Returns to Type or Tenure? Job Matching Processes of the Well-Educated*

Roland A. Amann†
Tobias J. Klein‡

first version: December 16, 2005
this version: January 1, 2006

Abstract

Many studies investigating wage-tenure profiles find that white-collar employees have steeper profiles in tenure than blue-collar workers. This paper takes a closer look at a more homogeneous group of individuals, namely individuals who have obtained the highest secondary degree. Using the German Socio-Economic Panel (GSOEP), we find that among those well educated individuals longer tenure does not necessarily reflect a higher productivity of an employee. In particular, we find that those types who stay shorter have higher returns to tenure but earn less on average. Our control function approach to estimation allows us to disentangle this from estimates of general returns to tenure which we find to be rather low. Furthermore, the wage profiles of white collar workers appear to be substantially different between college graduates and non-graduates. Individuals with a college degree obtain steeper profiles. Our results suggest that certain majors are responsible for the different shapes since the steepness is particularly pronounced for degrees in Social Science and Medicine.

JEL Classification: J31.
Keywords: Returns to tenure, unobserved heterogeneity, control function approach, nonseparable model.

*This version has been prepared for submission to the workshop "Wage Growth and Mobility: Micro-, Macro and intergenerational Evidence" to be held at the ZEW in Mannheim March 24 and 25, 2006. The authors thank the Deutsche Forschungsgemeinschaft for financial support.

†University of Konstanz. *Address:* University of Konstanz, Department of Economics, PBox D136, 78457 Konstanz, Germany. *E-mail:* Roland.Amann@uni-konstanz.de.

‡University of Mannheim. *Address:* University of Mannheim, Department of Economics, Chair Prof. Stahl, Ph.D., 68131 Mannheim, Germany. *E-Mail:* klein@econ.uni-mannheim.de.

1. Introduction

Tenure describes an individual's working time span in a firm. The length of this time span is influenced by a variety of factors including match specific factors as well as macroeconomic crises or booms. Furthermore, sector or firm specific shocks could affect lay-offs. Along with these factors the type of the employee and hence match quality between the employee and the firm plays an important role as well. Depending on his type an employee can get fired or he can quit voluntarily in order to switch to a new job. The former case is more likely for unproductive individuals whereas the latter case concerns individuals who switch to a better job. In this paper, we look at employees who have attained the highest secondary school degree in Germany. We believe that this type of employee is relatively more involved in switching his or her job because of a better job position.

This study belongs to the classical wage-tenure literature which identifies and estimates the returns to tenure and experience. In a lively debate, Altonji and Shakotko (1987) and Topel (1991) developed two different methodologies to deal with the inherent problem that the job match component in a standard log wage equation is not exogenous to tenure and experience. Agents with longer tenure have more to give up when moving to a new job since they will lose the rewards to job-specific tenure obtained on the current job. Therefore, these agents require a higher job match component in order to switch jobs. Likewise, match quality improves as agents move to better jobs. Altonji and Shakotko (1987) and Topel (1991) both argue that this matching process leads to a positive correlation between the job match component and labor market experience.

Based on the methods developed by Altonji and Shakotko (1987) and Topel (1991) there are many papers estimating tenure effects on wages.[1] For instance, Bratsberg and Terell (1997) analyze the difference in wage growth between young black and white men. Mascle-Allemand and Tritah (2005) compare wage profiles between states with or without employment protection legislation. Another application has been undertaken by Connolly and Gottschalk (2001). The authors are interested in the analysis of different tenure effects for different levels of education.

These applications have in common that (i) controlling for unobservable job matching components results in estimates of the effects of tenure on wages which are positive but low and (ii) the data sets include individuals from various educational levels. In this paper, we focus our attention on the group of well-educated males and show that the commonly obtained results do not directly apply to this group.

Our Imbens and Newey (2003) type control function approach allows for type specific matching patterns within this relatively homogeneous subpopulation of well-educated mostly white collar employees. We explicitly allow for interaction effects between unobservable factors determining tenure and observable covariates in the structural wage equation. Moreover, we include the undergraduate major as a covariate in order to uncover differences between college graduates and non-graduates and find substantial differences for some majors.

Our main findings are the following. First, those types who stay shorter have higher

[1] For other approaches to identify the effect of tenure on wages, see *inter alia* Abraham and Farber (1987) as well as Dustmann and Meghir (2005).

returns to tenure but earn less on average. Our control function approach allows us to disentangle this from estimates of general returns to tenure which we find to be rather flat.

Second, we find that individuals with certain college degrees obtain steeper profiles of wages in tenure. This is particularly pronounced for those who have obtained a degree in Medicine and Social Science.

2. Econometric Approach

In this paper, we aim at estimating identifiable features of a structural wage equation in which tenure is included as a scalar endogenous variable.

Our approach is a direct application of results developed by Imbens and Newey (2003). In particular, they consider two-equation triangular simultaneous equations models with a reduced form for the endogenous regressor and a structural equation for the outcome of interest. They show nonparametric identification of several features of the outcome equation and propose a nonparametric two step series estimator.[2]

Assumption 1 (Structural Equation): We let

$$y_{ijt} = g(t_{ijt}, z^1_{ijt}, \varepsilon_{ijt}) \tag{1}$$

be the structural equation for log wage y_{ijt} of individual i in firm j at time t. g is a polynomial in tenure, t_{ijt}, exogenous variables, z^1_{ijt}, such as age and a time variable, and a structural error term ε_{ijt} which is vector valued. We think of this structural error term as being composed of several components including a fixed individual specific error component, ε_i, a fixed job match specific error component, ε_{ij}, an individual specific transitory component, ε_{it}, a transitory match specific component, ν_{ijt}, and an economy wide wage disturbance, ε_t.

Additional to indicator variables for an individual's major we include the age of individuals in z^1_{ijt} in order to contrast the returns to tenure, by major, to the returns of general experience. We decided to include age rather than actual experience since the latter is likely to be endogenous. The theoretical background for our concern is given by Jovanovic (1979) and search models such as Burdett (1978) implying that the job matching error component is most likely correlated with actual experience.[3]

Assumption 2 (Reduced Form): Define $\tilde{t}_{ijt} \equiv t_{ijt} - \overline{t_{ij}}$, where $\tilde{t}_{ijt}$ is the deviation of i's tenure, t_{ijt}, in firm j at time t from the average tenure of individual i in firm j in the sample, $\overline{t_{ij}}$. Then, our reduced form for tenure is

$$t_{ijt} = h(\tilde{t}_{ijt}, z_{ijt}, \eta_{ijt}) \tag{2}$$

[2]This is in contrast to Newey, Powell, and Vella (1999) who consider additive structures. Blundell and Powell (2003) survey the recent literature for such models and form the terminology "average structural function" for a prominent identifiable feature which is linked to the average treatment effect parameter in program evaluation.

[3]Additionally, an endogenous control for general experience would possibly influence the coefficient of the tenure variable. See also Altonji and Shakotko (1987) for details.

where h is a polynomial in $\tilde{t}_{ijt}$, exogenous variables, z_{ijt}, which include z^1_{ijt} as a subvector, and a reduced form error term, η_{ijt}.

For our analysis, we are interested in the expected value of wages given covariates and the reduced form error which we interpret as a latent type variable,

$$\mathbb{E}[y_{ijt}|z^1_{ijt}, \eta_{ijt}] = \mathbb{E}[g(t_{ijt}, z^1_{ijt}, \varepsilon_{ijt})|z^1_{ijt}, \eta_{ijt}].$$

Imbens and Newey (2003) show that this identifiable feature of the structural wage equation is identified from observations once we control for the endogeneity of tenure by including the reduced form error into the second stage regression. Essentially, invertibility of the reduced form equation in its scalar disturbance ensures identification. In our case, this condition is satisfied since the reduced form is a polynomial which is chosen so that it is strongly increasing in its error term.

Assumption 3 (Stochastic Restrictions): We assume that the observations are independently distributed across ijt.[4] Moreover, we assume that $\tilde{t}_{ijt}$ and z_{ijt} are jointly independent of ν_{ijt} and η_{ijt} for all ijt. This allows for selection on unobservables, i.e. that η_{ijt} is not independent of ε_{ijt}. The characterization of the endogeneity of tenure based on the proposed structure will be at the center of the empirical analysis.

Our specification is along the lines of Altonji and Shakotko (1987) who use $\tilde{t}_{ijt}$ as an instrument for tenure in a classical instrumental variables regression context. In such a linear regression model the components of the error term ε_{ijt} enter linearly into the outcome equation so that

$$\varepsilon^{\text{IV}}_{ijt} \equiv \varepsilon_i + \varepsilon_{ij} + \varepsilon_{it} + \varepsilon_t + \nu_{ijt}.$$

Then, the instruments are, by construction, uncorrelated with individual match quality, ε_{ij} and individual specific components ε_i since $\tilde{t}_{ijt}$ sums to 0 over the sample years in which individual i is in job j and ε_i as well as ε_{ij} are constant for i in job j. Moreover, Altonji and Shakotko (1987) argue that $\tilde{t}_{ijt}$ is likely to be independent of time specific idiosyncratic and macroeconomic shocks, ν_{ijt}, since they do not affect the wage in the current job relative to other jobs. This is also validated by previous studies such as Topel (1991) which show that ν_{ijt} follows a random walk. For these reasons, Altonji and Shakotko (1987) are confident that $\tilde{t}_{ijt}$ is uncorrelated with ε_{ijt} which qualifies it as an instrument for tenure.

In this study, we assume full independence between the tuple of observables, $\tilde{t}_{ijt}$ and z_{ijt}, and the tuple of unobservables, ε_{ijt} and η_{ijt}, which is stronger than uncorrelatedness. However, our set of identifying assumption is considerably weaker than traditional instrumental variables or conditional independence assumptions since it allows for unobserved factors that jointly determine wages and tenure conditional on observables. Moreover, if we would choose g to be only a first order polynomial which is similar to a linear instrumental variables specification, uncorrelatedness would suffice in order to identify the

[4]This assumption is stronger than it is actually needed. For example, our estimator would still be consistent, though not efficient, if η_{ijt} was serially correlated. However, standard errors will be bootstrapped so that the loss we risk is mainly a loss of efficiency, comparable to the loss one incurs when estimating a random effects panel model when a fixed effects model is valid.

average return to tenure. Still, our approach would not restrict the correlation between the error terms ν_{ijt} and η_{ijt} which is nonzero whenever unobservable factors confound wages and tenure.

3. Data

The data we use for our analysis stem from the German Socio-Economic Panel (GSOEP), a longitudinal database that started in 1984. For our purpose, we only use the sample F starting in 2000. It contains information about the last grade in German and Math that we use in order to control for differences in school achievement. Furthermore, we only analyze employed men from West Germany as women and individuals working in East Germany decide upon their career based on systematically different circumstances. The outcome of interest is the nominal log annual wage. We include a time trend in order to account for wage inflation which was very low during the sample period. Since we are interested in the return to tenure of the well-educated, we restrict our sample to people who attain at least the degree "Hochschulreife". This degree is required in order to attend higher education in Germany. Furthermore, we focus only on individuals who are older than 28 and younger than 65. Some summary statistics are reported in Table 1.

Table 1: Summary statistics

Variable	*Mean*	*Std.*	*Min.*	*Max.*
log annual wage	10.621	0.715	5.703	12.2
tenure	12.842	10.501	0	44
age	42.580	9.323	28	65
SCHOOL ACHIEVEMENT				
grade German	2.653	0.796	1	5
grade Math	2.487	1.008	1	5
UNDERGRADUATE MAJOR				
Art	0.014	0.116	0	1
Business or Economics	0.060	0.237	0	1
Education	0.098	0.298	0	1
Engineering	0.077	0.267	0	1
Humanities	0.020	0.140	0	1
Law	0.029	0.167	0	1
Medicine	0.027	0.161	0	1
Science	0.075	0.263	0	1
Social Science	0.023	0.15	0	1
other college degree	0.297	0.457	0	1

1391 observations across individuals and time

4. Specification and Results

Our data include a host of information about employers and their employees. For example, there is information on whether the employer is the public sector or a private firm, as well as on the size of the firm. Moreover, there are variables containing the number of years the employee was part time employed, full time employed, and unemployed. However, most of these variables are potentially endogenous. Therefore, and since we are interested in the returns to tenure by field and not by occupation, we exclude the above mentioned variables in our regression. We are well aware of the fact that the undergraduate major that is chosen by the individual might be endogenous as well. However, we can always think of the results as being obtained conditional on a given major.

Additional to the variables in Table 1 our set of variables includes indicator variables for the current state of residence (the "Bundesland").

Throughout, we estimate the first stage regressions by ordinary least squares and obtain fitted values of the residuals which we include in the second stage as a control function for unobservable factors confounding wages and tenure. Standard errors are obtained from $1,000$ bootstrap replications.

Reduced form estimates for the first stage are reported in Table 2. The first column is our baseline model. Obviously, our constructed variable $\tilde{t}_{ijt}$ is strongly correlated with tenure. Furthermore, the first stage estimation shows that people with a college degree stay substantially shorter in a firm than workers with only a secondary school degree. Our estimates of the "Bundesländer" fixed effects show that tenure is substantially shorter in Berlin with an estimate of -5.349 which is significant at the 1 per cent level.

In the second column, we interact $\tilde{t}_{ijt}$ with the indicators for an individual's major. None of these interaction terms is significant and the remaining coefficients are very similar. From these first step estimates, we obtain fitted values of the residuals and include them in various specifications for the second stage. Whenever interactions between the major and explanatory variables were included in the wage equation—this will be the case in columns 3 through 4 of Table 3—we fitted those residuals using the richer specification even though this did not alter our results.

Notice that according to the reduced form equation those individuals with a high value of η_{ijt} are more likely to be of a type that stays longer in a given firm, as compared to the average. Therefore, once we include fitted values for η_{ijt} as a control function in the structural wage equation, we can thereby not only control for the endogeneity of tenure but can, at the same time, assess the impact of high values of this control function on expected wages.

For the second stage estimates we implemented a random-effects panel estimator in order to estimates polynomials in tenure, a set of controls including age, as well as the first stage residuals.[5] By construction of the reduced form, conditional on general experience,

[5]For some individuals there is just one observation in our data. Therefore, a fixed effects model could not be implemented. Furthermore, education for a given individual does not vary across time. Strictly speaking, Assumption 3 even suggests to estimate the coefficients by OLS since independence of the observations across ijt has been assumed. However, Assumption 3 is stronger than needed in our context and we will try to modify it in order to make better use of the panel structure of our data set in

	(1) baseline specification	(2) interaction terms
$\tilde{t}_{ijt}$	1.266**	1.380**
	(0.379)	(0.521)
$\tilde{t}_{ijt}$ sq.	-0.010	-0.011
	(0.007)	(0.008)
age	-0.077	-0.084
	(0.163)	(0.164)
age sq.	0.011**	0.011**
	(0.002)	(0.002)
Art	-7.322**	-7.232**
	(1.410)	(1.420)
Business or Economics	-1.973**	-1.976**
	(0.709)	(0.712)
Education	-0.846	-0.848
	(0.608)	(0.610)
Engineering	-3.844**	-3.844**
	(0.649)	(0.651)
Law	-1.953*	-1.958*
	(0.984)	(0.988)
Medicine	-4.911**	-4.909**
	(1.006)	(1.010)
Humanities	-2.939*	-2.948*
	(1.150)	(1.154)
Science	-5.025**	-5.029**
	(0.666)	(0.669)
Social Science	-5.214**	-5.213**
	(1.084)	(1.087)
other college degree	-1.163**	-1.166**
	(0.425)	(0.427)
interactions terms $\tilde{t}_{ijt}$ × major	no	yes
N	1391	1391
R^2	0.70	0.70
Standard errors in parentheses + significant at 10%; * significant at 5%; ** significant at 1%		

Notes: The dependent variable is tenure. We also included a set of indicator variables for the state of residence as well as a time trend and the grade in German and Math.

Table 2: Reduced form first stage regressions

those individuals with high (low) values of η_{ijt} are associated with longer (shorter) than population average tenure in a firm. Importantly, and by construction, η_{ijt} includes match specific factors since $\tilde{t}_{ijt}$ is uncorrelated with them by construction.

Table 3 contains estimates for the wage equation for different specifications. The first column is the baseline model in which we do not control for unobserved heterogeneity. The obtained results are in line with common expectations, namely that wages are positively correlated with general experience measured by age, and tenure. Moreover, wages seem to be concave in both general experience and tenure. The grade in German and Math was also included in the set of regressors. Whereas the former turned out to be mostly insignificant across specifications, the latter entered as one would expect: a better grade in Math is associated with higher incomes. The coefficient was around 0.04 across all specifications and significant throughout (for column (1) at the 1% level, for column (2) and (3) at the 10% level and for column (4) to (6) at the 5% level).

In Table 4 we tabulate the coefficients of the major indicators in column (1) of Table 3 as a descriptive statistic. There are substantial wage differences mostly between no college degree and a degree in either Economics, Education, Engineering, Medicine, Humanities, and Science. Although these differentials are detrended and conditional on age, tenure, school grades, the degree itself might well depend on an individual's type and hence is possibly endogenous. Moreover, the impact of age and tenure on wages might well differ across majors. These challenges are at the core of our structural empirical analysis.

The results of our structural estimation procedure that has been described in Section 2 are reported in column (2) to (6). In these columns, we include the fitted first stage residual $\hat{\eta}_{ijt}$ in order to control for the individual's type.[6] In column (2) we interact $\hat{\eta}_{ijt}$ with tenure. This results in a higher effect of potential experiences on wages, which is still highly significant, and an estimate for the effect of tenure on wages that is no longer significant.

Importantly, the estimate of the interaction between $\hat{\eta}_{ijt}$ and tenure is negative and significant at the 10 % level. The interpretation is that people that are of the type which stays longer than expected in a given firm are facing lower return to tenure. workers.

In column (3), we take the specification from column (2) and interact $\hat{\eta}_{ijt}$ with the major indicators as well in order to uncover how this effect varies by major. Importantly, we still obtain lower return to tenure for stayers. The coefficient of the interaction between $\hat{\eta}_{ijt}$ and tenure is significant at the 1% level. At the same time, higher values of $\hat{\eta}_{ijt}$ imply higher wages on average. This means that high values of $\hat{\eta}_{ijt}$ are associated with higher wages that exhibit lower returns to tenure.

Column (4) contains estimates of a specification where we interact age instead of tenure with $\hat{\eta}_{ijt}$. The obtained results for this specification are similar, which is not surprising since age and tenure are highly correlated: in general the older an individual the higher his tenure. Still, the general returns to tenure are insignificant along with the returns to general experience as measured by age. We interpret the coefficient of the interaction

subsequent versions of this paper. We are well aware of the fact that the proceeding that was chosen is very much *ad hoc*.

[6]Since the first stage residual was estimated the standard errors for the second stage go up in general once we include the first stage residual into the wage equation.

	(1) descriptive	(2) Struct. I	(3) Struct. II	(4) Struct. III	(5) Struct. IV	(6) Struct. V
age	0.161**	0.232**	0.387**	0.131	0.311**	0.135
	(0.031)	(0.078)	(0.086)	(0.083)	(0.103)	(0.083)
age sq.	-0.002**	-0.002*	-0.004**	-0.001	-0.003**	-0.002+
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
tenure	0.067**	0.043	-0.086+	0.060	-0.034	0.067
	(0.010)	(0.087)	(0.051)	(0.053)	(0.057)	(0.054)
tenure sq.	-0.001**	-0.001	0.002	-0.001	0.001	-0.001
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
$\hat{\eta}_{ijt}$		0.052	0.162**	0.283	0.110	0.284
		(0.097)	(0.062)	(0.210)	(0.070)	(0.217)
$\hat{\eta}^2_{ijt}$		0.001	0.003	-0.013*	0.002	-0.013*
		(0.002)	(0.002)	(0.005)	(0.002)	(0.006)
tenure $\times$ $\hat{\eta}_{ijt}$		-0.007+	-0.011**		-0.009*	
		(0.004)	(0.004)		(0.005)	
tenure $\times$ $\hat{\eta}^2_{ijt}$		-0.000+	-0.000		-0.000	
		(0.000)	(0.000)		(0.000)	
tenure sq. $\times$ $\hat{\eta}_{ijt}$		0.000*	0.000*		0.000*	
		(0.000)	(0.000)		(0.000)	
age $\times$ $\hat{\eta}_{ijt}$				-0.013+		-0.013+
				(0.007)		(0.008)
age $\times$ $\hat{\eta}^2_{ijt}$				0.000*		0.000*
				(0.000)		(0.000)
age sq. $\times$ $\hat{\eta}_{ijt}$				0.000*		0.000+
				(0.000)		(0.000)
interactions tenure $\times$ $\hat{\eta}_{ijt}$ $\times$ major	no	no	no	no	yes	yes
interactions tenure and tenure sq. $\times$ major	no	no	yes	no	yes	no
interactions age and age sq. $\times$ major	no	no	no	yes	no	yes
N	1391	1391	1391	1391	1391	1391

Bootstrapped standard errors in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

The dependent variable is the log annual wage. We included a set of degree indicators, a time trend in order to control for general wage inflation, a set of state of residence indicators as well as the grade in German and Math in order to control for measurable ability.

Table 3: Outcome equation

major	wage differential relative to no degree
Art	-0.193
	(0.203)
Economics	0.317**
	(0.083)
Education	0.216**
	(0.045)
Engineering	0.554**
	(0.053)
Law	0.042
	(0.085)
Medicine	0.619**
	(0.151)
Humanities	0.403**
	(0.061)
Science	0.391**
	(0.076)
Social Science	0.056
	(0.171)
other college degree	0.247**
	(0.032)
Bootstrapped standard errors in parentheses + significant at 10%; * significant at 5%; ** significant at 1%	

Notes: Coefficients of indicators for major in column (1) of Table 3.

Table 4: Wage differentials

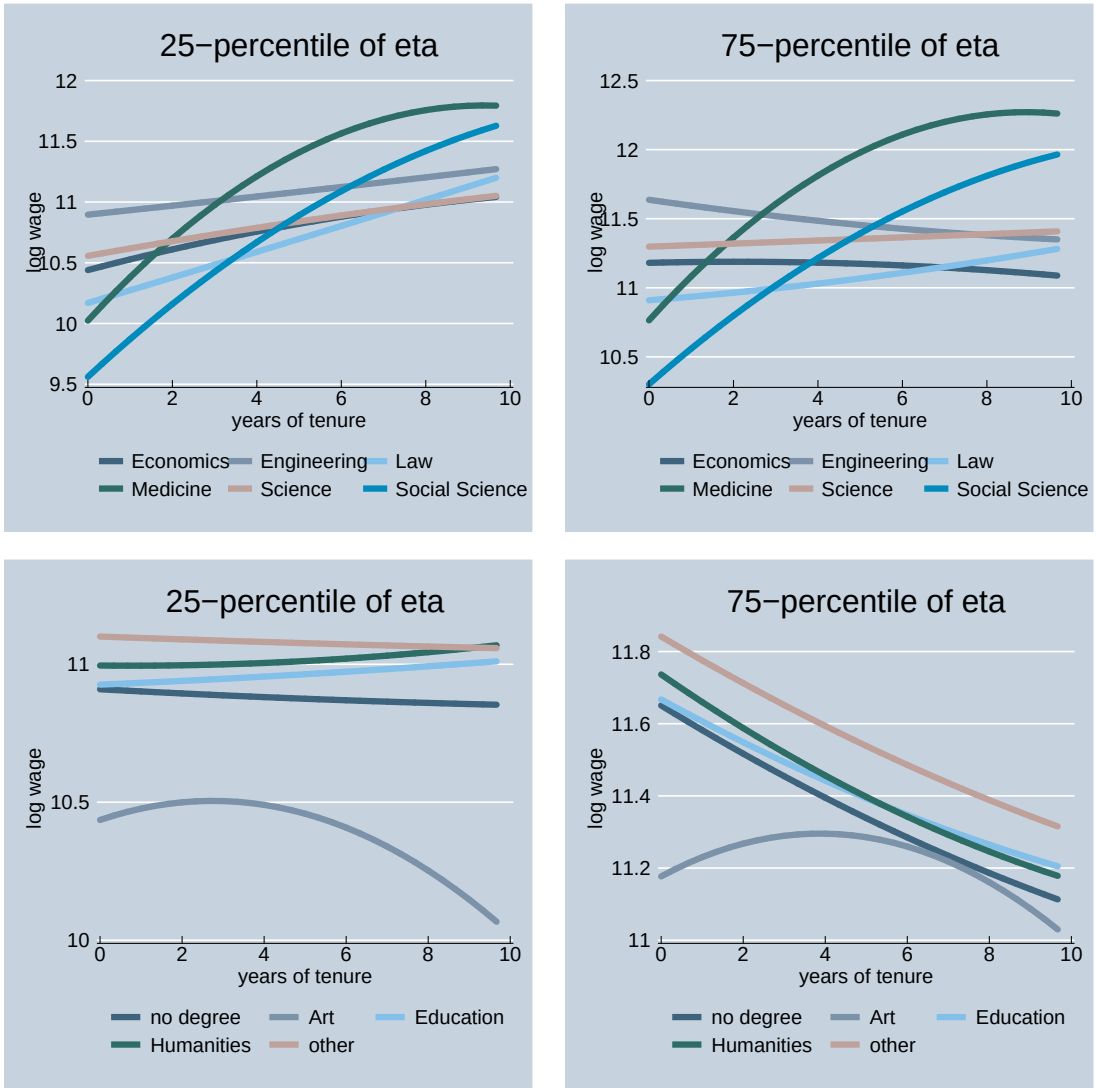

Figure 1: Wage-tenure profiles

between age and $\hat{\eta}_{ijt}$ as evidence for the returns to general experience being steeper and lower on average for low-$\hat{\eta}_{ijt}$-types as compared to high-$\hat{\eta}_{ijt}$-types.

degree	Mean estimate	Std. error
no college degree	12.993	(0.507)
Art	6.300	(2.299)
Economics	10.877	(1.100)
Education	19.092	(0.856)
Engineering	8.259	(0.969)
Humanities	18.900	(1.894)
Law	13.370	(1.585)
Medicine	5.808	(1.648)
Science	8.712	(0.983)
Social Science	8.266	(1.772)
other college degree	14.074	(0.493)

Table 5: Mean tenure by degree

Finally, the specifications in column (5) and (6) stem from the ones in (3) and (4) augmented with additional interaction terms. In Figure 1 we illustrate this graphically by plotting the wage-tenure profile, as estimated in column (5) of Table 3, by major for two different values of $\hat{\eta}_{ijt}$, namely the 25 and 75 percentile. The graphs are plotted for a representative 42-year old man in 2003 in Baden-Württemberg with a grade in German of 3 and 2 in math. Interestingly, the slope is decreasing in $\hat{\eta}_{ijt}$. Moreover, the profile for those having a degree in Medicine and Social Science are particularly steep, though starting from a lower level. However, average tenure varies substantially by major as shown in Table 5. In Figure 1 it became apparent that the wage tenure profile is especially steep for those having studied Medicine and Social Science. Interestingly, tenure for those employees is relatively short on average on the one hand, and the profile becomes flatter right around the average.

5. Concluding Remarks

In this paper we have looked at wage tenure profiles from a different perspective. We focus on well-educated employees and show that within this group stayers are not necessarily more productive than quitters which contrasts the general belief that they are. Using a control function approach, we have disentangled returns to tenure from returns to type and interaction effects between the two with the major of a college degree. We find that profiles are steeper in tenure for those having studied Medicine and Social Science. In general, we find that types staying shorter in a job have higher returns to tenure but earn less on average. This lets us believe that rather good types were switching jobs voluntarily as opposed to involuntary layoffs.

References

Abraham, K. G., and H. S. Farber (1987): "Job Duration, Seniority, and Earnings," *American Economic Review*, 77(3), 278–297.

Altonji, J. G., and R. A. Shakotko (1987): "Do Wages Rise with Job Seniority?," *Review of Economic Studies*, 54(3), 437–459.

Blundell, R., and J. L. Powell (2003): "Endogeneity in nonparametric and semiparametric regression models," in *Advances in Econometrics, Proceedings of the World Meetings, 2000*, ed. by L. Hansen, Amsterdam. North Holland.

Bratsberg, B., and D. Terell (1997): "Experience, Tenure, and Wage Growth of Young Black and White Men," *Journal of Human Resources*, 23(5), 659–682.

Burdett, K. (1978): "A Theory of Employee Job Search and Quit Rates," *American Economic Review*, 68, 212–220.

Connolly, H., and P. Gottschalk (2001): "Returns to Tenure and Experience Revisited—Do Less Educated Workers Gain Less from Work Experience?," Working paper, Boston College.

Dustmann, C., and C. Meghir (2005): "Wages, Experience and Seniority," *Review of Economic Studies*, 72(1), 77–108.

Imbens, G. W., and W. K. Newey (2003): "Identification and Estimation of Triangular Simultaneous Equations Models Without Additivity," Mimeograph, Presented at the 2003 EC2 conference held in London.

Jovanovic, B. (1979): "Job Matching and the Theory of Turnover," *Journal of Political Economy*, 87(5), 972–990.

Mascle-Allemand, A.-L., and A. Tritah (2005): "Returns to Tenure and Employment Protection Policies in the US," Discussion paper, GREMAQ.

Newey, W., J. L. Powell, and F. Vella (1999): "Nonparametric Estimation of Triangular Simultaneous Equations Models," *Econometrica*, 67(3), 565–603.

Topel, R. H. (1991): "Specific Capital, Mobility, and Wages: Wages Rise with Job Seniority," *Journal of Political Economy*, 99(1), 145–176.