

JOB TENURE AND LABOUR MARKET REGULATION: A COMPARISON OF BRITAIN AND ITALY USING MICRO DATA

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ABSTRACT

Job Tenure and Labour Market Regulation: A Comparison of Britain and Italy using Micro Data*

Given a general belief that jobs last longer in tightly regulated labour markets, the presumption would be that jobs last longer in Italy than they do in Britain. We use two large micro datasets to address this issue. Surprisingly, we find a higher proportion of male workers in Britain than in Italy are in jobs that have lasted at least five years. This result holds conditioning on individual control variables. We find the opposite result for women, but there are reasons for treating this with some scepticism. This result suggests a complex relationship between labour market institutions and the reallocation of labour.

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NON-TECHNICAL SUMMARY

Economics journals and popular commentaries contain myriad comparisons of earnings and wages between countries. Recent policy discussions suggest that job tenure is also a very important dimension of the quality of a job and the general quality of life. But surprisingly there are very few international comparisons of job tenure. We make a start on filling this gap by providing comparative evidence for Britain and Italy, using two large micro datasets. This is an interesting pair of countries to study because, while they are similar in many ways, they have very different labour market institutions. We condition on a standard set of individual control variables to isolate a 'country' effect. We interpret this effect as providing some evidence of the impact of the various labour market institutions in each country on job tenure. An important example of this is the tightness of labour market regulation, particularly employment protection legislation (EPL), where the two countries differ quite markedly. Thus we focus some of our discussion on the relationship between labour market regulation, the aim of achieving flexible labour markets, and job tenure. Much has been made of the effect of labour market institutions on wage setting and on unemployment, but little has been said about job tenure. The presumption may be that the impact on job tenure reflects that on employment adjustment, i.e. longer jobs in more tightly regulated labour markets. This is the issue we begin exploring in this paper.

For an individual worker, job tenure depends solely on separation probability. The firing component of separations, and the hiring rate arise from labour demand. The impact of labour market regulation on this has been extensively studied. The theoretical result is that while the effect on stocks (employment, unemployment) is ambiguous, it is clear that tight regulation implies lower hiring and firing rates. On this basis, we would expect jobs to be more secure and last longer in Italy. Job tenure also depends on the quit rate component of separations, however, and the outcome here is less clear. Thus the overall impact of tight labour market regulation on the steady-state tenure distribution includes the effect on firing, and the further effect of this on search and job quits. Given the offsetting effects of lay-offs on quits, this impact is ambiguous. It is also the case that aside from this effect on quits, there may be equilibrating effects in the labour market acting to offset the labour market regulation. First, wages may change, though there is no clear view whether they will rise or fall. Either way, the net result may be that job security is little affected by the laws and the impact is felt on wages. Second, if the law only applies selectively, substitution into forms of production not subject to the

costs may occur. A particular example of this is a minimum firm size below which the legislation is less restrictive. Indeed, it is widely argued that this, along with fiscal incentives, is one of the reasons that the average firm size in Italy is so low (about ten). In this case, we would expect to see a different comparison when conditioned on firm size.

We address this question using surveys from Britain and Italy. These are two rather dissimilar datasets and we have to make a number of exclusions to produce comparable samples. The Italian data is from Social Security (INPS) records. INPS collects data both on employers (firms) and on individual employees. The entire private sector is covered (roughly 10 million employees and 1.2 million employers per year). Agriculture, self-employment, managers and public administration are also covered by INPS, but they are excluded from the dataset used in this study. The British dataset is the General Household Survey (GHS), a continuous multi-purpose survey which has been running since 1971. Every year some 10,000 households are sampled giving a total annual sample of some 30,000 individuals. For this study we used the GHS data for the four quarters of 1990 and extracted data on working males and females between the ages of 18 and 70.

Contrary to expectations, we do *not* find that more workers in Italy are in long jobs than in Britain. In fact, for male workers, the systematic component is that labour markets in Britain provide a higher chance of staying in a job for at least five years. The raw data tell us that 59% of British men over the age of 25 were in such a job, compared to 52% of Italian men in the same age group. We show that this result holds conditioning on age, occupation group, industry, employer size and broad wage level. We find the opposite result for women, but there are reasons for treating this with some scepticism. This result suggests that the relationship between labour market institutions and the reallocation of labour is *not* straightforward, and highlights a number of interesting research avenues to follow.

1. Introduction

Economics journals and popular commentaries contain myriad comparisons of earnings and wages between countries (for a recent example see OECD, 1995). Recent policy discussions suggest that job tenure is also a very important dimension of the quality of a job and the general quality of life. But surprisingly there are very few international comparisons of job tenure¹. We make a start on filling this gap by providing comparative evidence for Britain and Italy, using two large micro datasets. This is an interesting pair of countries to study because while they are similar in many ways, they have very different labour market institutions. We condition on a standard set of individual control variables to isolate a 'country' effect. We interpret this effect as providing some evidence of the impact of the various labour market institutions in each country on job tenure². An important example of this is the tightness of labour market regulation, particularly employment protection legislation (EPL), where the two countries differ quite markedly. Thus we focus some of our discussion on the relationship between labour market regulation, the aim of achieving flexible labour markets, and job tenure. Much has been made of the effect of labour market institutions on wage setting and on unemployment (among many examples see Bruno and Sachs, 1985, Layard, Nickell and Jackman, 1991), but little has been said about job tenure. The presumption may be that the impact on job tenure reflects that on

¹The OECD provides two comparisons: OECD (1984, 1993)

²Of course, it also captures differences in the mean values of unobserved variables, a point we return to below in the Results section

employment adjustment: ie. longer jobs in more tightly regulated labour markets. This is the issue we begin exploring in this paper.

It is surprising therefore, that we do *not* find that more workers in Italy are in long jobs than in Britain. In fact, for male workers, the systematic component is that labour markets in Britain provide a higher chance of staying in a job for at least 5 years. The raw data tell us that 59% of British men over the age of 25 were in such a job, compared to 52% of Italian men in the same age group. The conditional estimates confirm this and that the difference is statistically significant³. This result runs counter to the view that regulated labour markets provide greater stability of jobs.

The rest of the paper is organised as follows: Section 2 discusses the modelling of the distribution of job tenure and the potential impact of the nature of labour market regulation. Section 3 describes our two primary data sources. The results are presented in Section 4 and Section 5 concludes.

2. Modelling

For an individual worker, job tenure depends solely on her separation probability. This combines the quit probability and the layoff probability, though some argue that this is not a meaningful distinction (see McLaughlin, 1991). The steady state distribution of tenure over workers depends on the distribution of separation rates; but out of steady state, the tenure distribution depends on both separation rates and hiring rates. This is easy to see: a sudden burst of hiring will add weight to the low end of the

³ We have no detail on job tenure above 5 years: see below.

distribution and this will only return to the steady state distribution as time passes and workers leave according to the steady state separation rates.

Separation rates and hiring probabilities differ between people and share common components. Factors typically associated with differences include gender, age, occupation, industry, qualifications and local market conditions. The common components include the general state of demand and labour market regulation. In our empirical analysis we will control for the individual factors and the general state of demand in order to isolate an estimate of the overall difference between the two economies.

The firing component of separations, and the hiring rate arise from labour demand. The impact of labour market regulation on this has been extensively studied (see Bentolila and Bertola, 1990, Bertola, 1990, for example). The theoretical result is that while the effect on stocks (employment, unemployment) is ambiguous, it is clear that tight regulation implies lower hiring and firing rates. On this basis, we would expect jobs to be more secure and last longer in Italy⁴. However, job tenure also depends on the quit rate component of separations, and the outcome here is less clear. A formal model of job search by the employed (Burgess, 1992) shows an ambiguous effect of the firing probability on the likelihood of quitting. On the one hand, a higher firing probability means it is less worthwhile searching for another job because it may not last long; but there is an offsetting 'insurance' motive for engaging in search as the agent's present job may disappear. Thus the overall impact of tight labour market

⁴ We are unable to look at job security (i.e. layoffs) directly.

regulation on the steady state tenure distribution includes the effect on firing, and the further effect of this on search and job quits. Given the offsetting effects of layoffs on quits, this impact is ambiguous.

It is also the case that aside from this effect on quits, there may be equilibrating effects in the labour market acting to offset the labour market regulation. Firstly, wages may change. Lazear (1990) argues that wages may fall in a competitive market as discounted present value of the employment protection is competed away. On the other hand, European authors (Lindbeck and Snower, 1987, for example) have argued that wages may rise in unionised markets as unions' bargaining power is increased. In both cases, the net result may be that job security is little affected by the laws and the impact is felt on wages. Secondly, if the law only applies selectively, substitution into forms of production not subject to the costs may occur. A particular example of this is a minimum firm size below which the legislation is less restrictive. Indeed, it is widely argued that this, along with fiscal incentives, is one of the reasons that the average firm size in Italy is so low (about 10). In this case, we would expect to see a different comparison when conditioned on firm size.

3. Data

A comparison of Britain and Italy is informative because these two countries are at a similar level of economic development, have a similar industrial structure and macroeconomic history, but different labour market regulatory regimes. The latter

involves much stricter laws on firing workers in Italy. These are detailed in Emerson (1988). The two datasets we use are rather different, and we need to minimise the impact of this on our results. After a brief description of each we describe the procedures we follow to accomplish this. To define the key concept: a 'job' here means a job match, or an employment spell, not a job slot or position. It exists whilst a worker is attached to a particular employer.

3.1 The Italian Dataset: Italian Social Security (INPS)

For its own institutional purposes, INPS collects data both on employers (firms) and on individual employees. The entire private sector is covered (roughly 10 million employees and 1.2 million employers per year). Agriculture, self-employment, managers and Public Administration are also covered by INPS, but they are excluded from the dataset used in this study. Each worker may be connected - at any point in time - with the relevant firm: the two archives are connected by the identification code of the employer: it is therefore possible to assign employer's attributes to the employee.

Information recorded at the *firm* level includes: a firm identification code, location, 3-digit industry code, dates of opening and closure, monthly employment⁵, annual data on the number of employees (broken down into manual and non-manual workers), and the annual wage bill for manual and non-manual workers.

⁵ Hence job creation and destruction (measured by employment changes at one-year distance) and worker turnover (measured by positive and negative monthly changes of employment) can be computed at the firm level.

The *employee* records contain data identifying the worker and the employer, the place of work, annual earnings (before tax), number of months, weeks and days for which the wage is paid by the employer, the nature of the contract (full-time, part-time, training contracts) and occupation (defined by 6 broad categories). Note that the dataset does not contain information on educational qualifications. There is one record for each employment spell in the year: two forms will be recorded if during year t the worker moves to a new firm.

People born on the 10th of March, June, September and December in any year were selected from the employee archive and observed over the period January 1985 - December 1991. The resulting 1:90 random sample has been reorganised into a longitudinal dataset, where the unit of observation is the work-history of the selected employees⁶. The panel includes approximately 200,000 workers (on average 100,000 are observed in any one year) and 340,000 employment spells (complete or truncated). Each longitudinal record has been complemented by information on the relevant employer, drawn from the firm archive. Tenure on the current job is defined as the number of months between hiring and May 1991 if the hiring month is observed; it is truncated (greater than or equal to 77 months) if the hiring month is not in the observation period, ie. occurred before January 1985 (this is not a survey with retrospective questions). This data has been used to study worker turnover by Contini, Pacelli, Rapiti and Revelli (1996) and Pacelli, Rapiti and Revelli (1996).

⁶ Since the domain of the source is limited to employment in the private sector, periods between employment spells cannot be characterised in a precise way: it is not possible to distinguish between moves to unemployment, to self-employment, to employment in the public sector and exits from the labour-force.

3.2 The British Dataset: General Household Survey (GHS)

The GHS is a continuous multi-purpose survey which has been running since 1971. Every year some 10000 households are sampled giving a total annual sample of some 30000 individuals. The questionnaire has good coverage of socio-economic characteristics dealing with education, employment, health, housing, family composition etc.. A core set of questions under these categories are asked each year to give an extremely rich source of information on the changing characteristics of Great Britain. For this study we used the GHS data for the 4 quarters of 1990 taken from the GHS surveys of 1989 and 1990 and extracted data on working males and females between the ages of 18 and 70. The key question which gives information on the length of job tenure is "*How long have you been with your current employer?*" and the answer is recorded in a banded variable which takes 15 values representing the values less than 4 weeks, 1 to 3 months, 4 to 6 months, 7 to 12 months, 1 to 2 years, 2 to 3 years, 3 to 5 years and then in bands of 5 year intervals up to 40 years or more.

The information collected on the individual covers age, sex, region of residence, highest educational qualification and length of education (in years). Also information on the employment characteristics such as employment status (employed or self-employed), the industry the individual works in, together with the type of job (managerial, non-manual, manual-skilled etc.) and the number of employees at the plant (as a banded variable). Finally we use earnings figures based on the weekly wage in order to look at high, medium and low wage earners. This data is often

constructed from the payslip information and hence can be thought of as reliable. In the instances when an individual reports a 'usual' income different from their latest payslip we have taken the 'usual' figure.

Unfortunately there is no available UK dataset which is comparable to the INPS. The only employer based survey is the New Earnings Survey which has a large sample size and is collected from employers on the basis of National Insurance numbers ending with two specific digits and hence has a panel dimension. The data, however, is not in the public domain and in any case only collects information on whether the individual has worked in the same job for one year or more. It also has no information on plant/establishment size.

Some true panel data sets do exist in the UK such as the BHPS, but this was hardly in existence in 1990, or the NCDS, which is too specific since it involves only individuals born in a single week in 1958, and hence neither of these are suitable for our purposes. Of the non-panel surveys only the Labour Force Survey can claim to be superior to the GHS in some respects but here, crucially, no income information was collected before 1992.

3.3 Comparability

The primary issue is to get comparable datasets from these two sources, one being a series of cross-sections, the other being a panel. There are other issues that we need to deal with, described below. There were two main possibilities in principle: (a) we can

construct a cross-section from the INPS to mirror a GHS cross-section, or (b) construct a pseudo-panel from the GHSs to mirror the INPS panel. This second route proved fruitless in that the only point on the survival function we could estimate *in common* for both countries was the probability of surviving in a job at least 1 - 2 years, conditional on having survived at least one year. Such a comparison would not be very informative about job tenure as a whole. So we follow the first route and extract a single cross-section from the Italian panel, to mirror the UK dataset. We selected all people working in May 1991, excluding managers and apprentices and impute the answer to a GHS-type tenure question; 19760 women and 43662 men are in the cross-section.

There are general issues of comparability between surveys and administrative archives. The latter may tend to underestimate tenure as legal transformations of firms can force a break in an employment record. In fact, in the INPS this is not a big problem. For firms of size 20 or smaller, legal transformations add 0.01 percentage points to a non-transformation separation rate of 52.75%; for firms of size 21 - 200, the numbers are 1.01 and 32.10; it is only for firms larger than 1000 that there is any impact, with the numbers being 3.08 and 11.7. Second, surveys contain more missing data than do administrative archives, and if job tenure information is missing for 'movers' more than 'stayers' this can cause bias. Again, this turns out not to be a problem: only half a percent of observations in the GHS have a missing job tenure figure in 1990.

There are also a set of secondary data comparability issues that need to be addressed. First, as noted above, while the INPS excludes the public sector the GHS does not contain an indicator of public/private sector. It does, however, contain 3-digit industry and occupation codes. We use another UK data source (the Labour Force Survey) which does have a public/private indicator and also the 3-digit industry and occupation codes; we locate the industries which are predominately public sector⁷ and delete individuals in those from our GHS dataset.

Secondly, for administrative (pension fund) reasons, the INPS data excludes “managers”, quite broadly defined. So we omit managers from the GHS data. Similarly, the self-employed are also excluded from the INPS dataset, and hence we exclude them from the GHS.

The size of the employer may be a significant factor influencing job tenure. However, the INPS data is based on firms, so we know the size of the enterprise/firm, whereas the GHS tells us the size of the establishment/plant. There is nothing we can do here, except to assume the following: small firms (from the Italian data set) are highly likely to be single establishment firms, ie. they are also therefore small establishments. Multi-site firms with total enterprise employment less than 25 are very rare⁸. So, on that basis, we have a proper sample of small plants in Britain, and a sample of small plants in Italy that is potentially biased in that it consists of small plants in single-establishment firms, but excludes small plants from large multi-plant

⁷ To be precise, this means 3-digit industries in which the proportion of public sector workers exceeds 40%.

⁸ Data from ISTAT confirm this.

firms. It would be interesting to see what proportion of small plants in Britain are also firms, but unfortunately the most appropriate dataset for this, the Workplace Industrial Relations Survey 1990, excludes all plants below size 25. We report results below differentiated by employer size.

Fourthly, note that the length of the employment spell is left-censored in Italy (since we only have the date of accession from 1985 and we use data up to May 1991). We therefore have no detail on job tenure above 5 years.

Finally, we must consider which years to use as the basis for comparison. Fixing the year in Italy as 1991 to allow for the maximum number of non-censored spells, the choice is the most appropriate year in Britain to use. The macroeconomic environment matters as mean job tenure tends to move in a counter-cyclical manner. Figure 1 plots out the unemployment rates for the two countries and it is clear that 1990 in Britain represents the same stage of the cycle as 1991 in Italy. We therefore adopt 1990 in Britain and 1991 in Italy as our comparison years.

4. Results

We look first at some simple cross-tabulations of the tenure distribution and individual's characteristics. These suffice to make a *prima facie* case for a systematic difference in tenure between the two countries. Then we adopt an ordered probit model to provide an analysis of the data.

The Italian data allow us to date elapsed employment durations very precisely up to the truncation point of 77 months: the British dataset provides banded data on tenure. We choose as the basis for our work to examine the number of workers in the bands: 0 - 12 months; 13 - 59 months and 60+ months. In the ordered probit models, we use 5 bands: 0 - 3 months, 4 - 12, 13 - 24, 25 - 59 and 60+. The covariates we use are restricted by the variables we have in common between the two datasets: we use age, industry, manual/non-manual, employer size (but see the discussion above), and wage quartile as a proxy for qualification level, which is unavailable for Italy. Most of the discussion focuses on the proportion of workers in their jobs for at least 5 years. The mirror image of these points can be made about the proportion in jobs for less than 12 months.

4.1 Distribution of Tenure in Britain and Italy

Table 1 presents the distribution of tenure for men and Table 2 does the same for women. The main point that we wish to highlight from Table 1 is that a higher proportion of male workers in Britain are in jobs that have lasted for at least 5 years. This is particularly noticeable if we take workers aged over 25, with 52% of such workers in Italy being in jobs of at least 5 years duration, compared to 59% in Britain⁹. This difference is reflected in the proportion of workers in new jobs: 14% of British men aged over 25 are in jobs that have lasted less than a year so far, compared to 17% in Italy. If we break down the data by age category, this difference between

⁹ Issues of statistical significance are addressed below in the context of the ordered probit models.

Britain and Italy is systematic: in all age groups bar one (36 - 40) the proportion of workers in long jobs is higher in Britain than Italy; in the exceptional category, the difference is minor: 55.9% compared to 56.9%. Across industries, the proportion in long jobs is higher in Britain in manufacturing and construction, though lower in services and transport. At least part of the reason in services is that this is particularly dominated by the (low tenure) young: 32% of the men working in services in Britain in our dataset are aged 25 or less, compared to 16% in Italy¹⁰. The pattern is largely repeated for the other breakdowns in the Table: for the bottom three wage quartiles of the wage distribution, there are more British workers in their jobs for 5 years or more than in Italy; in the top wage quartile it is reversed. For all but the biggest employing unit, there are more in long jobs in Britain than in Italy.

The second point to make about Table 1 is how alike the tenure patterns are *within* the two countries. The differences in tenure by age, by occupation group, by income quartile and by employer size are very similar between the two countries. The industry structure of tenure differs somewhat, with energy being an outlier in Britain and transport in Italy. This is likely to be related to the restriction of the dataset to the private sector: private sector transport and energy firms may be unusual in different ways in the two countries. The likelihood of being found in a job that has lasted at least 5 years increases more or less monotonically, reaching a plateau around the mid-40s, by which time about 70% of British men are in such job, compared to about 65% in Italy. Job tenure increases with firm size and with wage quartile.

¹⁰ A full multivariate analysis follows.

The picture for women in Table 2 has some similarities and some differences. The most notable difference is that the overall picture is reversed, with more women in long jobs in Italy than in Britain. Again, the difference is largely systematic: across most age groups, industries, wage bands and employer sizes. Interestingly, for the industry where most women work, services (accounting for 66% of the women in our British dataset and 46% of the Italian women), there is a slightly higher fraction in jobs for over 5 years in Britain than in Italy. The similarities are the same pattern for tenure by age, wage quartile and employer size. If we take the proportion in jobs over 5 years and look at the difference [Britain - Italy], the *shape* of this against age is the same for both men and women, though the *value* is generally positive for men and negative for women. The shape is that this number is high at the ends of the age distribution and lower (less positive for men, more negative for women) in the 36 - 50 age range.

Of course, it could be true that within the 5+ years category, jobs last much longer in Italy. However, within this category in Britain, jobs last a long time. The mean *elapsed* job tenure in Britain among men whose elapsed job tenure exceeds 5 years is 16 years (see Burgess and Rees, 1996); completed job tenure will be much higher than that. This does not leave much scope for a much greater number in Italy.

In Tables 3 and 4, we repeat the age and industry breakdowns within some employer size bands. We see that for men, in small employers the proportion in long jobs is higher in Britain, while the fraction with tenure less than one year is about the same.

In large plants/firms, the distributions are very similar. This pattern is not carried over to the multivariate analysis, so we do not emphasise it here.

4.2 Ordered Probit Analysis

These cross-tabulations simply describe the correlation of tenure with one factor at a time, and these factors are clearly correlated amongst themselves. Accordingly, we now present a multivariate analysis, and given the nature of our data, an ordered probit seems the most appropriate model.

Ordered probits are used when a multi-nomial discrete choice is inherently ordered and this extra information can be used in the estimation procedure. An underlying score which takes one of a set of discrete values is estimated as a linear function of the independent variables and a set of 'cut' points. Following Greene (1993) the underlying model has the form:

$$y^* = X\beta + \varepsilon$$

where y^* itself is unobserved but we do have

$$\begin{array}{ll}
 y = 0 & \text{if } y^* \leq 0 \\
 = 1 & \text{if } 0 \leq y^* \leq \mu_1 \\
 = 2 & \text{if } \mu_1 \leq y^* \leq \mu_2 \\
 = 3 & \text{if } \mu_2 \leq y^* \leq \mu_3 \\
 \dots & \dots \\
 \dots & \dots \\
 = J & \text{if } \mu_{j-1} \leq y^*
 \end{array}$$

then $P(y_j = i) = P(\mu_{i-1} < \beta_1 x_{1j} + \beta_2 x_{2j} + \dots + \beta_k x_{kj} + \varepsilon_j \leq \mu_i)$. The coefficients $\beta_1, \beta_2, \dots, \beta_k$ and the 'cut' points $\mu_1, \mu_2, \dots, \mu_{J-1}$ are estimated. μ_0 and μ_J are taken to be $-\infty$ and $+\infty$ respectively and ε is assumed to be normally distributed across observations.

We run an ordered probit on the five elapsed tenure categories available to us: 0 - 3, 4 - 12, 13 - 24, 25 - 59, 60+ months, separately for men and women, and separately for three firm/plant size categories. The results are in Tables 5 and 6. The first two columns present separate analyses for Britain and Italy, and the final column pools the data.

Taking the separate estimates first, we find that generally, the probability of having a long tenure is related in a positive and concave fashion to age. Tenure is generally lower in construction and services, and is higher for workers with higher wages. The pattern for tenure by a manual/non-manual split is interesting: manual workers appear to have a lower tenure in small employer units, but a longer tenure in bigger units. Comparing the two sets of coefficients, age clearly has a larger impact on tenure in Italy than in Britain, whereas the reverse is true for high wage/qualifications. The key results for this paper are contained in the final column. Pooling the data, we isolate the country effect of Italy with an intercept shift. The coefficient is negative in all firm sizes, and significant at conventional significance levels. The effect is bigger in larger units, but is significant among all groups. Holding constant age, industry affiliation, broad occupational group, and wage band, a male worker in Italy is less likely to have a long job tenure than in Britain.

Table 6 presents the same results for women. The patterns by age and wage differences are similar to those seen in Table 5. It is again true that age has a stronger impact on tenure in Italy than in Britain, whereas a high wage band has a stronger effect in Britain. The pattern in Britain is for a high wage band to matter more in larger employer units; this is true of the top quartile in Italy, but not the middle half. The key result in the pooled data is different, as would be expected from previous Tables. There is a strong and significant effect of the Italy dummy in the small establishment group: *ceteris paribus*, women in Italy in small establishments are more likely to have a longer job tenure. This effect is *only* present in small establishments: it is essentially zero and insignificant in other size bands.

Coefficients in ordered probit analysis are not easy to interpret in a straightforward way. The *quantitative* significance of the coefficient on the dummy for Italy can best be judged by looking at some predicted probabilities. Taking the results in Tables 5 and 6, we find that the probability of being in a job for at least five years for a 35 year-old worker is:

Employer size:	Probability that elapsed tenure is at least 5 years			
	Manual Worker in Manufacturing		Non-Manual Worker in Services	
	Britain	Italy	Britain	Italy
Men				
Size < 25	0.44	0.41	0.42	0.38
25 < Size < 100	0.53	0.49	0.42	0.38
100 <= Size	0.62	0.54	0.64	0.56
Women				
Size < 25	0.28	0.34	0.28	0.33
25 < Size < 100	0.50	0.50	0.40	0.40
100 <= Size	0.52	0.51	0.49	0.48

At age 35 in the middle half of the wage distribution.

A different way to cut the data is by industry. That is, we repeat the ordered probit analysis, but splitting up by industry, rather than by size band. Two useful results emerge from this. First, the manual worker dummy is negative in services, for both genders in both countries, and positive in manufacturing, again for both genders and in both countries. Manual workers in services are more likely to be unskilled and in manufacturing more likely to be skilled. Second, in the pooled estimates, the Italy dummy is positive in services but insignificant: 0.058 (se = 0.043) for men, and 0.047 (se = 0.031) for women. Thus the substantial difference between the proportions of male workers in services who had held their jobs for 5 years or more noted in Table 1 is largely due to the correlation of other factors: the age, wage level and occupation of the workers, rather than a country effect. In manufacturing, however, the Italy dummy is significantly negative for men, -0.128 (se = 0.038), and significantly positive for women, 0.229 (se = 0.049).

A final disaggregation is by age. In fact, restricting the sample to those over 30, the Italy dummy is insignificant for the small employers, but remains significant and of the same sign for the large employers.

4.3 Commentary

What do these results tell us? The effects of most of the variables within each country are unsurprising: age, industry and broad skill category are all correlated with job tenure in the expected way. The main focus of interest in this paper is any systematic differences between Britain and Italy, holding these other factors constant. In fact, we

find that jobs tend to last longer for men in the British labour market, *ceteris paribus*, and last less long for women. The difference for men holds across all employer size bands, holds for manufacturing rather than services; the difference for women is confined to small units and again for manufacturing. It could be that this contrast between the results for men and women indeed reflects some substantive difference between the way the institutions of the British and Italian labour markets impinge on jobs held by men and by women. There is, however, another explanation: there may be systematic differences in the unobserved variables between the two countries and two genders. Note that, in common with all studies of job tenure, we do not make a sample selection correction analogous to that routinely made in studies of earnings¹¹. There are two major differences between the Italian and British labour markets for women: first, the participation rate is 37.9% in Italy and 63.4% in Britain¹². It may well be the case that the mean of the unobserved variables differs significantly between Italy and Britain: it may be that the Italian women who do participate have higher average ability, motivation or qualifications than do working women in Britain, thus increasing their likelihood of holding a job for a long time. Participation rates for men are very similar in the two countries¹³. Second, very few women in Italy work part-time, 11%, compared to 44% in Britain¹⁴ (the figures are 2.5% and 6.6% for men). We know that tenure tends to be lower among part-time workers (see Burgess and Rees, 1994). Thus it could be the case that the positive differential for Italy found for women is to some extent the result of systematic differences in unobserved

¹¹ It is hard to think of credible instruments that influence participation in general, but being uncorrelated with the probability of separation (in the absence of job-specific data).

¹² In 1990, employment to population ratios; source: OECD Employment Outlook, 1996.

¹³ It may be that this same argument explains the difference when we cut at age 30 (for some groups). Young people tend to graduate later in Italy and also to suffer higher unemployment. We thank Orazio Attanasio for this point.

¹⁴ In 1993; source: OECD Employment Outlook, 1996.

heterogeneity (reflected in the vastly different participation rates) and in part-time status. Given this, it seems not unreasonable to argue that the results for men are more trustworthy representations of *ceteris paribus* differences in the two national labour markets.

5. Conclusions

There is a general belief that jobs last longer in more tightly regulated labour markets. The economic foundation for this belief is in fact rather limited: while it is true that EPL regulations will reduce layoffs, the impact on quits is ambiguous. Nevertheless, the general presumption would be that jobs last longer in a country like Italy than a country like Britain. Surprisingly, there is very little work on international differences in job tenure to be able to check this view. We use two large micro datasets to address this issue. Contrary to expectations, we find a higher proportion of male workers in Britain than in Italy are in jobs that have lasted at least 5 years. We show that this result holds conditioning on age, occupation group, industry, employer size and broad wage level. We find the opposite result for women, but there are reasons for treating this with some scepticism. This result suggests that the relationship between labour market institutions and the reallocation of labour is not straightforward, and highlights a number of interesting research avenues to follow.

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Table 1: Tenure Distribution: Males

Months in present job:	BRITAIN				ITALY			
	%			Obs.	%			Obs.
	0 - 12	13 - 59	60 +		0 - 12	13 - 59	60 +	
Overall	18.9	33.4	47.7	2672	21.3	34.0	44.7	43662
Overall, Age > 25	14.1	26.9	59.0	2039	17.0	30.7	52.3	36747
Age								
18 - 25	34.4	54.4	11.2	633	44.2	52.1	3.7	6753
26 - 30	20.4	44.5	35.1	373	26.1	49.6	24.3	7307
31 - 35	17.8	32.6	49.7	304	20.5	35.1	44.4	6109
36 - 40	17.7	26.4	55.9	299	15.3	27.8	56.9	5417
41 - 45	14.4	19.3	66.3	285	12.7	22.7	64.6	6048
46 - 50	10.4	20.1	69.5	249	13.2	23.0	63.7	4835
51 - 55	6.7	19.7	73.6	208	12.2	21.9	65.9	4335
56 - 60	10.3	14.1	75.5	184	12.4	21.4	66.2	2368
61 - 65	3.7	23.4	73.0	137	8.6	25.3	66.1	372
Industry								
Energy	9.1	18.9	72.0	296	16.7	27.6	55.7	5753
Engineering	14.5	33.1	52.4	674	18.0	3.0	46.0	10901
Other Manufacturing	16.4	30.1	53.6	379	20.9	36.4	42.7	7397
Construction	25.6	32.9	41.5	301	37.4	38.2	24.5	5498
Services	24.3	42.2	33.4	760	21.8	33.9	44.3	10666
Transportation	21.9	30.3	47.8	251	13.5	27.1	59.4	3447
Manual/Non-Manual								
Manual	21.5	33.2	45.3	1469	23.5	35.3	41.2	29962
Non-Manual	15.8	33.7	50.5	1203	16.7	31.2	52.1	13700
Quartiles								
Quart 1	30.7	42.9	26.5	623	34.4	41.7	24.0	11376
Quart 2	18.9	35.3	45.8	623	21.1	39.3	39.6	10472
Quart 3	13.0	31.1	55.9	623	18.1	31.8	50.1	10897
Quart 4	14.4	26.3	59.3	803	11.2	23.2	65.6	10917
Size of plant (Britain)/firm (Italy)								
1 - 2	28.1	36.8	35.1	57	36.38	39.9	23.8	2386
3 - 24	30.2	36.6	33.2	642	29.3	41.2	29.5	13009
25 - 99	20.5	36.8	42.7	649	22.9	37.5	39.6	7381
100 - 999	12.9	32.4	54.7	970	18.1	33.4	48.6	9563
1000 +	10.6	23.3	66.1	348	10.7	22.6	66.7	11266

Table 2: Tenure Distribution: Females

	BRITAIN				ITALY			
	%			Obs.	%			Obs.
Months in present job:	0 - 12	13 - 59	60 +		0 - 12	13 - 59	60 +	
Overall	25.0	39.8	35.2	2510	22.3	39.4	38.2	19760
Overall, Age > 25	21.4	36.6	42.0	1928	18.0	34.3	47.7	14664
Age								
18 - 25	37.1	50.2	12.7	582	34.4	54.7	10.9	5011
26 - 30	28.1	44.1	27.8	313	24.5	45.3	30.1	4118
31 - 35	26.7	44.6	27.8	251	18.9	34.8	46.3	2893
36 - 40	28.0	39.5	32.6	304	15.7	29.7	54.6	2357
41 - 45	24.5	38.0	37.4	326	14.4	28.6	57.0	2295
46 - 50	16.9	32.5	50.6	249	13.0	27.0	60.0	1615
51 - 55	12.2	30.5	57.3	246	12.9	26.5	60.6	1055
56 - 60	8.6	23.9	67.5	163	13.4	24.3	62.3	292
61 - 65	7.9	22.4	69.7	76	12.5	28.1	59.4	64
Industry								
Energy	24.5	29.2	46.2	106	19.0	33.5	47.4	1092
Engineering	22.4	43.5	34.1	214	16.9	36.7	45.4	2699
Other Manufacturing	27.4	24.4	41.2	357	20.0	38.8	41.2	6145
Construction	24.6	37.7	37.7	69	23.2	45.2	31.6	345
Services	25.7	40.5	33.8	1661	26.2	41.0	32.7	8995
Transportation	24.5	48.9	26.6	94	15.3	36.8	47.9	484
Manual/Non-Manual								
Manual	27.2	36.0	36.8	611	23.5	39.2	37.3	9805
Non-Manual	24.3	41.0	34.7	1899	21.1	39.7	39.2	9955
Quartiles								
Quart 1	32.1	42.0	25.9	595	28.2	44.5	27.3	5158
Quart 2	27.9	42.6	29.5	594	27.6	41.7	30.6	4859
Quart 3	23.2	38.9	37.9	594	18.3	40.0	41.7	4974
Quart 4	18.3	36.3	45.4	727	14.6	31.0	54.3	4769
Size of plant (Britain)/firm (Italy)								
1 - 2	19.7	46.2	34.1	132	30.0	45.4	24.6	2312
3 - 24	29.6	42.1	28.3	938	26.2	44.3	29.5	7183
25 - 99	24.7	39.8	35.5	591	20.3	40.1	39.6	3404
100 - 999	22.4	36.6	41.0	680	18.5	33.6	47.9	3907
1000 +	15.4	33.3	51.3	156	14.1	29.5	56.3	2918

Table 3: Tenure Distribution by Firm Size: Males

Months in present job:	BRITAIN %			ITALY %		
	0 - 12	13 - 59	60 +	0 - 12	13 - 59	60 +
Firm Size: 3 - 24:						
Age						
18 - 25	41.7	46.6	11.8	44.3	51.0	4.7
31 - 35	29.2	49.2	21.5	27.7	38.8	33.5
41 - 45	21.0	24.2	54.8	23.1	35.1	41.8
51 - 55	17.2	24.1	58.6	17.8	31.4	50.8
Industry						
Energy	14.8	25.9	59.3	23.0	39.1	37.9
Engineering	26.8	41.5	31.7	26.1	45.0	28.9
Other Manual	26.1	55.4	38.5	25.8	41.8	32.4
Construction	35.6	33.7	30.7	39.4	39.1	21.5
Services	30.5	39.4	30.1	28.3	40.1	31.6
Transportation	35.6	27.1	37.3	25.1	42.1	32.8
Firm Size: 100+:						
Age						
18 - 25	25.0	62.5	12.5	40.2	57.5	2.3
31 - 35	12.3	26.0	61.7	13.2	24.9	61.9
41 - 45	9.0	15.2	75.9	8.4	16.9	74.7
51 - 55	4.8	19.4	75.8	9.5	16.1	74.4
Industry						
Energy	8.3	16.7	75.0	14.9	23.7	61.4
Engineering	10.4	30.3	59.4	13.1	30.9	56.0
Other Manual	11.2	25.4	63.4	17.1	30.9	52.0
Construction	18.1	36.2	45.7	26.1	39.0	34.9
Services	16.0	46.6	37.4	12.7	25.2	62.0
Transportation	17.2	26.2	56.6	8.0	21.1	70.9

Table 4: Tenure Distribution by Firm Size: Females

Months in present job:	BRITAIN %			ITALY %		
	0 - 12	13 - 59	60 +	0 - 12	13 - 59	60 +
Firm Size: 3 - 24:						
Age						
18 - 25	43.4	47.4	9.2	33.5	53.3	13.2
31 - 35	34.2	50.6	15.2	23.2	40.0	36.9
41 - 45	26.1	40.8	33.1	20.0	41.0	39.0
51 - 55	15.4	38.5	46.1	15.7	38.6	45.7
Industry						
Energy	28.6	42.9	28.6	23.1	39.3	37.6
Engineering	20.0	52.5	27.5	23.3	47.5	29.2
Other Manual	26.6	43.7	29.7	22.4	44.7	33.0
Construction	25.9	44.5	29.6	26.3	45.7	28.0
Services	30.5	41.0	28.5	30.0	43.7	26.3
Transportation	31.8	50.0	18.2	27.8	38.9	33.3
Firm Size: 100+:						
Age						
18 - 25	29.1	54.7	16.1	33.5	59.4	7.1
31 - 35	24.5	34.7	40.8	14.7	28.6	56.7
41 - 45	24.7	27.2	48.1	10.2	20.0	69.8
51 - 55	9.1	23.9	67.0	11.2	18.7	70.1
Industry						
Energy	21.5	30.4	48.1	17.3	31.1	51.6
Engineering	17.9	39.0	43.1	14.5	29.4	56.0
Other Manual	22.5	29.2	48.3	16.2	30.3	53.5
Construction	25.0	41.7	33.3	14.3	44.0	41.8
Services	22.2	38.1	39.7	18.6	33.6	47.7
Transportation	8.8	52.9	38.2	11.6	34.4	54.0

Table 5: Ordered Probit Results: Men

	Britain		Italy		Pooled	
Size < 25						
Age	0.051	(2.5)	0.111	(19.2)	0.104	(18.9)
Age Squared	0.000	(0.9)	-0.001	(13.8)	-0.001	(13.4)
Energy	0.401	(1.6)	0.006	(1.5)	0.054	(1.3)
Engineering	-0.063	(0.4)	0.145	(0.5)	0.019	(0.7)
Construction	-0.012	(0.1)	-0.513	(17.9)	-0.537	(19.3)
Services	-0.119	(0.8)	-0.076	(2.9)	-0.100	(3.9)
Transport	-0.166	(0.8)	-0.153	(3.3)	-0.186	(4.2)
Manual	-0.096	(0.9)	-0.053	(2.1)	-0.055	(2.3)
Mid Wage	0.431	(3.1)	0.182	(9.5)	0.188	(10.0)
Upper Wage	0.434	(2.7)	0.049	(1.3)	0.085	(2.3)
Italy	-	-	-	-	-0.085	(1.9)
No. Obs.	698		15318		16016	
25 <= Size < 100						
Age	0.059	(2.4)	0.129	(14.3)	0.118	(14.1)
Age Squared	0.000	(1.0)	-0.001	(10.2)	-0.001	(9.7)
Energy	0.369	(1.7)	-0.110	(2.2)	-0.101	(2.1)
Engineering	-0.099	(0.7)	-0.042	(1.1)	-0.061	(1.7)
Construction	-0.131	(0.8)	-0.641	(14.2)	-0.657	(15.5)
Services	-0.072	(0.5)	-0.239	(5.8)	-0.254	(6.6)
Transport	0.052	(0.3)	-0.156	(2.4)	-0.179	(3.0)
Manual	-0.042	(0.4)	0.104	(3.0)	0.088	(2.7)
Mid Wage	0.381	(1.8)	0.348	(10.9)	0.348	(11.3)
Upper Wage	0.575	(2.6)	0.352	(7.6)	0.373	(8.6)
Italy	-	-	-	-	-0.114	(2.4)
No. Obs.	648		7359		8007	
Size >= 100						
Age	0.100	(5.4)	0.198	(29.2)	0.184	(29.2)
Age Squared	-0.001	(3.2)	-0.002	(23.9)	-0.002	(23.4)
Energy	0.337	(2.6)	-0.066	(2.2)	-0.083	(2.8)
Engineering	-0.015	(0.2)	-0.009	(0.3)	0.001	(0.0)
Construction	-0.392	(2.7)	-0.388	(9.8)	-0.420	(11.1)
Services	-0.281	(2.4)	0.209	(7.0)	0.164	(5.7)
Transport	-0.289	(2.1)	0.273	(6.8)	0.256	(6.9)
Manual	0.168	(2.2)	0.093	(4.2)	0.104	(9.2)
Mid Wage	0.463	(2.1)	0.360	(11.9)	0.365	(5.0)
Upper Wage	0.790	(3.5)	0.539	(14.9)	0.567	(12.3)
Italy	-	-	-	-	-0.198	(5.6)
No. Obs.	1318		18064		19382	

Dependent variable has 5 categories: 1 (0 - 3 months); 2 (4 - 12 months); 3 (13 - 24 months); 4 (25 - 60 months); 5 (60+ months). 't' statistics in parentheses.

Note: Regional dummies included in individual country estimates, but not in the pooled estimation. Omitted industry is 'other manufacturing'. 'Mid Wage' means the middle two quartiles of the wage distribution, and 'Upper Wage' is the top quartile; the lowest quartile is the omitted category.

Table 6: Ordered Probit Results: Women

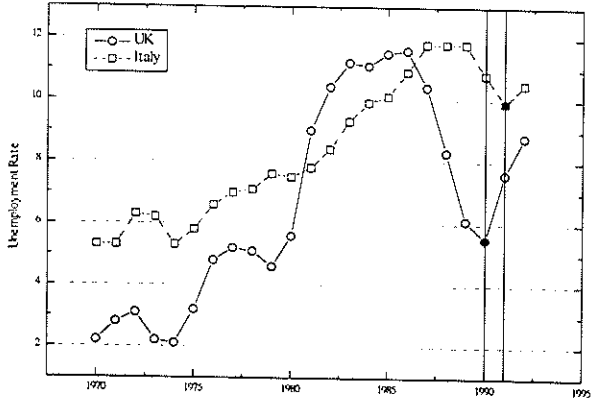
	Britain		Italy		Pooled	
Size < 25						
Age	0.020	(1.3)	0.091	(11.1)	0.067	(9.7)
Age Squared	0.000	(1.0)	-0.001	(7.5)	-0.001	(5.3)
Energy	-0.065	(0.2)	-0.079	(1.0)	-0.089	(1.2)
Engineering	0.076	(0.4)	-0.120	(2.7)	-0.101	(2.3)
Construction	0.136	(0.6)	-0.351	(4.4)	-0.336	(4.5)
Services	0.002	(0.0)	-0.324	(11.5)	-0.336	(12.6)
Transport	-0.056	(0.2)	-0.238	(2.0)	-0.280	(2.6)
Manual	-0.161	(2.2)	-0.226	(8.7)	-0.229	(9.5)
Mid Wage	0.323	(4.3)	0.055	(2.3)	0.077	(3.4)
Upper Wage	0.055	(0.4)	0.134	(3.3)	0.142	(3.7)
Italy	-	-	-	-	0.147	(4.0)
No. Obs.	1069		9461		10530	
25 <= Size < 100						
Age	0.031	(1.3)	0.159	(11.4)	0.126	(10.6)
Age Squared	0.000	(0.2)	-0.002	(8.7)	-0.001	(7.5)
Energy	-0.030	(0.1)	-0.265	(3.0)	-0.244	(2.9)
Engineering	-0.507	(2.4)	-0.047	(0.8)	-0.090	(1.6)
Construction	-0.246	(0.9)	-0.335	(2.1)	-0.426	(3.1)
Services	0.112	(0.7)	-0.522	(10.9)	-0.452	(10.3)
Transport	-0.427	(1.8)	-0.332	(2.1)	-0.481	(3.8)
Manual	-0.147	(1.4)	-0.079	(1.7)	-0.122	(2.9)
Mid Wage	0.403	(3.7)	0.300	(6.3)	0.293	(6.8)
Upper Wage	0.684	(4.2)	0.349	(5.2)	0.347	(5.8)
Italy	-	-	-	-	-0.003	(0.1)
No. Obs.	590		3387		3977	
Size >= 100						
Age	0.043	(1.9)	0.199	(17.7)	0.168	(16.8)
Age Squared	0.000	(0.3)	-0.002	(13.8)	-0.002	(12.6)
Energy	-0.010	(0.1)	-0.221	(3.9)	-0.230	(4.4)
Engineering	0.050	(0.4)	-0.078	(1.7)	-0.068	(1.6)
Construction	-0.261	(0.8)	-0.162	(1.3)	-0.213	(1.9)
Services	0.058	(0.5)	-0.190	(4.8)	-0.194	(5.4)
Transport	0.213	(1.0)	-0.180	(2.0)	-0.128	(1.6)
Manual	0.099	(1.0)	-0.074	(2.0)	-0.039	(1.1)
Mid Wage	0.470	(4.8)	0.147	(2.9)	0.216	(4.9)
Upper Wage	0.751	(5.7)	0.404	(6.9)	0.486	(9.6)
Italy	-	-	-	-	-0.025	(0.6)
No. Obs.	836		6401		7237	

Dependent variable has 5 categories: 1 (0 - 3 months); 2 (4 - 12 months); 3 (13 - 24 months); 4 (25 - 60 months); 5 (60+ months). 't' statistics in parentheses.

Note: Regional dummies included in individual country estimates, but not in the pooled estimation. Omitted industry is 'other manufacturing'. 'Mid Wage' means the middle two quartiles of the wage distribution, and 'Upper Wage' is the top quartile; the lowest quartile is the omitted category.

Figure 1

Figure 1: Unemployment Rate (OECD Standardised)







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