significant for women and not for men. Women exhibit a 15.5 percent lower wage growth if quitting for family-related reasons. However, contrary to expectations, the increase in the number of children has no statistical impact on women while men experience a 6 percent lower wage growth when the number of children in the household increases. This outcome can be explained by the parameters that must be met for an individual to be included in this study. As previously discussed, it is very

probable that women who have children after they enter the labor force are likely to drop out in order to raise their families and will therefore not be included in the sample. This is likely to place a bias on the estimation for family-related quits and the true negative effect on wage growth may be understated. If the individuals who quit for multiple years were included in the analysis, the true effect that a family-related quit has on wage growth may prove to be even greater.

A large percentage of workers became married in the first three years of work however the impact is not statistically significant for women. Men who got married in the first three years of working experience an 8 percent lower wage growth while men who were already married when entering the labor force and single three years later experienced an 11 percent lower wage growth relative to men whose marital status did not change. This is difficult to explain as we would expect men who do not have a spouse would have more time to devote to work, however, a male who is no longer married after three years may experience an increase in household demands, such as children previously taken care of by a spouse.

The change in hours has a negligible impact for both genders while the attainment of a higher degree provides a significant increase in the wage growth for men and women at 25 percent and 20 percent respectively. Although contrary to the results found by Ruiz et al. (2004) that women experience greater returns from higher education, these results are in line with expectations that an increase in human capital should yield a corresponding large increase in the wage growth. This disparity in the effect that education has on wage growth is significant because instead of contributing to narrowing of the overall wage gap, it actually shows that the wage gap is widening as both men and women attain higher degrees.

All of these results provide a baseline for determining what factors affect wage growth. However, the true question remains as to whether job mobility plays a significant role in determining the reason for gender-based wage growth differentials. The results from the combined regression

provide the most telling results as all types of job separation are significant and have a negative effect on wage growth. Those workers who experience a layoff or discharge exhibit a lower wage growth at 13.5 and 13.8 percent lower respectively. Family and non-family related quits also have strong negative impact on wage growth with these annual wages growing 20.81 and 9.67 percent lower respectively. Family-related quits exhibit the greatest negative impact on wage growth as expected. Although at first this may appear contrary to theory, one explanation for this result is due to the fact that the data does not separate out job and non-job related quits. If a worker quits voluntarily for a non-job-related reason, this may have a negative impact on wage growth. Also, these individuals exhibit different characteristics than more experienced workers and may move laterally many times before moving jobs solely for an increase in wage.

Estimation Concerns

As previously mentioned, there a few reasons to expect that this is not a completely random sample and a sample selection bias may be present. For instance, this study is only measuring an individual's wage at the time of entrance into the labor force and the wage three years later. It is not capturing the workers who left their first job and are no longer in the labor force (either because they returned to school, family-related reasons, working conditions, etc). These individuals are likely to be the same ones who suffered the largest wage loss by voluntarily leaving, but this research has excluded them from the estimation. Therefore, the full effect that job mobility has on wage growth is not being estimated with the current model. To address this concern, future research should look at a longer time period and incorporate those who left their job but later returned to the labor force in the set of wage observations.

Another concern with using OLS is the assumption the error term and the independent variables are uncorrelated. In this model, observations are being made on the same individuals in two separate

time periods. Therefore, the starting wage and wage three years from the initial period are likely to be correlated. When estimating the change in wage, the beginning wage is likely to be correlated with the error term. The starting wage is included in the model to capture the effect that the wage rates may not have the same coefficients over time. One type of estimation method that may provide a better explanation to this hypothesis is a Multinomial Logit regression. This type of method would be able to calculate the effect of being male or female on the probability of a job separation.

Lastly, this sample may not be representative of the entire population or even young workers entering the labor force. As high job mobility is prevalent for young workers, it is expected that many individuals in the data set would have multiple job changes. To allow for a more simplistic and measurable estimation of the effect that job mobility has on wage growth, individuals with more than one job change are not included in the estimation. This may present a bias for the true estimation of the effect of a job change as individuals who change jobs more than once may experience an effect of greater magnitude (either positive or negative) than workers who changed jobs only once. Future research that includes these individuals would provide a slightly different analysis as the effect of multiple job separations would be studied instead of the impact of one specific type of job separation. The former analysis would provide better representative results of the effect of job changes for young workers as the later analysis captures only the individual effect that each type of job change has on wage growth and does not take into account the effect of multiple transitions.

VI. Conclusions

This study focuses on wage differentials based on gender and the effect that job mobility has on this wage growth disparity. Descriptive statistics of the key variables also reveal key findings about the different characteristics of men and women in the labor force. The starting wage for women is almost 64 cents less than the starting wage for men at $12.71 and $13.35 respectively. Educational attainment was

another important difference between men and women. On average, only 16 percent of the men in the sample had a degree higher than a high school diploma while 28 percent of women had attained a higher degree. This seems to increase the disparity between wages even more as you would expect more educated women to be making more than their less educated male counterpart, increasing the wage disparity even further. The implications of this finding indicate that the returns to higher education are less for women than for men which is contradictory to the results found in other research (Ruiz et al., 2004). As discussed in the introduction, the increase in education for women is believed to be a reason for the closing wage gap. However, this data suggests that this is not the case and in fact, it increases the disparity even further.

For both genders, the impact of job mobility on wage growth is negative. Men experience significant lower wage growths if they are either laid off or discharged at 18.5 percent and 18 percent respectively. Although not significant for women, men also experience 11.5 percent lower wage growth if they voluntarily quit for a non-family-related reason. The only statistically significant type of job mobility for women was family-related quits and these women exhibit a 15.5 percent lower wage growth. Based on these findings, we can conclude that the type of job mobility does in fact have a different impact on wage growth and the magnitude and significance of this impact varies by gender. Even though this is not completely in accordance with the theory of mobility, involuntary job separations and family-related quits are expected, and do prove to have a negative impact on wage growth. Non-family-related quits encompass numerous reasons for job separation, some job-related and some not. The ambiguity of this reason is likely a major reason as to why the results are contrary to expectations as well as the previously discussed different career profile that younger workers exhibit.

Men and women exhibit similar rates of job separation but different mobility patterns. Men are more likely to be laid off while women are more likely to quit for family-related reasons. In addition, family-related quits exhibit the largest negative effect on wage growth. From this, it can be concluded

that the type of job mobility, rather than any specific gender differences, can explain a portion of the disparity in wage growth between men and women.

Future research on this topic is recommended both for confirmation of these results as well as an expansion of this study. Due to the limitations of the data, the main CPS job was not able to be determined and this may have impacted the accuracy of the wage estimates. Also, the inclusion of additional job characteristics such as union memberships, the type of industry and occupation and benefits available to employees may contribute to the explanatory power of this model. Eliminating the estimation concerns of only including individuals with one job change, a potential sample selection bias and the correlation of the error terms through the use of a different estimation method may also improve the robustness of these results.

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Appendix

Table I

Summary Statistics for Males				
	Mean	Std Dev	Min	Max
Hourly Wage at t	13.352	7.1481	3.72	76.59
Hourly Wage at t+3	16.458	9.0880	2.91	81.55
Wage change, t to t+3	3.105	8.7612	67.66	64.88
Reason for Job Change				
Layoff	0.070	0.2557	0	1
Discharge	0.035	0.1842	0	1
Family related quit	0.009	0.0948	0	1
Non-family-related quit	0.105	0.3071	0	1
Hours worked at time t	41.767	7.4580	35	140
Hours worked at time t+3	42.260	7.0244	35	90
Change in hours worked, t to t+3	0.494	8.8623	-101	50
Number of children, t	0.131	0.3995	0	2
Number of children, t+3	0.358	0.7134	0	6
Increase in the number of children	0.261	0.5784	0	6
Married at t	0.095	0.2936	0	1
Married at t + 3	0.798	0.4014	0	1
Single at t, Married at t+3	0.777	0.4166	0	1
Married at t, Single at t+3	0.074	0.2613	0	1
Achieved a higher degree, t to t+3	0.163	0.3696	0	1
Year of Entry into the labor force	2003	1.9157	1997	2005
Age	26.229	1.3817	24	28
Number of job changes	0.220	0.4143	0	1
N	*883*			

Table II

Summary Statistics for Females				
	Mean	Std Dev	Min	Max
Hourly Wage at t	12.711	6.1508	2.78	64.01
Hourly Wage at t+3	14.736	7.4292	2.01	88.71
Wage change, t to t+3	2.024	6.6776	56.31	75.59
Reason for Job Change				
Layoff	0.034	0.1812	0	1
Discharge	0.041	0.1986	0	1
Family related quit	0.059	0.2357	0	1
Non-family-related quit	0.104	0.3050	0	1
Hours worked at time t	40.375	4.1206	35	70
Hours worked at time t+3	41.161	5.0651	35	70
Change in hours worked, t to t+3	0.786	5.7066	-35	32
Number of children, t	0.398	0.7497	0	4
Number of children, t+3	0.729	0.9596	0	4
Increase in the number of children	0.344	0.5557	0	3
Married at t	0.145	0.3521	0	1
Married at t + 3	0.725	0.4469	0	1
Single at t, Married at t+3	0.691	0.4625	0	1
Married at t, Single at t+3	0.111	0.3141	0	1
Achieved a higher degree, t to t+3	0.282	0.4504	0	1
Year of Entry into the labor force	2003	1.8552	1997	2005
Age	26.325	1.3233	24	28
Number of job changes	0.238	0.4259	0	1
N	*560*			

Table III

	Men		Women		Combined	
OLS Regression: Three Year Wage Growth						
Intercept	1.4832	***	1.2422	***	1.3440	***
	(0.091)		(0.100)		(0.068)	
LogBegWage	-0.4970	***	-0.4534	***	-0.4641	***
	(0.033)		(0.037)		(0.025)	
Layoff	-0.1859	***	-0.0149		-0.1354	***
	(0.049)		(0.075)		(0.041)	
Discharge	-0.1794	***	-0.0703		-0.1382	***
	(0.067)		(0.067)		(0.049)	
FamQuit	-0.0275		-0.1555	***	-0.2081	***
	(0.139)		(0.059)		(0.057)	
NonFamQuit	-0.1157	***	-0.0584		-0.0967	***
	(0.042)		(0.044)		(0.031)	
ChgChild	0.0606	***	-0.0168		0.0319	*
	(0.023)		(0.026)		(0.017)	
ChgHours	-0.0013		-0.0041	*	-0.0019	
	(0.001)		(0.002)		(0.001)	
SingToMarr	-0.0799	**	-0.0218		-0.0465	*
	(0.036)		(0.034)		(0.026)	
MarrToSing	-0.1098	*	-0.0071		-0.0640	*
	(0.056)		(0.049)		(0.039)	
HigherDeg	0.2460	***	0.2024	***	0.2034	***
	(0.035)		(0.033)		(0.024)	
n	863		556		1419	
R-Square	0.2353		0.2264		0.2128	

Standard errors are in
parentheses

* Statistically significant at a 10% level
** Statistically significant at a 5% level
*** Statistically significant at a 1% level

List of Variables	
LogBegWage	The log of the hourly wage at *t*, where *t* is the year that the respondent entered the labor market, *t* = 1997, ... 2005.
LogEndWage	The log of the hourly wage at *t + 3*
LogChgWage	The difference between the logged wages at time *t* and *t + 3*.
WageGrowth	the percentage wage increase from time *t* to *t+3*
Reason Left Job	Vector of dummy variables that indicate a reason for job change between *t* and *t+3*.
Layoff	Laid off from job, plant closing, the end of a temporary/seasonal job, or the job training program ended
Discharge	Discharged or fired from job
FamQuit	Quit for pregnancy/family reasons
NonFamQuit	Quit for reasons other than family-related
BegChild	Number of children that the respondent had in the year he or she entered the labor market.
EndChild	Number of children that the respondent had three years later.
ChgChild	Increase in the number of children from time *t* to *t+3*
BegHours	The number of hours worked per week at the respondent's first job
EndHours	The number of hours worked per week at the respondent's job three years later
ChgHours	Change in the number of hours worked from *t* to *t+3*
BegMarried	Individual was married when entering the labor force
EndMarried	Individual was married three years after entry into the labor market
SingToMarr	Individual was single at time *t and not cohabitating*, and is married and cohabitating at time *t+3*
MarrToSing	Individual was married, spouse present at time *t*, and is not married and cohabitating at *t + 3*
HigherDeg	Achievement of a degree higher than a high school diploma, *t to t+3*
Entry	Year that the individual entered the labor force.
Age	The respondent's age on January 1 of the year that he or she entered the labor market.
JobChanges	Indicates the number of times an individual changed jobs, *t to t+3*

```
Data SenProj.WageData;
      Set work.new_data;

            IF R0536300 = 2 THEN Female = 1; Else Female = 0;
            IF Female = 0 THEN Male = 1; ELSE Male = 0;

      */Created variable for gender;

            Age = 2008 - R0536402;

      */Created variable for age;

            R1207800 = ((R1207800 * 218.056)/ 160.5);
            R2566300 = ((R2566300 * 218.056)/ 163);
            R3888000 = ((R3888000 * 218.056)/ 166.6);
            R5470100 = ((R5470100 * 218.056)/ 172.2);
            R7234100 = ((R7234100 * 218.056)/ 177.1);
            S1548300 = ((S1548300 * 218.056)/ 179.9);
            S2018400 = ((S2018400 * 218.056)/ 184);
            S3820200 = ((S3820200 * 218.056)/ 188.9);
            S5420100 = ((S5420100 * 218.056)/ 195.3);
            S7521300 = ((S7521300 * 218.056)/ 201.6);
            T0022000 = ((T0022000 * 218.056)/ 207.342);
            T2016900 = ((T2016900 * 218.056)/ 215.303);

      */ Convert to real waages using the CPI-U (1982-1984 = 100);

            IF R1207800 ~>0 THEN R1207800 = 0;
            IF R2566300 ~>0 THEN R2566300 = 0;
            IF R3888000 ~>0 THEN R3888000 = 0;
            IF R5470100 ~>0 THEN R5470100 = 0;
            IF R7234100 ~>0 THEN R7234100 = 0;
            IF S1548300 ~>0 THEN S1548300 = 0;
            IF S2018400 ~>0 THEN S2018400 = 0;
            IF S3820200 ~>0 THEN S3820200 = 0;
            IF S5420100 ~>0 THEN S5420100 = 0;
            IF S7521300 ~>0 THEN S7521300 = 0;
            IF T0022000 ~>0 THEN T0022000 = 0;
            IF T2016900 ~>0 THEN T2016900 = 0;

      */Created variables to remove I,N and V responses in hourly compensation;

            IF R1201400 < 8 AND R1207800 > 0 THEN DO; BegWage = R1207800; Entry = 1997; END;
            IF R1201400 >= 8 THEN R1207800 = 0;
```

```
        IF R2560000 < 8 AND R1207800 = 0 AND R2566300 > 0 THEN DO; R2566300 =
R2566300; BegWage = R2566300; Entry = 1998; END;
        IF R2560000 >= 8 THEN R2566300 = 0;


        IF R3881500 < 8 AND R2566300 = 0 AND R3888000 > 0 THEN DO; R3888000 =
R3888000; BegWage = R3888000; Entry = 1999; END;
        IF R3881500 >= 8 THEN R3888000 = 0;


        IF R5460600 < 8 AND R3888000 = 0 AND R5470100 > 0 THEN DO; R5470100 =
R5470100; BegWage = R5470100; Entry = 2000; END;
        IF R5460600 >= 8 THEN R5470100 = 0;


        IF R7224200 < 8 AND R5470100 = 0 AND R7234100 > 0 THEN DO; R7234100 =
R7234100; BegWage = R7234100; Entry = 2001; END;
        IF R7224200 >= 8 THEN R7234100 = 0;


        IF S1538000 < 8 AND R7234100 = 0 AND S1548300 > 0 THEN DO; S1548300 = S1548300;
BegWage = S1548300; Entry = 2002; END;
        IF S1538000 >= 8 THEN S1548300= 0;


        IF S2007700 < 8 AND S1548300 = 0 AND S2018400 > 0 THEN DO; S2018400 = S2018400;
BegWage = S2018400; Entry = 2003; END;
        IF S2007700 >= 8 THEN S2018400 = 0;


        IF S3808500 < 8 AND S2018400 = 0 AND S3820200 > 0 THEN DO; S3820200 = S3820200;
BegWage = S3820200; Entry = 2004; END;
        IF S3808500 >= 8  THEN S3820200 = 0;


        IF S5408900 < 8 AND S3820200 = 0 AND S5420100 > 0 THEN DO; S5420100 = S5420100;
BegWage = S5420100; Entry = 2005; END;
        IF S5408900 >= 8  THEN S5420100 = 0;


        IF S7509700 < 8 AND S5420100 = 0 AND S7521300 > 0 THEN DO; S7521300 = S7521300;
BegWage = S7521300; Entry = 2006; END;
        IF S7509700 >= 8 THEN S7521300 = 0;


        IF T0013000 < 8 AND S7521300 = 0 AND T0022000 > 0 THEN DO; T0022000 = T0022000;
BegWage = T0022000; Entry = 2007; END;
        IF T0013000 >= 8 THEN T0022000 = 0;


        IF T2015900 < 8 AND T0022000 = 0 AND T2016900 > 0 THEN DO; T2016900 = T2016900;
BegWage = T2016900; Entry = 2008; END;
        IF T2015900 >= 8  THEN T2016900 = 0;


    */Created variable for begining wage and year of entry;


        IF Entry = 1997 THEN EndWage = R5470100;
        IF Entry = 1998 THEN EndWage = R7234100;
```

```
IF Entry = 1999 THEN EndWage = S1548300;
IF Entry = 2000 THEN EndWage = S2018400;
IF Entry = 2001 THEN EndWage = S3820200;
IF Entry = 2002 THEN EndWage = S5420100;
IF Entry = 2003 THEN EndWage = S7521300;
IF Entry = 2004 THEN EndWage = T0022000;
IF Entry = 2005 THEN EndWage = T2016900;
```

*/Created variable for ending wage according to year of entry;

```
ChgWage = EndWage - BegWage;

ChgWage = ChgWage / 100;
EndWage = EndWage / 100;
BegWage = BegWage / 100;
```

*/Changed wages to terms of $;

```
IF BegWage < 2   THEN Delete;
IF BegWage > 100 THEN Delete;
IF EndWage < 2   THEN Delete;
IF EndWage > 100 THEN Delete;
```

*/Set lower and upper limits for wages;

```
LogBegWage = Log(BegWage);
LogEndWage = Log(EndWage);
LogChgWage = LogEndWage - LogBegWage;
```

*/Created variables to log the wage data;

```
IF Entry > 2005 THEN Delete;
IF Entry = . THEN Delete;
```

*/Deleted individuals who did not have two observations: at time t and t+3;

```
IF R0171200 ~> 0 OR R0171200 = . THEN R0171200 = 0;
IF R2037700 ~> 0 OR R2037700 = . THEN R2037700 = 0;
IF R3375000 ~> 0 OR R3375000 = . THEN R3375000 = 0;
IF R4751900 ~> 0 OR R4751900 = . THEN R4751900 = 0;
IF R6382500 ~> 0 OR R6382500 = . THEN R6382500 = 0;
IF S0803400 ~> 0 OR S0803400 = . THEN S0803400 = 0;
IF S2869500 ~> 0 OR S2869500 = . THEN S2869500 = 0;
IF S4584100 ~> 0 OR S4584100 = . THEN S4584100 = 0;
IF S6185600 ~> 0 OR S6185600 = . THEN S6185600 = 0;
IF S8209100 ~> 0 OR S8209100 = . THEN S8209100 = 0;
IF T0616100 ~> 0 OR T0616100 = . THEN T0616100 = 0;
IF T2657200 ~> 0 OR T2657200 = . THEN T2657200 = 0;
```

*/ Edited "reason for leaving job" variable to elimiate I,N & V responses;

```
IF Entry = 1997 AND R2037700 > 0 AND R3375000 > 0 AND R4751900 > 0  THEN JobChanges = 3;
IF Entry = 1997 AND R2037700 > 0 AND R3375000 > 0 AND R4751900 = 0  THEN JobChanges = 2;
IF Entry = 1997 AND R2037700 > 0 AND R3375000 = 0 AND R4751900 > 0  THEN JobChanges = 2;
IF Entry = 1997 AND R2037700 = 0 AND R3375000 > 0 AND R4751900 > 0  THEN JobChanges = 2;
IF Entry = 1997 AND R2037700 > 0 AND R3375000 = 0 AND R4751900 = 0  THEN JobChanges = 1;
IF Entry = 1997 AND R2037700 = 0 AND R3375000 > 0 AND R4751900 = 0  THEN JobChanges = 1;
IF Entry = 1997 AND R2037700 = 0 AND R3375000 = 0 AND R4751900 > 0  THEN JobChanges = 1;
IF Entry = 1997 AND R2037700 = 0 AND R3375000 = 0 AND R4751900 = 0  THEN JobChanges = 0;

IF Entry = 1998 AND R3375000 > 0 AND R4751900 > 0 AND R6382500 > 0  THEN JobChanges = 3;
IF Entry = 1998 AND R3375000 > 0 AND R4751900 > 0 AND R6382500 = 0  THEN JobChanges = 2;
IF Entry = 1998 AND R3375000 > 0 AND R4751900 = 0 AND R6382500 > 0  THEN JobChanges = 2;
IF Entry = 1998 AND R3375000 = 0 AND R4751900 > 0 AND R6382500 > 0  THEN JobChanges = 2;
IF Entry = 1998 AND R3375000 > 0 AND R4751900 = 0 AND R6382500 = 0  THEN JobChanges = 1;
IF Entry = 1998 AND R3375000 = 0 AND R4751900 > 0 AND R6382500 = 0  THEN JobChanges = 1;
IF Entry = 1998 AND R3375000 = 0 AND R4751900 = 0 AND R6382500 > 0  THEN JobChanges = 1;
IF Entry = 1998 AND R3375000 = 0 AND R4751900 = 0 AND R6382500 = 0  THEN JobChanges = 0;

IF Entry = 1999 AND R4751900 > 0 AND R6382500 > 0 AND S0803400 > 0  THEN JobChanges = 3;
IF Entry = 1999 AND R4751900 > 0 AND R6382500 > 0 AND S0803400 = 0  THEN JobChanges = 2;
IF Entry = 1999 AND R4751900 > 0 AND R6382500 = 0 AND S0803400 > 0  THEN JobChanges = 2;
IF Entry = 1999 AND R4751900 = 0 AND R6382500 > 0 AND S0803400 > 0  THEN JobChanges = 2;
IF Entry = 1999 AND R4751900 > 0 AND R6382500 = 0 AND S0803400 = 0  THEN JobChanges = 1;
IF Entry = 1999 AND R4751900 = 0 AND R6382500 > 0 AND S0803400 = 0  THEN JobChanges = 1;
IF Entry = 1999 AND R4751900 = 0 AND R6382500 = 0 AND S0803400 > 0  THEN JobChanges = 1;
IF Entry = 1999 AND R4751900 = 0 AND R6382500 = 0 AND S0803400 = 0  THEN JobChanges = 0;

IF Entry = 2000 AND R6382500 > 0 AND S0803400 > 0 AND S2869500 > 0  THEN JobChanges = 3;
IF Entry = 2000 AND R6382500 > 0 AND S0803400 > 0 AND S2869500 = 0  THEN JobChanges = 2;
IF Entry = 2000 AND R6382500 > 0 AND S0803400 = 0 AND S2869500 > 0  THEN JobChanges = 2;
IF Entry = 2000 AND R6382500 = 0 AND S0803400 > 0 AND S2869500 > 0  THEN JobChanges = 2;
IF Entry = 2000 AND R6382500 > 0 AND S0803400 = 0 AND S2869500 = 0  THEN JobChanges = 1;
IF Entry = 2000 AND R6382500 = 0 AND S0803400 > 0 AND S2869500 = 0  THEN JobChanges = 1;
IF Entry = 2000 AND R6382500 = 0 AND S0803400 = 0 AND S2869500 > 0  THEN JobChanges = 1;
IF Entry = 2000 AND R6382500 = 0 AND S0803400 = 0 AND S2869500 = 0  THEN JobChanges = 0;

IF Entry = 2001 AND S0803400 > 0 AND S2869500 > 0 AND S4584100 > 0  THEN JobChanges = 3;
IF Entry = 2001 AND S0803400 > 0 AND S2869500 > 0 AND S4584100 = 0  THEN JobChanges = 2;
IF Entry = 2001 AND S0803400 > 0 AND S2869500 = 0 AND S4584100 > 0  THEN JobChanges = 2;
IF Entry = 2001 AND S0803400 = 0 AND S2869500 > 0 AND S4584100 > 0  THEN JobChanges = 2;
IF Entry = 2001 AND S0803400 > 0 AND S2869500 = 0 AND S4584100 = 0  THEN JobChanges = 1;
IF Entry = 2001 AND S0803400 = 0 AND S2869500 > 0 AND S4584100 = 0  THEN JobChanges = 1;
IF Entry = 2001 AND S0803400 = 0 AND S2869500 = 0 AND S4584100 > 0  THEN JobChanges = 1;
IF Entry = 2001 AND S0803400 = 0 AND S2869500 = 0 AND S4584100 = 0  THEN JobChanges = 0;
```

IF Entry = 2002 AND S2869500 > 0 AND S4584100 > 0 AND S6185600 > 0 THEN JobChanges = 3;
IF Entry = 2002 AND S2869500 > 0 AND S4584100 > 0 AND S6185600 = 0 THEN JobChanges = 2;
IF Entry = 2002 AND S2869500 > 0 AND S4584100 = 0 AND S6185600 > 0 THEN JobChanges = 2;
IF Entry = 2002 AND S2869500 = 0 AND S4584100 > 0 AND S6185600 > 0 THEN JobChanges = 2;
IF Entry = 2002 AND S2869500 > 0 AND S4584100 = 0 AND S6185600 = 0 THEN JobChanges = 1;
IF Entry = 2002 AND S2869500 = 0 AND S4584100 > 0 AND S6185600 = 0 THEN JobChanges = 1;
IF Entry = 2002 AND S2869500 = 0 AND S4584100 = 0 AND S6185600 > 0 THEN JobChanges = 1;
IF Entry = 2002 AND S2869500 = 0 AND S4584100 = 0 AND S6185600 = 0 THEN JobChanges = 0;

IF Entry = 2003 AND S4584100 > 0 AND S6185600 > 0 AND S8209100 > 0 THEN JobChanges = 3;
IF Entry = 2003 AND S4584100 > 0 AND S6185600 > 0 AND S8209100 = 0 THEN JobChanges = 2;
IF Entry = 2003 AND S4584100 > 0 AND S6185600 = 0 AND S8209100 > 0 THEN JobChanges = 2;
IF Entry = 2003 AND S4584100 = 0 AND S6185600 > 0 AND S8209100 > 0 THEN JobChanges = 2;
IF Entry = 2003 AND S4584100 > 0 AND S6185600 = 0 AND S8209100 = 0 THEN JobChanges = 1;
IF Entry = 2003 AND S4584100 = 0 AND S6185600 > 0 AND S8209100 = 0 THEN JobChanges = 1;
IF Entry = 2003 AND S4584100 = 0 AND S6185600 = 0 AND S8209100 > 0 THEN JobChanges = 1;
IF Entry = 2003 AND S4584100 = 0 AND S6185600 = 0 AND S8209100 = 0 THEN JobChanges = 0;

IF Entry = 2004 AND S6185600 > 0 AND S8209100 > 0 AND T0616100 > 0 THEN JobChanges = 3;
IF Entry = 2004 AND S6185600 > 0 AND S8209100 > 0 AND T0616100 = 0 THEN JobChanges = 2;
IF Entry = 2004 AND S6185600 > 0 AND S8209100 = 0 AND T0616100 > 0 THEN JobChanges = 2;
IF Entry = 2004 AND S6185600 = 0 AND S8209100 > 0 AND T0616100 > 0 THEN JobChanges = 2;
IF Entry = 2004 AND S6185600 > 0 AND S8209100 = 0 AND T0616100 = 0 THEN JobChanges = 1;
IF Entry = 2004 AND S6185600 = 0 AND S8209100 > 0 AND T0616100 = 0 THEN JobChanges = 1;
IF Entry = 2004 AND S6185600 = 0 AND S8209100 = 0 AND T0616100 > 0 THEN JobChanges = 1;
IF Entry = 2004 AND S6185600 = 0 AND S8209100 = 0 AND T0616100 = 0 THEN JobChanges = 0;

IF Entry = 2005 AND S8209100 > 0 AND T0616100 > 0 AND T2657200 > 0 THEN JobChanges = 3;
IF Entry = 2005 AND S8209100 > 0 AND T0616100 > 0 AND T2657200 = 0 THEN JobChanges = 2;
IF Entry = 2005 AND S8209100 > 0 AND T0616100 = 0 AND T2657200 > 0 THEN JobChanges = 2;
IF Entry = 2005 AND S8209100 = 0 AND T0616100 > 0 AND T2657200 > 0 THEN JobChanges = 2;
IF Entry = 2005 AND S8209100 > 0 AND T0616100 = 0 AND T2657200 = 0 THEN JobChanges = 1;
IF Entry = 2005 AND S8209100 = 0 AND T0616100 > 0 AND T2657200 = 0 THEN JobChanges = 1;
IF Entry = 2005 AND S8209100 = 0 AND T0616100 = 0 AND T2657200 > 0 THEN JobChanges = 1;
IF Entry = 2005 AND S8209100 = 0 AND T0616100 = 0 AND T2657200 = 0 THEN JobChanges = 0;

IF JobChanges > 1 THEN Delete;

*/ Created dummy variables to signify reason for job change at any time t though t+3;

IF Entry = 1997 AND R2037700 > 0 AND R2037700 <= 3 THEN Layoff = 1;
IF Entry = 1997 AND R3375000 > 0 AND R3375000 <= 3 THEN Layoff = 1;
IF Entry = 1997 AND R4751900 > 0 AND R4751900 <= 3 THEN Layoff = 1;

IF Entry = 1998 AND R3375000 > 0 AND R3375000 <= 3 THEN Layoff = 1;
IF Entry = 1998 AND R4751900 > 0 AND R4751900 <= 3 THEN Layoff = 1;
IF Entry = 1998 AND R6382500 > 0 AND R6382500 <= 3 THEN Layoff = 1;

```
IF Entry = 1999 AND R4751900 > 0 AND R4751900 <= 3  THEN Layoff = 1;
IF Entry = 1999 AND R6382500 > 0 AND R6382500 <= 3  THEN Layoff = 1;
IF Entry = 1999 AND S0803400 > 0 AND S0803400 <= 3  THEN Layoff = 1;

IF Entry = 2000 AND R6382500 > 0 AND R6382500 <= 3  THEN Layoff = 1;
IF Entry = 2000 AND S0803400 > 0 AND S0803400 <= 3  THEN Layoff = 1;
IF Entry = 2000 AND S2869500 > 0 AND S2869500 <= 3  THEN Layoff = 1;

IF Entry = 2001 AND S0803400 > 0 AND S0803400 <= 3  THEN Layoff = 1;
IF Entry = 2001 AND S2869500 > 0 AND S2869500 <= 3  THEN Layoff = 1;
IF Entry = 2001 AND S4584100 > 0 AND S4584100 <= 3  THEN Layoff = 1;

IF Entry = 2002 AND S2869500 > 0 AND S2869500 <= 3  THEN Layoff = 1;
IF Entry = 2002 AND S4584100 > 0 AND S4584100 <= 3  THEN Layoff = 1;
IF Entry = 2002 AND S6185600 > 0 AND S6185600 <= 3  THEN Layoff = 1;

IF Entry = 2003 AND S4584100 > 0 AND S4584100 <= 3  THEN Layoff = 1;
IF Entry = 2003 AND S6185600 > 0 AND S6185600 <= 3  THEN Layoff = 1;
IF Entry = 2003 AND S8209100 > 0 AND S8209100 <= 3  THEN Layoff = 1;

IF Entry = 2004 AND S6185600 > 0 AND S6185600 <= 3  THEN Layoff = 1;
IF Entry = 2004 AND S8209100 > 0 AND S8209100 <= 3  THEN Layoff = 1;
IF Entry = 2004 AND T0616100 > 0 AND T0616100 <= 3  THEN Layoff = 1;

IF Entry = 2005 AND S8209100 > 0 AND S8209100 <= 3  THEN Layoff = 1;
IF Entry = 2005 AND T0616100 > 0 AND T0616100 <= 3  THEN Layoff = 1;
IF Entry = 2005 AND T2657200 > 0 AND T2657200 <= 3  THEN Layoff = 1;

        IF Entry = 1997 AND R2037700 = 5 OR Entry = 1997 AND R3375000 = 5 OR Entry = 1997
AND R4751900 = 5  THEN Layoff = 1;
        IF Entry = 1998 AND R3375000 = 5 OR Entry = 1998 AND R4751900 = 5 OR Entry = 1998
AND R6382500 = 5  THEN Layoff = 1;
        IF Entry = 1999 AND R4751900 = 5 OR Entry = 1999 AND R6382500 = 5 OR Entry = 1999
AND S0803400 = 5  THEN Layoff = 1;
        IF Entry = 2000 AND R6382500 = 5 OR Entry = 2000 AND S0803400 = 5 OR Entry = 2000
AND S2869500 = 5  THEN Layoff = 1;
        IF Entry = 2001 AND S0803400 = 5 OR Entry = 2001 AND S2869500 = 5 OR Entry = 2001
AND S4584100 = 5  THEN Layoff = 1;
        IF Entry = 2002 AND S2869500 = 5 OR Entry = 2002 AND S4584100 = 5 OR Entry = 2002
AND S6185600 = 5  THEN Layoff = 1;
        IF Entry = 2003 AND S4584100 = 5 OR Entry = 2003 AND S6185600 = 5 OR Entry = 2003
AND S8209100 = 5  THEN Layoff = 1;
        IF Entry = 2004 AND S6185600 = 5 OR Entry = 2004 AND S8209100 = 5 OR Entry = 2004
AND T0616100 = 5  THEN Layoff = 1;
        IF Entry = 2005 AND S8209100 = 5 OR Entry = 2005 AND T0616100 = 5 OR Entry = 2005
AND T2657200 = 5  THEN Layoff = 1;
```

IF Entry = 1997 AND R2037700 = 4 OR Entry = 1997 AND R3375000 = 4 OR Entry = 1997 AND R4751900 = 4 THEN Discharge = 1;

IF Entry = 1998 AND R3375000 = 4 OR Entry = 1998 AND R4751900 = 4 OR Entry = 1998 AND R6382500 = 4 THEN Discharge = 1;

IF Entry = 1999 AND R4751900 = 4 OR Entry = 1999 AND R6382500 = 4 OR Entry = 1999 AND S0803400 = 4 THEN Discharge = 1;

IF Entry = 2000 AND R6382500 = 4 OR Entry = 2000 AND S0803400 = 4 OR Entry = 2000 AND S2869500 = 4 THEN Discharge = 1;

IF Entry = 2001 AND S0803400 = 4 OR Entry = 2001 AND S2869500 = 4 OR Entry = 2001 AND S4584100 = 4 THEN Discharge = 1;

IF Entry = 2002 AND S2869500 = 4 OR Entry = 2002 AND S4584100 = 4 OR Entry = 2002 AND S6185600 = 4 THEN Discharge = 1;

IF Entry = 2003 AND S4584100 = 4 OR Entry = 2003 AND S6185600 = 4 OR Entry = 2003 AND S8209100 = 4 THEN Discharge = 1;

IF Entry = 2004 AND S6185600 = 4 OR Entry = 2004 AND S8209100 = 4 OR Entry = 2004 AND T0616100 = 4 THEN Discharge = 1;

IF Entry = 2005 AND S8209100 = 4 OR Entry = 2005 AND T0616100 = 4 OR Entry = 2005 AND T2657200 = 4 THEN Discharge = 1;

IF Entry = 1997 AND R2037700 = 6 OR Entry = 1997 AND R3375000 = 6 OR Entry = 1997 AND R4751900 = 6 THEN FamQuit = 1;

IF Entry = 1998 AND R3375000 = 6 OR Entry = 1998 AND R4751900 = 6 OR Entry = 1998 AND R6382500 = 6 THEN FamQuit = 1;

IF Entry = 1999 AND R4751900 = 6 OR Entry = 1999 AND R6382500 = 6 OR Entry = 1999 AND S0803400 = 6 THEN FamQuit = 1;

IF Entry = 2000 AND R6382500 = 6 OR Entry = 2000 AND S0803400 = 6 OR Entry = 2000 AND S2869500 = 6 THEN FamQuit = 1;

IF Entry = 2001 AND S0803400 = 6 OR Entry = 2001 AND S2869500 = 6 OR Entry = 2001 AND S4584100 = 6 THEN FamQuit = 1;

IF Entry = 2002 AND S2869500 = 6 OR Entry = 2002 AND S4584100 = 6 OR Entry = 2002 AND S6185600 = 6 THEN FamQuit = 1;

IF Entry = 2003 AND S4584100 = 6 OR Entry = 2003 AND S6185600 = 6 OR Entry = 2003 AND S8209100 = 6 THEN FamQuit = 1;

IF Entry = 2004 AND S6185600 = 6 OR Entry = 2004 AND S8209100 = 6 OR Entry = 2004 AND T0616100 = 6 THEN FamQuit = 1;

IF Entry = 2005 AND S8209100 = 6 OR Entry = 2005 AND T0616100 = 6 OR Entry = 2005 AND T2657200 = 6 THEN FamQuit = 1;

IF Entry = 1997 AND R2037700 > 6 OR Entry = 1997 AND R3375000 > 6 OR Entry = 1997 AND R4751900 > 6 THEN NonFamQuit = 1;

IF Entry = 1998 AND R3375000 > 6 OR Entry = 1998 AND R4751900 > 6 OR Entry = 1998 AND R6382500 > 6 THEN NonFamQuit = 1;

IF Entry = 1999 AND R4751900 > 6 OR Entry = 1999 AND R6382500 > 6 OR Entry = 1999 AND S0803400 > 6 THEN NonFamQuit = 1;

IF Entry = 2000 AND R6382500 > 6 OR Entry = 2000 AND S0803400 > 6 OR Entry = 2000 AND S2869500 > 6 THEN NonFamQuit = 1;

IF Entry = 2001 AND S0803400 > 6 OR Entry = 2001 AND S2869500 > 6 OR Entry = 2001 AND S4584100 > 6 THEN NonFamQuit = 1;

IF Entry = 2002 AND S2869500 > 6 OR Entry = 2002 AND S4584100 > 6 OR Entry = 2002 AND S6185600 > 6 THEN NonFamQuit = 1;
IF Entry = 2003 AND S4584100 > 6 OR Entry = 2003 AND S6185600 > 6 OR Entry = 2003 AND S8209100 > 6 THEN NonFamQuit = 1;
IF Entry = 2004 AND S6185600 > 6 OR Entry = 2004 AND S8209100 > 6 OR Entry = 2004 AND T0616100 > 6 THEN NonFamQuit = 1;
IF Entry = 2005 AND S8209100 > 6 OR Entry = 2005 AND T0616100 > 6 OR Entry = 2005 AND T2657200 > 6 THEN NonFamQuit = 1;

IF Layoff ~= 1 THEN Layoff = 0;
IF Discharge ~= 1 THEN Discharge = 0;
IF FamQuit ~= 1 THEN FamQuit = 0;
IF NonFamQuit ~= 1 THEN NonFamQuit = 0;

*/ Created dummy variables to signify reason for job change at time t+3;

IF R1211100 ~> 0 THEN R1211100 = 0;
IF R2570100 ~> 0 THEN R2570100 = 0;
IF R3892100 ~> 0 THEN R3892100 = 0;
IF R5474100 ~> 0 THEN R5474100 = 0;
IF R7237800 ~> 0 THEN R7237800 = 0;
IF S1553100 ~> 0 THEN S1553100 = 0;
IF S2022700 ~> 0 THEN S2022700 = 0;
IF S3823600 ~> 0 THEN S3823600 = 0;
IF S5423600 ~> 0 THEN S5423600 = 0;
IF S7525700 ~> 0 THEN S7525700 = 0;
IF T0026000 ~> 0 THEN T0026000 = 0;
IF T2020900 ~> 0 THEN T2020900 = 0;

*/Removed I, N & V responses for Children;

IF Entry = 1997 THEN BegChild = R1211100;
IF Entry = 1998 THEN BegChild = R2570100;
IF Entry = 1999 THEN BegChild = R3892100;
IF Entry = 2000 THEN BegChild = R5474100;
IF Entry = 2001 THEN BegChild = R7237800;
IF Entry = 2002 THEN BegChild = S1553100;
IF Entry = 2003 THEN BegChild = S2022700;
IF Entry = 2004 THEN BegChild = S3823600;
IF Entry = 2005 THEN BegChild = S5423600;

IF Entry = 1997 THEN EndChild = R5474100;
IF Entry = 1998 THEN EndChild = R7237800;
IF Entry = 1999 THEN EndChild = S1553100;
IF Entry = 2000 THEN EndChild = S2022700;
IF Entry = 2001 THEN EndChild = S3823600;
IF Entry = 2002 THEN EndChild = S5423600;
IF Entry = 2003 THEN EndChild = S7525700;

```
        IF Entry = 2004 THEN EndChild = T0026000;
        IF Entry = 2005 THEN EndChild = T2020900;

        IF BegChild <= EndChild THEN ChgChild = EndChild - BegChild;
```

    */ Created variable to denote number of children at time t and time t+3, then change in number
of children
        & delete if number of children in household at end is less than beg (not an increase);

```
        IF R1209101 ~> 0 THEN R1209101 = 0;
        IF R2568001 ~> 0 THEN R2568001 = 0;
        IF R3889701 ~> 0 THEN R3889701 = 0;
        IF R5471801 ~> 0 THEN R5471801 = 0;
        IF R7235601 ~> 0 THEN R7235601 = 0;
        IF S1550401 ~> 0 THEN S1550401 = 0;
        IF S2020301 ~> 0 THEN S2020301 = 0;
        IF S3821501 ~> 0 THEN S3821501 = 0;
        IF S5421801 ~> 0 THEN S5421801 = 0;
        IF S7523100 ~> 0 THEN S7523100 = 0;
        IF T0023600 ~> 0 THEN T0023600 = 0;
        IF T2018500 ~> 0 THEN T2018500 = 0;
```

    */Removed I, N & V responses for hours worked per week;

```
        IF Entry = 1997 THEN BegHours = R1209101;
        IF Entry = 1998 THEN BegHours = R2568001;
        IF Entry = 1999 THEN BegHours = R3889701;
        IF Entry = 2000 THEN BegHours = R5471801;
        IF Entry = 2001 THEN BegHours = R7235601;
        IF Entry = 2002 THEN BegHours = S1550401;
        IF Entry = 2003 THEN BegHours = S2020301;
        IF Entry = 2004 THEN BegHours = S3821501;
        IF Entry = 2005 THEN BegHours = S5421801;

        IF Entry = 1997 THEN EndHours = R5471801;
        IF Entry = 1998 THEN EndHours = R7235601;
        IF Entry = 1999 THEN EndHours = S1550401;
        IF Entry = 2000 THEN EndHours = S2020301;
        IF Entry = 2001 THEN EndHours = S3821501;
        IF Entry = 2002 THEN EndHours = S5421801;
        IF Entry = 2003 THEN EndHours = S7523100;
        IF Entry = 2004 THEN EndHours = T0023600;
        IF Entry = 2005 THEN EndHours = T2018500;

        ChgHours = EndHours - BegHours;
```

    */ Created variable to denote change in hours of work per week at job t versus job t+3;

```
        IF BegHours < 35 THEN Delete;
        IF EndHours < 35 THEN Delete;

*/ Delete any workers that are part time (<35 hours);

        IF R1210200 ~> 0 THEN R1210200 = 0;
        IF R2569300 ~> 0 THEN R2569300 = 0;
        IF R3891300 ~> 0 THEN R3891300 = 0;
        IF R5473300 ~> 0 THEN R5473300 = 0;
        IF R7237000 ~> 0 THEN R7237000 = 0;
        IF S1552200 ~> 0 THEN S1552200 = 0;
        IF S2022000 ~> 0 THEN S2022000 = 0;
        IF S3822900 ~> 0 THEN S3822900 = 0;
        IF S5423000 ~> 0 THEN S5423000 = 0;
        IF S7525100 ~> 0 THEN S7525100 = 0;
        IF T0025400 ~> 0 THEN T0025400 = 0;
        IF T2020300 ~> 0 THEN T2020300 = 0;

*/Removed I, N & V responses for marital status;

        IF Entry = 1997 AND R1210200 = 3  THEN BegMarried = 1;
        IF Entry = 1998 AND R2569300 = 3  THEN BegMarried = 1;
        IF Entry = 1999 AND R3891300 = 3  THEN BegMarried = 1;
        IF Entry = 2000 AND R5473300 = 3  THEN BegMarried = 1;
        IF Entry = 2001 AND R7237000 = 3  THEN BegMarried = 1;
        IF Entry = 2002 AND S1552200 = 3  THEN BegMarried = 1;
        IF Entry = 2003 AND S2022000 = 3  THEN BegMarried = 1;
        IF Entry = 2004 AND S3822900 = 3  THEN BegMarried = 1;
        IF Entry = 2005 AND S5423000 = 3  THEN BegMarried = 1;

        IF Entry = 1997 AND R5473300  ~= 3  THEN EndMarried = 1;
        IF Entry = 1998 AND R7237000  ~= 3  THEN EndMarried = 1;
        IF Entry = 1999 AND S1552200  ~= 3  THEN EndMarried = 1;
        IF Entry = 2000 AND S2022000  ~= 3  THEN EndMarried = 1;
        IF Entry = 2001 AND S3822900  ~= 3  THEN EndMarried = 1;
        IF Entry = 2002 AND S5423000  ~= 3  THEN EndMarried = 1;
        IF Entry = 2003 AND S7525100  ~= 3  THEN EndMarried = 1;
        IF Entry = 2004 AND T0025400  ~= 3  THEN EndMarried = 1;
        IF Entry = 2005 AND T2020300  ~= 3  THEN EndMarried = 1;

        IF BegMarried ~= 1 THEN BegMarried = 0;
        IF EndMarried ~= 1 THEN EndMarried = 0;

        IF BegMarried = 0 AND EndMarried = 1 THEN SingToMarr = 1;
        IF BegMarried = 1 AND EndMarried = 0 THEN MarrToSing = 1;

        IF SingToMarr ~= 1 THEN SingToMarr = 0;
```

```
        IF MarrToSing ~= 1 THEN MarrToSing = 0;

*/ Created variable to denote change from single to married and married to single;

        IF Entry = 1997 AND R2560000 >4 AND R2560000 <8 OR Entry = 1997 AND R3881500 >4
AND R3881500 <8 OR Entry = 1997 AND R5460600 >4 AND R5460600 <8 THEN HigherDeg = 1;
        IF Entry = 1998 AND R3881500 >4 AND R3881500 <8 OR Entry = 1998 AND R5460600 >4
AND R5460600 <8 OR Entry = 1998 AND R7224200 >4 AND R7224200 <8 THEN HigherDeg = 1;
        IF Entry = 1999 AND R5460600 >4 AND R5460600 <8 OR Entry = 1999 AND R7224200 >4
AND R7224200 <8 OR Entry = 1999 AND S1538000 >4 AND S1538000 <8 THEN HigherDeg = 1;
        IF Entry = 2000 AND R7224200 >4 AND R7224200 <8 OR Entry = 2000 AND S1538000 >4
AND S1538000 <8 OR Entry = 2000 AND S2007700 >4 AND S2007700 <8 THEN HigherDeg = 1;
        IF Entry = 2001 AND S1538000 >4 AND S1538000 <8 OR Entry = 2001 AND S2007700 >4
AND S2007700 <8 OR Entry = 2001 AND S3808500 >4 AND S3808500 <8 THEN HigherDeg = 1;
        IF Entry = 2002 AND S2007700 >4 AND S2007700 <8 OR Entry = 2002 AND S3808500 >4
AND S3808500 <8 OR Entry = 2002 AND S5408900 >4 AND S5408900 <8 THEN HigherDeg = 1;
        IF Entry = 2003 AND S3808500 >4 AND S3808500 <8 OR Entry = 2003 AND S5408900 >4
AND S5408900 <8 OR Entry = 2003 AND S7509700 >4 AND S7509700 <8 THEN HigherDeg = 1;
        IF Entry = 2004 AND S5408900 >4 AND S5408900 <8 OR Entry = 2004 AND S7509700 >4
AND S7509700 <8 OR Entry = 2004 AND T0013000 >4 AND T0013000 <8 THEN HigherDeg = 1;
        IF Entry = 2005 AND S7509700 >4 AND S7509700 <8 OR Entry = 2005 AND T0013000 >4
AND T0013000 <8 OR Entry = 2005 AND T2015900 >4 AND T2015900 <8 THEN HigherDeg = 1;

        IF HigherDeg ~= 1 THEN HigherDeg = 0;

*/ Created variable to denote receiving degree of higher education;


Proc Means Data = SenProj.wagedata;
        WHERE Female = 0;
        VAR BegWage EndWage ChgWage Layoff Discharge FamQuit NonFamQuit BegChild EndChild
ChgChild
                BegHours EndHours ChgHours BegMarried EndMarried
                SingToMarr MarrToSing HigherDeg Entry Age JobChanges;
        TITLE Summary Statistics for Males;
        run;

Proc Means Data = SenProj.wagedata;
        WHERE Female = 1;
        Var BegWage EndWage ChgWage Layoff Discharge FamQuit NonFamQuit BegChild EndChild
ChgChild
                BegHours EndHours ChgHours BegMarried EndMarried
                SingToMarr MarrToSing HigherDeg Entry Age JobChanges;
        TITLE Summary Statistics for Females;
        run;

        Proc Means Data = SenProj.wagedata;
```

```
        Var BegWage EndWage ChgWage Layoff Discharge FamQuit NonFamQuit BegChild EndChild
ChgChild
                BegHours EndHours ChgHours BegMarried EndMarried
                SingToMarr MarrToSing HigherDeg Entry Age JobChanges;
        TITLE Summary Statistics Combined;
        run;

Proc Reg Data = SenProj.wagedata;
        Where Female = 0;
        Model LogChgWage = LogBegWage Layoff Discharge FamQuit NonFamQuit ChgChild
                ChgHours SingToMarr MarrToSing HigherDeg;
        TITLE OLS Regression: Job Mobility Wage Effect: Male;
        run;

Proc Reg Data = SenProj.wagedata;
        Where Female = 1;
        Model LogChgWage = LogBegWage Layoff Discharge FamQuit NonFamQuit ChgChild
                ChgHours SingToMarr MarrToSing HigherDeg;
        TITLE OLS Regression: Job Mobility Wage Effect: Female;
        run;

        Proc Reg Data = SenProj.wagedata;
        Model LogChgWage = LogBegWage Layoff Discharge FamQuit NonFamQuit ChgChild
                ChgHours SingToMarr MarrToSing HigherDeg;
        TITLE OLS Regression: Job Mobility Wage Effect: Combined;
        run;
```