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Wage Mobility within and between Jobs

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WAGE MOBILITY WITHIN AND BETWEEN JOBS

Peter Gottschalk[1]

April 2001

Abstract:

This paper presents evidence on the extent of wage mobility both while working for the same firm and when moving to a new firm. We find that mean wage growth between jobs is large in comparison to wage growth while working for the same employer, especially for less educated workers who experience low mean wage growth between jobs but even lower wage growth while working for the same employer. There is, however, substantial heterogeneity in wage growth both within and between firms. We, therefore, focus on both the means of the wage change distributions and on the probability that a worker does not experience real wage growth either while working for the same employer or moving to a new employer. We find that while real wages do grow with experience on the average job, a substantial proportion of workers experience real declines in wages while working for the same employer or moving to a new employer.

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WAGE MOBILITY WITHIN AND BETWEEN JOBS

INTRODUCTION

This paper presents evidence on the extent of wage mobility both while working for the same firm and when moving to a new firm. Focusing on mean wage growth, the object of interest in much of the previous literature, provides a description of one aspect of the full distributions of within and between job wage growth, but ignores other important aspects. We focus specifically on the probability of downward mobility. What proportion of workers experience real declines in wages while working for the same employer? How likely is it that a worker will have a lower wage after changing employers? Does downward mobility depend on whether the worker experienced an intervening spell of non-employment?

The importance of focusing on aspects of the distribution other than the mean is illustrated by the following quote from a description of the assumptions behind the welfare reforms instituted in the US during the late 1990's:

> Work First programs share a common philosophy regarding work: <u>any job</u> is viewed as a good job and program efforts should be geared toward helping recipients enter the paid labor force as quickly as possible (Holcomb, et al., 1998, p. 4).
>
> The best way to succeed in the labor market is to join it. It is believed that job advancement and higher wages will come from the experience of working (Holcomb, et al., 1998, p. 13).

Even if it were true that the less educated gained, on average, the same from work experience as more highly educated workers, this would not imply that all jobs offered to less educated workers would led to the same average returns[2]. As long as there is heterogenity in wage growth there will be some workers who experience above average returns to work experience. By definition these above average growth rates must be offset by some below average rates.

[2] See Gottschalk (2000) for a review of the evidence on mean returns and Connolly and Gottschalk (2000) for recent estimates.

The key question is, therefore, the extent of the heterogeneity both between education groups and within groups.

In this paper we provide evidence that addresses these issues by examining not only the mean wage growth within and across jobs but also the probability that a job leads to a decline in real wages. The remainder of our paper is divided into four sections. Section II provides the conceptual links between wage growth within and between employers and the more standard concepts of returns to tenure, experience, and job match. Section III presents our data and Section IV presents results. The final section summarizes our findings.

CONCEPTUAL FRAMEWORK

While our objective is to describe differences in wage growth within jobs and between jobs, it is useful to show how these measures map into standard economic concepts of returns to tenure, experience and job match. We use the standard ln wage model to make the necessary links and to show the key assumptions necessary for identification.

Consider the standard log wage model with person- and match-specific error components:

(1) $Y_{ijt} = \beta_x X_{ijt} + \beta_T T_{ijt} + \Gamma Z_{ijt} + \varepsilon_{ijt}$ and

(2) $\varepsilon_{ijt} = \phi_{ij} + \mu_i + \upsilon_{ijt}$,

where X_{ijt} is accumulated labor market experience and T_{ijt} is tenure for person *i* in job *j* in period *t* . Z_{ijt} is a vector of control variables. μ_i is a person-specific error component, and ϕ_{ij} is a job match-specific component, and v_{ijt} is a serially independent transitory component. We introduce individual heterogeneity later but start with the standard model in order to focus on essentials.

The key econometric issue in estimating the parameters of this model is that if agents stay longer at jobs with high values of the job match component, ϕ_{ij}, tenure and experience are endogenous.[3] Consider the following linear approximation to the matching process:

(3) $\phi_{ijt} = \alpha_0 + \alpha_1(j-1) + \alpha_T T_{ijt} + \eta_{ij}$

where η_{ij} is assumed to be independent across jobs. Equation 3 can be motivated by a simple model of on-the-job search. A person with $T_{i,j-1,t}$ periods of tenure in job *j*-1 will accept a job offer if the match component in the new job exceeds the sum of the match component in the

[3] See Altonji and Shakotko (1987), Altonji and Nichols (1997) and Topel (1991)

current job plus the foregone returns to tenure in the current job.[4] Let ϕ_{ij}^{*} be the resulting reservation value for job *j*:

(4) $\phi_{ij}^{*} = \phi_{ij-1} + \beta_T T_{i,j-1,t}$.

The expected value of accepted offers is, therefore, given by $E(\phi_{ij} | \phi_{ij} > \phi_{ij}^{*})$, which increases with tenure in the previous job, and the number of previous successful job matches, *j*-1.

The relationship between completed tenure in the previous job and the conditional mean of ϕ_{ij} reflects the well-known prediction that the returns to job-specific tenure is lost when moving to a new job. The new job must, therefore, compensate for this loss in job-specific human capital, which grows with the length of time the agent has been on the previous job.

The relationship between *j* and the conditional mean of ϕ_{ij} is equally straightforward.[5] Each new job has a job match component that must dominate the match component in the current job in order for the agent to accept the new offer. Hence, the expected value of the match component increases with the number of previous acceptances, j-1.

This holds if the agent has the option of staying in the current job. For transitions that include an intervening spell of non-employment, this option is not open. Once a person leaves a job, the reservation value for the match component in the new job no longer reflects the match component in the previous job, since the option of staying in that job has been eliminated. As a result, the expected value of the new job match component is given by the unconditional expectation; $E(\phi_{ij})$. We, therefore, allow the change in the job match component to differ depending on whether the transition includes an intervening spell of non-employment.

Substituting equation (3) into equation (2) and substituting the results into equation (1) yields:

(5) $Y_{ijt} = (\alpha_0 - \alpha_1) + \beta_x X_{ijt} + \tilde{\beta}_T T_{ijt} + \Gamma Z_{ijt} + \alpha_1 j + \varepsilon_{ijt}$ and

(6) $\varepsilon_{ijt} = \eta_{ij} + \mu_i + \nu_{ijt}$,

where $\tilde{\beta}_T = \beta_T + \alpha_T$.

Taking differences within jobs yields:

(7) $\Delta_w = Y_{ijt+1} - Y_{ijt} = (\beta_x + \beta_T) + \Gamma \Delta Z_{ij} + \Delta \upsilon_{ij}$,

[4] This assumes there are no costs to moving to a new job and that offers are received at zero costs.

[5] Altonji and Shakotko (1987) and Topel (1991) use $\phi_{ijt} = \alpha_0 + \alpha_x X_{ijt} + \alpha_T T_{ijt} + \eta_{ijt}$ as the linear approximation to the matching process. They implicitly assume that match quality increases with the number of previous offers (which is correlated with experience) rather than the number of previously accepted offers.

which is mean within firm wage growth, one of the objects of interest in this study. The constant in equation captures the sum of the returns to experience and returns to tenure. Taking differences within jobs eliminates the person specific unobservables, μ_i and the job match component ϕ_{ij}. Allowing individual heterogeneity in returns to tenure and returns to experience yields:

(7') $\Delta_w = (\beta_{xi} + \beta_{Ti}) + \Gamma\Delta\mathbf{Z}_{ij} + \Delta\upsilon_{ij} + \xi_i$,

where $\xi_i = (\beta_x - \beta_{xi}) + (\beta_T - \beta_{Ti})$ is the individual deviation from the mean return to experience and tenure. Equation (7') can, therefore, be estimated by OLS as long as $\Delta\mathbf{Z}_{ij}$ is independent of the ideosyncratic shocks to wages, Δv_{ij}, and ξ_i . . The estimates of β_x and β_T are, therefore, the means of the random coefficients. Likewise $\Pr(\Delta_w < 0 | \Delta\mathbf{Z})$ can be estimated using Probit

We are also interested in the between job wage change which is given by:

(8) $\Delta_b = Y_{i,\, j+1,0} - Y_{ijs} = [\beta_{xi} + \alpha_1] - \tilde{\beta}_{Ti}\tilde{T}_{ij} + \Gamma\Delta\mathbf{Z}_{ij} + \Delta\eta_{ij} + \Delta v_{ij} + \omega_i$,

where $\tilde{T}_{ij}$ is total tenure at the end of job j, Y_{ijs} is the wage in the last period of job j and $\omega_i = (\beta_x - \beta_{xi}) + (\tilde{\beta}_T - \tilde{\beta}_{Ti})\tilde{T}_{ij}$ is again deviation from means. The intercept captures the mean returns to experience from the additional period of work, β_x, plus the improved job match associated with having made one more transition, α_1. Taking differences across jobs has eliminated time invariant person specific unobservables, $\mu_{i.}$ OLS can, therefore, again be used to estimate mean between job wage growth as long as previous tenure, $\tilde{T}_{ij}$, and $\Delta\mathbf{Z}_{ij}$ are independent of the change in ideosyncratic shocks, Δv_{ij}, changes in the job match component, $\Delta\eta_{ij}$, and the deviation from means, ω_i Likewise, Probit can be used to estimate the probability of no real wage increase between jobs.

DATA

We use the 1986-1993 panels of the Survey of Income and Program Participation (SIPP) to measure wage growth in the US while working for the same employer and the wage gains associated with changes in employers. Each SIPP panel consists of a series of nationally representative longitudinal surveys of nearly 30,000 individuals who are followed for 24 to 40 months, depending on the panel. A new panel was started in every year (other than 1989)

starting in 1984.[6] These panels provide data over the twelve year period 1984-95.

The SIPP includes key variables necessary to identify when respondents change jobs and wage changes both while working for the same employer and when moving to a new employer. Individuals within each panel are interviewed every four months. During these interviews, respondents are asked detailed questions on job and earnings histories that cover the previous four months. Unique codes are assigned to each employer allowing us to identify when respondents change jobs.

Respondents are asked both their wage rate and their earnings. For those who do not report hourly wages, we impute their wage rates by dividing monthly earnings by hours worked per week and weeks worked in each month.[7] These wages are then deflated using the Total Personal Consumption Expenditures deflator to obtain real hourly wage rates in each month.[8]

Our sample includes all males and females with positive weights who were 18 to 55 at some point during the panel. For each person we include all months of employment while not in school. Months when the respondent is in school are dropped in order not to confound the low wages of students with those of other low-wage respondents.

The top section of Table 1 shows the sample size of our data set, which includes a little more than 60,000 males and over 59,000 females. Each respondent is observed for between two and three years, depending on the panel. This results in our sample of 91,496 jobs for males and 89,117 jobs for females. Wage growth across jobs is estimated off of the 34,213 transitions for males and 32,765 for females.

The descriptive statistics on race, ethnicity, and education confirm that our sample is largely representative of the U.S. population on these observed characteristics. White non-Hispanics make up roughly 77 percent of the sample. Females with a high school degree or less make up 54.3 percent of the sample while 25.3 percent have some college but not a bachelor's degree. Among males, 56.9 percent have a high school degree or less and 22.2 percent have attended college without receiving a degree.

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[6] We do not use the 1984 and 1985 panels because the monthly school enrollment questions were not asked before the 1986 panel. The 1984 panel was also not used because the employer identification number was not coded consistently in that panel.

[7] We also construct this measure for persons reporting an hourly wage rate and find the correspondence between the reported and calculated wage rate is high.

[8] Since the number of weeks in a month varies between 4 and 5 this will introduce spurious fluctuations in imputed wage rates. Therefore, if a respondent reports the same earnings and same hours worked in each month covered by the interview, we assume that they also worked the same number of weeks in each month. We, therefore, divide their monthly wages by 4.33 in each of the four months covered by the interview.

RESULTS

Mean Wage Growth in the US

We start by showing that in the US wage gains that accompany moves to new employers are an important source of wage growth, especially for males. Row 1 of table 2 shows the mean percentage growth in real wages while working for the same employer. The next two rows show the mean percentage wage increase when moving directly to a new job (row 2) and when experiencing an intervening spell non-employment (row 3). On average, female wages grow by 3.2 percent per year while working for the same employer. The mean wage gain for females who go directly to a new jobs is 1.7 percent, or nearly the equivalent of six months of wage growth while working for the same employer. For males the wage gains that accompany job to job transitions is even larger relative to the wage gains while working for the same employer. The 3.1 percent increase in wages when moving directly to a new job is more than one and half times as large as the wage yearly wage gains while working for the same employer (2.0 percent). In terms of the conceptual framework developed earlier the improvement in job match, for those who find successful job matches, is large relative to the gains from returns to experience and tenure.

The third row of table 2 shows the importance of differentiating between transitions directly from one job to another and transitions in which there is an intervening spell of non-employment. When there is such a spell real wages actually drop by 3.2 percent for females and 2.1 percent for males. This strongly indicates that a large proportion of these non-employment spells were the result either of involuntary terminations or other factors detrimental to finding a better paying job.

Mean Wage Growth by Education Level

Thus far we have focused on the unconditional mean wage gains within jobs and between jobs. Figures 1 and 2 take the first cut at exploring the heterogeneity in growth rates by displaying within job and between job growth rates by education and gender. Figure 1 shows a clear monotonic increase in within job wage growth by education for females. Females with less than high school degree experience growth in real wages while working for the same employer is only one percent. In contrast, female college graduates experiences a 7.5 percent per year growth in real wages while working for the same employer. For males the contrasts are not as stark. Nevertheless, male college graduates have growth rates that are four times as large as those of high school graduates.

Figure 2 displays between job wage growth by education and gender. We again make

the distinction between transitions directly from one job to another and transitions with an intervening spell non-employment. The first thing to note is that mean wages increase when individuals go directly from one job to another but decline when the job change involves an intervening spell of non-employment. This pattern holds for males and for females in each of the four education groups.

The pattern across education groups is clear for males. For transitions with no intervening spell of non-employment the wage gains are roughly twice as large for college graduates as for high school dropouts (2.8 percent versus 5.1 percent). More highly educated males, however, experience substantially larger declines in wages when there is an intervening spell of non-employment. For females there are no clear educational patterns. Nevertheless, there is substantial heterogeneity in between job wage growth across education groups.

Heterogenity in Wage Growth

The preceding section has shown that it would clearly be inappropriate to assume individuals with low education experience the same growth in wages either within jobs or across jobs as persons with more education. These educational differences, however, pale in comparison to the heterogeneity within groups.

Figure 3 shows the distribution of within job wage growth for our males and for females in our four education groups. The top and bottom four graphs are for males and females respectively. While part of the dispersion is undoubtedly due to measurement error, it is clear that that the modal change in real wages within jobs for males and females in each education group is negative. This stands in sharp contrast to the positive mean shown in figure 1.

Table 3 shows the median and the proportion of jobs with non-positive real wage growth. The top panel includes all jobs. While mean wage growth was positive for males and for females in each education group, the medians are all negative and roughly equal to minus 2.5 percent. Since the average inflation rate over this period was 3.5 percent this indicates that nominal wage growth in the median job was only one percent per year. As a result of nominal wages rising substantially less than inflation, real wages fell in the median job.

Columns 3 shows that real wage changes were negative in a substantial portion of jobs. Roughly 70 percent of the jobs held by males and females with less than a high school degree had negative real wage growth. Even, among college graduates 56 percent were in

jobs with no real wage growth.

Undoubtedly some of the declines reflect measurement error since persons may overstate their wages in one interview but not the next.[9] This results in a decline in reported wages between interviews, but this decline is spurious since it reflects measurement error. In on going analysis of nominal wage changes, we find that a substantial proportion of the observed nominal wage changes are also negative. After correcting for measurement error we find that roughly 4 percent of nominal wage changes are negative. Since nominal wage increases tend to occur on an annual basis, it is possible that the patterns in figure 3 and table 3 reflect the fact that some jobs have not lasted long enough for workers to receive a cost of living adjustment. In fact, the spikes in figure 3 are all roughly at -.035, which would be the real wage decline in a job with no nominal growth. To explore the possibility that annual increments are responsible for the large proportion of jobs with negative real wage growth, Figure 4 shows the distribution of within job wage growth for jobs lasting more than one year. The bottom panel of table 3 shows the means, medians and percent non-positive for these distributions.

Care must be taken in interpreting these data since conditioning on tenure yields a sample of jobs that, on average, are likely to have higher wage growth than all jobs. This simply reflects the fact that good jobs are the ones most likely to last. The sample of jobs that last more than 12 months is, therefore, not representative of all jobs. Keeping this in mind, it is still true that these distributions are representative of the subset of jobs lasting long enough to have experienced annual cost of living increases.

Figure 4 still shows a spike around -.035, especially for males. This spike is, however, substantially smaller than in figure 3, indicating that some jobs had not yet had a cost of living increase. The distribution, however, becomes considerably more disperse indicating that the wage changes which did occur on an annual basis were far from uniform. While the wages in some jobs increased substantially, real wages in others were allowed to fall. The bottom panel of table 3 shows that for males and females with high school degree or less the median real wage increase was roughly zero. Workers with at least some college had a median wage gain of a little less than two percent.

Figure 5 shows the distributions of between job growth in real wages. Again there is a spike which is below zero for males and around zero for females. Since wages are reset when

[9] The change in inputed wages for a person who reports earnings and hours (but not wages) can also reflect measurement error in hours. The proportion with declines in inputed wages is, however, very similar to the proportion with declines in reported wages.

moving to a new job this spike is unlikely to reflect inertia within firms. There is also considerable dispersion in these distributions indicating that the mean is unlikely to capture the experiences of a large proportion of the population.

Table 4 shows the mean, median, and percent of transitions that resulted in declines in real wages. The top panel shows the wage changes that accompanied job to job transitions and the bottom shows transitions with an intervening spell of non-employment. While the mean wage gain for job to job transitions is large and positive, the medians for males and females with high school degree or less are again close to zero. For workers with some college the medians are positive, but a substantial proportion of the job to job transitions result in no increase in real wages.

The bottom panel shows the corresponding data for transitions with an intervening spell of non-employment. As before, the mean wage changes are all negative. Medians are also negative but somewhat smaller. Not surprisingly a large proportion of these transitions resulted in a decline in real wages.

In summary, there is substantial heterogeneity in within and between job growth even after controlling for education and gender. The mean is still an unbias estimate of the wage growth for a randomly chosen individual but there is too much diversity in experience to make this a useful predictor if one is at all risk averse. Knowing that the negative wage growth that some individuals experience are offset by large positive gains for others may be cold comfort.

Multivariate Estimates

We now turn to estimates of equations 7 and 8 developed in section II. These models allow us to see whether the differences in wage growth across groups, exhibited in the previous tables, are statistically significant after controlling for other factors. Tables 5a and 5b present mean within job wage growth regressions (column 1) and Probit estimates of the probability of no real wage growth within jobs (columns 2 and 3) for females and males respectively. For ease of interpretation, we show the partial derivative of the probability with respect to the covariates rather than the Probit coefficients.[10]

Column 1 confirms that the educational differences in mean wage growth are statistically significant for males and females even after controlling for race and year. These estimates indicate that a female college graduate will experience a within job wage growth

[10] Derivatives are evaluated at the mean of the covariates. Derivatives for dummy variables are the difference between the estimated probabilities in the dummy variable is zero and one.

2.8 percent higher than that of a high school graduate. The corresponding figure for males is 1.5 percent

Columns 2 and 3 show that while mean wages increased over time, the probability of real wage declines also increased, holding education and race constant. Thus, the dispersion in growth rates was also increasing, leading to an increase in the probability of downward mobility even during a period of rising growth rates. The large and significant coefficient on the dummy variable for tenure less than 12 months confirms that downward mobility is significantly more likely to occur if the average is taken over less than a year, a period that may not be long enough to observe a yearly cost of living increase[11]. Finally, the educational differences found earlier are also statistically significant, indicating that an additional year of education lowers the probability of a real wage decline by 1.5 percent for both males and females. These patterns hold whether or not one includes the dummy variable for tenure less than 12 months.

Tables 6a and 6b present estimates of between job wage growth (based on equation 8) for males and females respectively. Columns 1 and 2 of each table show estimates for job to job transitions. Columns 3 and 4 are for transitions between jobs with an intervening spell of non-employment.

Table 6a shows that the educational differences shown in Figure 2 for males are statistically significant, even after controlling for year, race, tenure in the previous job and change in part-time status between the previous and new job. When going directly from one job to another, the more highly educate experience the larges between job wage growth. They are also less likely to experience a decline in real wages when moving to the new job. However, when there is have an intervening spell of non-employment it is the more highly educated who experience the largest mean decline in wages between jobs. This educational disadvantage, however, does not carry over to the probability of a decline in real wages. It is the least educated males who are the most likely to experience a real wage decline when moving to a new job, whether or not there is an intervening spell of non-employment.

For females there are no statistical significant educational differences in mean wage changes between jobs. However, like males, it is the least educated females who are most likely to experience a decline in real wages.

The other coefficients in tables 6a and 6b paint a similar picture for males and

[11] This dummy variable is defined by the duration of the observed job. Since within job wage growth is calculated for all jobs, including right censored jobs, this is not a measure of total tenure on the job. It is, however, potentially endogenous since tenure will depend on wage growth on the current job.

females. Moving directly from a full-time job to a part-time job reduces the expected wage gain by roughly 6 percent for both males and females. If there is an intervening spell of non-employment the change to part-time status leads to an 8 percent decline in real wages.

We also find that between job wage growth is lower the longer the person has been in the previous job. For transitions with an intervening spell of non-employment this is consistent with the theory developed earlier. Persons who leave their jobs before finding the next job loose all the value of job specific training in the previous job. Without the option of returning to that job, the value of the specific training does not affect their reservation wages. The results for job to job transitions is more perplexing. While the coefficient on previous tenure is roughly half as large, it is still significantly negative. This result is contrary to the theory developed earlier in which agents had to be compensated for the loss in job specific tenure in the previous job.

CONCLUSIONS

Standard human capital theory predicts that wages increase with experience and tenure. Both lead to within job wage growth. Likewise, job search and job matching models predict that wages increase when moving to new jobs. Thus, the norm is one of upward wage mobility.

Cross-sectional and panel mean regressions, abundant in the literature, strongly confirm the fact that workers with more experience have higher wages. The findings in this paper are consistent with the previous literature, since we also find that mean wage growth within jobs and between jobs are positive. We, however, show that the mean experience can be misleading. Less educated workers do not experience the average within job wage growth. Their real wage profiles within jobs are remarkably flat. One should, therefore, not assume that less educated workers gain as much from taking a job as more highly educated workers gain.

These educational differentials, however, pale in comparison to the diversity in wage growth within education and gender groups. While mean profiles do slope upwards, many profiles increase less than inflation. Likewise, there is substantial diversity in distribution of wage changes that accompany transitions from one job to another.

This paper has argued that there is much to be learned by going behind the mean experience. Undoubtedly some of the declines in real wages are a result of measurement error, an important area for future research. However, some of these declines are very real. Employers need not offer nominal wage increases to offset inflation. Some workers are paid

on a piece rate or work on commission. Workers are involuntarily terminated or have to change jobs for family reasons. These and numerous other factors can lead to downward mobility.

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TABLES

Table 1

Summary statistics by gender

			Females	Males
Sample size				
	Persons		59,457	60,137
	Jobs		89,117	91,496
	Transitions		32,765	34,213
Characteristics				
	Race/Ethnicity			
		White non-Hispanic	.771	.774
		Non-white/non-Hispanic	.149	.131
		Hispanic	.079	.095
	Education			
		Less Than High School	.140	.184
		High School Graduate	.403	.385
		Some College	.253	.222
		College Plus	.204	.209

Table 2

Mean Growth in Real Wages
within Jobs and between Jobs—by Gender

	(1)	(2)
	Female	Male
Within job wage growth	.032	.021
Between job wage growth		
No intervening non-employ	.037	0.040
Intervening non-employ	-.026	-.029

Table 3
Within Job Real Wage Growth
Mean Median and Percent Negative

	(1)	(2)	(3)
	Mean	Median	Percent Negative
All Jobs			
Males			
Less than HS	.028	-.026	.700
High School	.009	-.026	.659
Some College	.017	-.025	.628
College Plus	.040	-.024	.566
Females			
Less than HS	.011	-.026	.702
High School	.021	-.025	.638
Some College	.027	-.025	.629
College Plus	.076	-.024	.568
Tenure >12			
Males			
Less than HS	.011	-.001	.516
High School	.004	-.001	.509
Some College	.046	.018	.403
College Plus	.021	.017	.432
Females			
Less than HS	.123	-.009	.532
High School	-.042	-.002	.533
Some College	.052	.019	.423
College Plus	.029	.017	.415

Table 4
Between Job Real Wage Growth--
Mean, Median and Percent Negative

	(1) Mean	(2) Median	(3) Percent Negative
Job to Job			
Males			
Less than HS	0.028	-0.002	0.520
High School	0.041	0.012	0.489
Some College	0.041	0.018	0.480
College Plus	0.051	0.028	0.476
Females			
Less than HS	0.039	-0.002	0.517
High School	0.029	0.012	0.488
Some College	0.045	0.022	0.481
College Plus	0.041	0.030	0.473
Intervening Non-employment			
Males			
Less than HS	-0.014	-0.010	0.581
High School	-0.033	-0.009	0.586
Some College	-0.033	-0.010	0.571
College Plus	-0.042	-0.010	0.549
Females			
Less than HS	-0.011	-0.009	0.578
High School	-0.044	-0.010	0.584
Some College	-0.006	-0.007	0.542
College Plus	-0.024	-0.006	0.534

Table 5a
Within Job Wage Growth — Mean Growth and Probability of No Real Growth — Females

	(1)	(2)	(3)
	Mean Wage Growth	Prob no Growth	Prob no Growth
Education	0.007	-0.015	-0.015
	(0.002)***	(0.001)***	(0.001)***
Calendar Year	0.004	0.008	0.008
	(0.001)***	(0.001)***	(0.001)***
White non-Hispanic	0.012	-0.026	-0.026
	(0.010)	(0.004)***	(0.004)***
Tenure ≤12 months			0.182
			(0.022)***
Constant	-0.414		
	(0.135)***		
Observations	89117	89117	89117
R-squared	0.00		

Table 5b
Within Job Wage Growth — Mean Growth and Probability of No Real Growth — Males

	(1)	(2)	(3)
	Mean Wage Growth	Prob no Growth	Prob no Growth
Education	0.003	-0.016	-0.015
	(0.001)**	(0.001)***	(0.001)***
Year	0.003	0.006	0.007
	(0.001)**	(0.001)***	(0.001)***
White non-Hispanic	0.001	-0.009	-0.010
	(0.010)	(0.004)**	(0.004)**
Tenure ≤12 months			0.179
			(0.022)***
Constant	-0.328		
	(0.129)**		
Observations	91496	91496	91496
R-squared	0.00		

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Column (1): OLS coefficients. Within job mean monthly change in ln wages is the dependant variable
Columns (2) and (3): Probit estimates of $\partial \Pr / \partial x$

Table 6a
Between Job Wage Growth — Mean Growth and Probability of No Real Growth — Males

	Job to Job		Intervening Non-Employment	
	(1)	(2)	(3)	(4)
	Mean Wage Growth	Prob No Real Growth	Mean Wage Growth	Prob No Real Growth
Education	0.003	-0.006	-0.004	-0.005
	(0.001)**	(0.001)***	(0.002)**	(0.002)***
Year	0.002	-0.001	0.002	0.000
	(0.001)*	(0.001)	(0.002)	(0.002)
White non-Hispanic	-0.014	-0.001	-0.020	-0.011
	(0.009)	(0.009)	(0.012)*	(0.011)
Change in Part Time	-0.058	0.062	-0.081	0.091
	(0.012)***	(0.011)***	(0.010)***	(0.009)***
Previous Tenure	-0.003	0.002	-0.007	0.007
	(0.001)***	(0.000)***	(0.001)***	(0.001)***
Constant	-0.190		-0.104	
	(0.126)		(0.178)	
Observations	21556	21556	11955	11955
R-squared	0.00		0.01	

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Columns (1) and (3): OLS coefficients. Between job changes in ln wages is the dependant variable.
Columns (2) and (4): Probit estimates of $\partial \Pr / \partial x$

Table 6b
Between Job Wage Growth — Mean Growth and Probability of No Real Growth —Females

	Job to Job		Intervening Non-Employment	
	(1)	(2)	(3)	(4)
	Mean Wage Growth	Prob No Real Growth	Mean Wage Growth	Prob No Real Growth
Education	0.002	-0.006	0.001	-0.008
	(0.002)	(0.002)***	(0.002)	(0.002)***
Year	0.001	0.003	0.004	-0.003
	(0.001)	(0.001)**	(0.002)**	(0.002)
White non-Hispanic	-0.005	-0.015	-0.021	0.017
	(0.010)	(0.009)	(0.012)*	(0.011)
Change in Part Time	-0.056	0.078	-0.079	0.096
	(0.010)***	(0.010)***	(0.008)***	(0.008)***
\Previous Tenure	-0.003	0.002	-0.007	0.005
	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Constant	-0.024		-0.355	
	(0.132)			
			(0.169)**	
Observations	19570	19570	12643	12643
R-squared	0.00		0.01	

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
Columns (1) and (3): OLS coefficients. Between job changes in ln wages is the dependant variable.
Columns (2) and (4): Probit estimates of $\partial \Pr / \partial x$

FIGURES

Figure 1
Mean within Job Wage Growth by Education and Gender

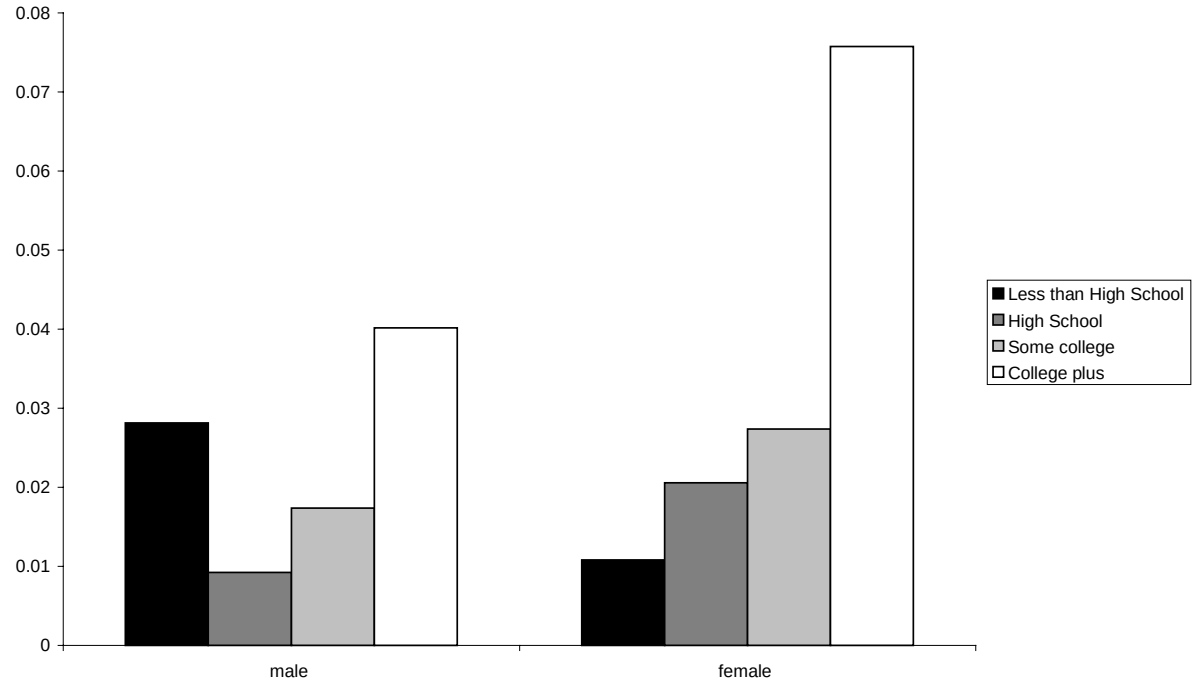


Figure 2
Mean between Job Wage Change by Education and Intervening Non-Employment

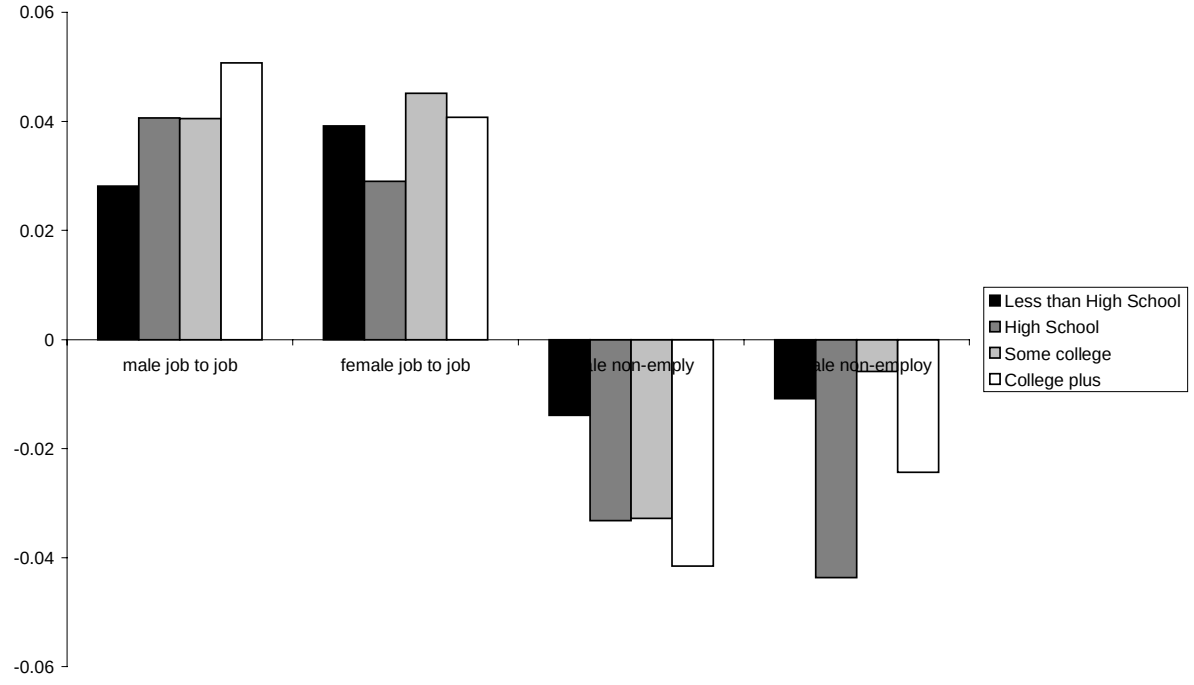
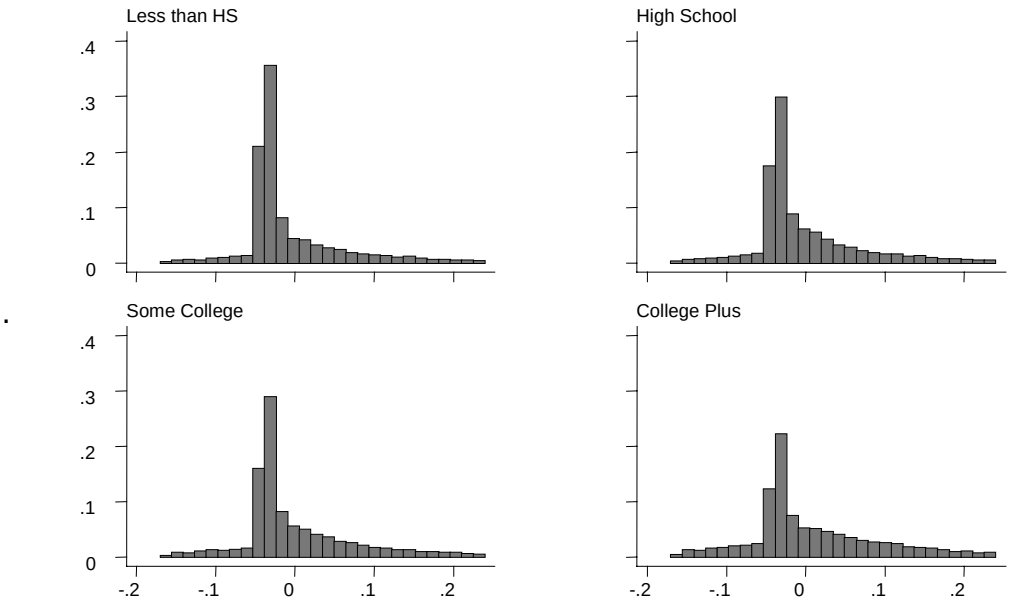


Figure 3
Distribution of within Job Wage Growth
By Education—All Jobs

Males



Females

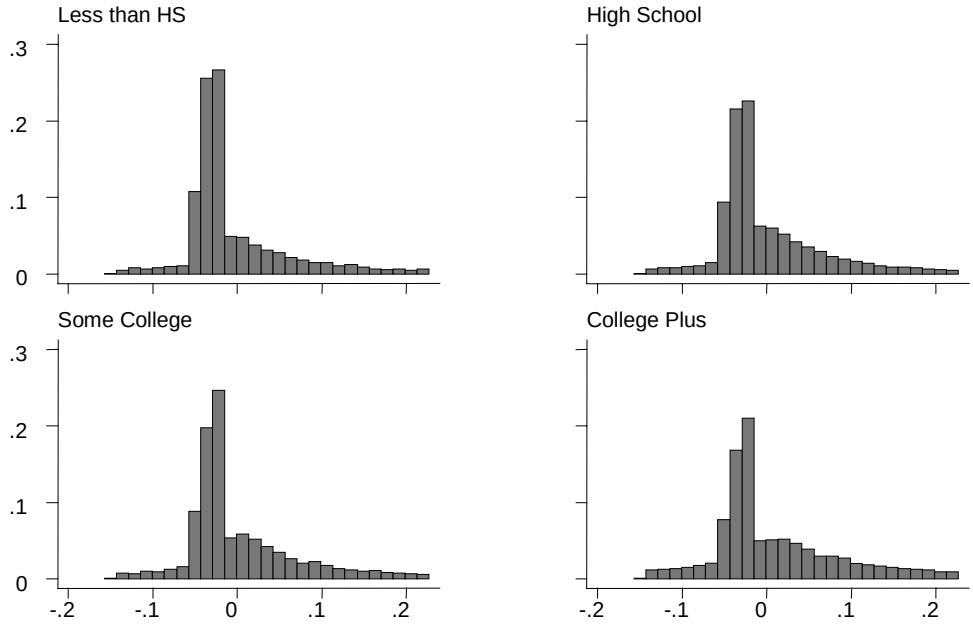
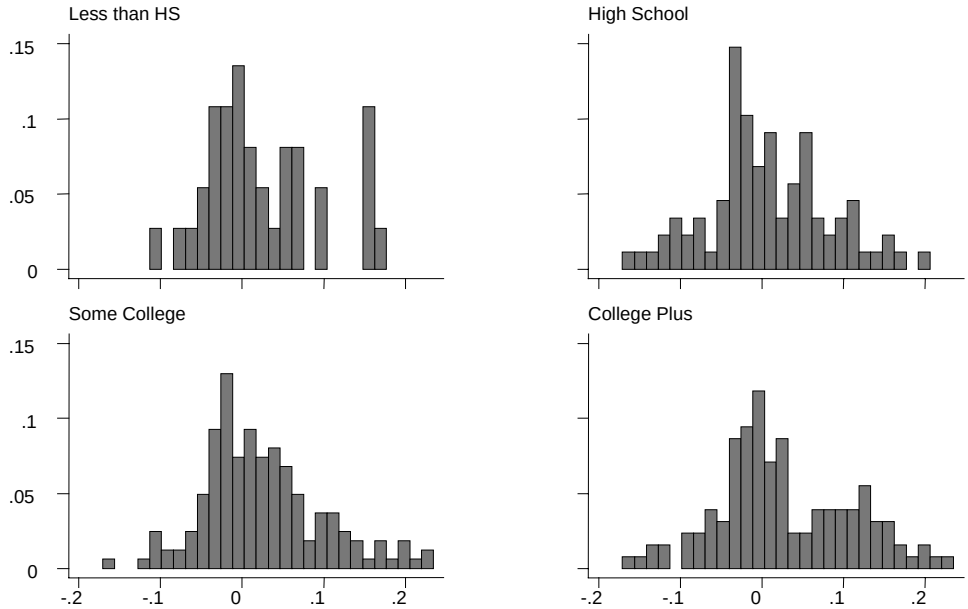


Figure 4
Distribution of within Job Wage Growth
By Education—Jobs with Tenure>12

Males



Females

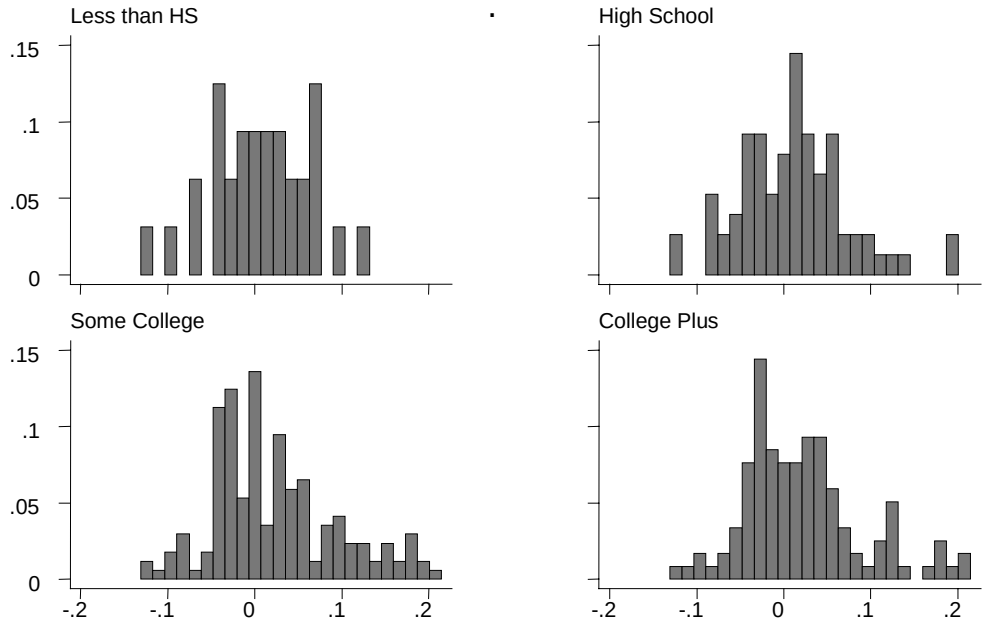
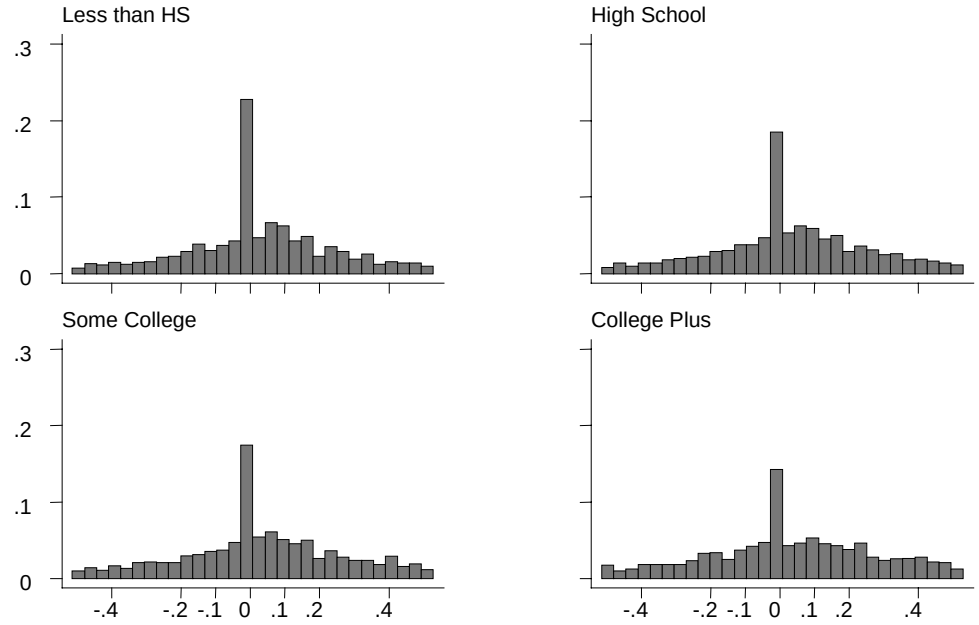


Figure 5
Distribution of between Job Wage Growth
By Education and Gender

Males



Females