Are Judges Sensitive to Economic Conditions? Evidence from UK Employment Tribunals

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This version : December 2008

Abstract

This paper investigates whether judges deciding on unfair dismissal cases are sensitive to economic conditions faced by workers and firms. Using British data and controlling for case selection, I find that both the unemployment and the bankruptcy rates significantly decrease the probability of judges deciding in favor of dismissed employees. A one point increase in the unemployment rate leads to a 7 points decrease in this probability; this effect is however not significant for unemployed workers. These findings are consistent with the idea that judges, while tailoring firing costs to economic circumstances, are somewhat more sensitive to firms' interests.

JEL codes: J52, J65, K31, K41

1 Introduction

The legal regulation of contracts has important consequences for the incentives of economic agents to enter such contracts and abide by the contractual arrangements made. In the area of labor regulation, the legal costs of employment termination affect outcomes such as wages and employment levels. These costs can be particularly high if employers and employees disagree about the terms of the separation. Such disputes arise frequently due to a combination of the incompleteness inherent in employment contracts (Malcomson, 1999) and the institutional arrangements that are supposed to deal with the associated enforcement problems. Guided by the idea that workers' bargaining power is typically lesser than firms', regulators have been especially intent on protecting workers' interests in the event of employment termination. Thus, in most OECD countries, workers have a statutory right not to be unfairly dismissed, and this right can be pursued in front of labor courts. Even in the US, where no such

statutory right exists, there are multiple instances in which workers can dispute the legitimacy of the grounds for the termination of their employment. Examples include anti-discrimination legislation (Oyer and Schaefer, 2000), state-level exceptions to the employment-at-will doctrine (Autor et. al., 2006), and arbitration in unionized firms.

Allowing workers to sue their employers over the termination of employment gives rise to firing costs. There is a large body of literature discussing the impact of firing costs and employment protection legislation (EPL) on unemployment (OECD, 2006), but it is also possible for causality to run in the opposite direction, from unemployment to firing costs. Indeed, the costs borne by firms due to the regulation of employment contracts are determined both by the letter of the law and the way in which judges enforce the law (Bertola et al., 1999). Since economic conditions alter the payoffs to firms and workers resulting from the termination of an employment contract, they may influence judges' determination of what is fair in each particular case. Moreover, judges may feel that in a high unemployment context, it is more necessary to protect jobs, and they may thus become more pro-workers; conversely, judges may become more pro-firms if they feel that making firms bear extra costs when economic conditions are bad leads to increased bankruptcy risk.

This paper uses rich datasets from the U.K. to assess whether economic conditions affect judges' decisions in unfair dismissal trials. First, using aggregate data over the period 1985-2001, I find that workers' win rates in unfair dismissal trials are negatively and significantly affected by the unemployment rate. I next use a representative sample of applications to U.K. employment tribunals in 1990-1992. Controlling for a large set of case characteristics, I find that both the unemployment rate and the bankruptcy rate negatively and significantly affect the probability that a worker prevails at trial. Thus, a one percentage point increase in the unemployment

rate leads to a 7 points decrease in the probability of judges deciding in favor of dismissed employees, and a one point increase in the bankruptcy rate leads to a 3 points decrease in the same probability. I also find that if workers are still unemployed at the time of the trial, then the unemployment rate does not affect their probability of winning. This set of results is most consistent with judges' balancing firms' and workers' interests in each particular case, with possibly a pro-firm bias. One caveat is the possibility that workers who reach trial when the unemployment or bankruptcy rates are higher have weaker cases, which would explain why they are less likely to win even if judges do not in fact take economic conditions into account. Fortunately, the dataset used here has rich information on the types of cases that reach the trial stage, including the reason for the dismissal, and the settlement offer made by the firm to the worker. This allows me to conclude that the main results are unlikely to be explained by sample selection. If anything, there is some weak evidence that when economic conditions are worse, workers who apply to employment tribunals have stronger, not weaker, cases. Moreover, economic conditions have no significant influence on applicants' decision to go to trial instead of settling or abandoning their cases.

The literature on the effect of macroeconomic conditions on labor courts' decision has been scarce. Using regional aggregated data, Macis (2001) finds a negative effect of the unemployment rate on the share of employees winning their unfair dismissal cases. Using both macro data and time-series variation in unemployment rates and micro data and regional variation in unemployment, Marinescu (2003) found that French workers are less likely to prevail in unfair dismissal trials when the unemployment rate is higher. The results of these two studies are thus consistent with the findings of this paper. But neither of these studies could carefully control for case

selection. On the other hand, Ichino et al. (2003) do control for case selection. They use micro data from a large Italian bank combined with Macis' macro data and find a positive effect of the unemployment rate on the probability of an employee winning the unfair dismissal case. They also find that workers whose cases are tried in higher unemployment contexts have weaker cases. Thus, the results of the only previous study that controls for case selection are not in agreement with the results of this paper. The most likely explanation of this discrepancy is that the dataset used by Ichino et al. (2003), coming from one single large firm, is not representative of cases brought to trial in Italy. Another potential explanation is that Italian institutions differ from French and British institutions. While important institutional differences do exist[1], this does not explain why Macis (2001) and Ichino et al. (2003) find different results for Italy using macro and micro data respectively. This discrepancy is even more puzzling in that, for France and the U.K., micro and macro datasets give concordant results.

This study thus establishes that worse economic conditions make judges marginally more pro-firm. In the US case, this suggests that arbitrators and judges asked to decide on wrongful discharge cases may also become more pro-firm when economic conditions deteriorate. This result should be taken into account by legislators when framing unfair dismissal legislation, since the impact of the legislation is altered by its enforcement. For social scientists, the finding of this paper indicates that one should take into account enforcement when assessing the efficiency of unfair dismissal legislation, and EPL in general. Indeed, what really matters for economic performance, and therefore economic policy, is not EPL per se but the effective firing costs induced by its application.

[1] In particular, Italian workers have a right to be reinstated in their job if they win an unfair dismissal trial, while French and British workers typically get a monetary compensation.

The paper is structured as follows. Section 2 gives some background on British Employment Tribunals and describes the data used. Section 3 discusses theories of judges' decisions and defines the estimation problem arising due to sample selection. Section 4 deals with the selection of the sample of applicants, establishing that there are no observable effects of economic conditions on applicants' case quality. Section 5 presents a general model of settlement behavior and derives the relevant econometric specifications. Section 6 gives the results of the empirical analysis. And section 7 concludes.

2 British Employment Tribunals and data used

2.1 British Employment Tribunals and the employment law

Most European countries have specialized labor tribunals to deal with unfair dismissal cases, and labor law cases more generally. It is widely assumed that dealing with these matters requires some knowledge of common practices among firms and workers. Some countries, such as France and the United Kingdom, have decided it is in the best interest of equity to have representatives of employees and employers act as judges and provide the expertise required. In the United Kingdom, the employment tribunal is composed of one chairperson, a professional judge[2], and two appointed lay judges, one representing employers and the other representing employees. The lay judges are chosen by the administration from lists of persons proposed mainly by trade unions (for lay judges representing employees) and employer groups (for lay judges representing employers).

[2] To qualify for appointment as a chairperson, candidates must have been qualified as a lawyer for at least seven years. This eligibility criterion also applies to other judges such as District Judges (Courts and Legal Services Act 1990).

The United States have no such specific labor courts, but the Employment Tribunals' setting in the United Kingdom is similar to the arbitration scheme used in unionized firms in the United States to decide on issues where employer and union disagree (Ashenfelter and Bloom 1984). In both cases, the institutional setting is meant to achieve some equitable compromise between firms' and workers' interests. In an experimental study, Farber and Bazerman (1986) find that when deciding on a wage increase, the arbitrator reacts in an asymmetric way to firms' financial situation. Compared to a medium situation, worse financial conditions lead to a discount in the award made by the arbitrator and better financial conditions lead to a premium. Interestingly enough, the premium is significantly lower than the discount. This shows that arbitrators are particularly sensitive to firms' interests in bad times, and suggests that judges in labor courts may react in a similar fashion.

In Europe, the majority of cases labor courts have to deal with concerns dismissals. In the US, although the economics literature has focused on arbitration on wages issues, these are only a very small part of the issues arbitrators have to decide on. Instead, issues of discharge and disciplinary action are most common (see for example the statistics given by the Federal Mediation and Conciliation Service, www.fmcs.gov). In other terms, in the arbitration system, dismissal is at the centre of debate, just as in British Employment Tribunals. In what follows, I am going to concentrate on cases concerning dismissal, although I also have data on other types of cases such as unfair deduction from wages, and race and sex discrimination[3].

Once he/she has been dismissed, the employee can bring a case to court, either to ask for some severance/redundancy payments if those are absent or insufficient, or to ask for compensation for unfair dismissal. It is important to notice that the first category

[3] I tested for the influence of economic conditions on those other cases and found similar but less significant effects. The sample however is too small to provide reliable results.

of cases (redundancy and severance payments) is closer to the second one (unfair dismissal) than it may seem at first glance. Indeed, if the employer claims very serious misconduct on the part of the employee, then the employer need not pay any severance payment to the employee. In those cases, the employee, without claiming there was no reasonable ground for his/her dismissal, can still claim that the misconduct was not as severe as to deprive him/her of a severance payment; this is then very close to saying that the dismissal was in some way unfair[4].

The British law governing unfair dismissal cases is formulated in such a way that it explicitly allows judges to take into account circumstances other than the mere facts pertaining to the case (the "substantial merits of the case"):

> "the determination of whether the dismissal was fair or unfair, having regard to the reason shown by the employer, shall depend on whether in the circumstances (including the size and the administrative resources of the employer's undertaking), the employer acted reasonably or unreasonably in treating it as sufficient reason for dismissing the employee; and that question shall be determined in accordance with equity and the substantial merits of the case." (Employment Protection (Consolidation) Act 1978 s. 57(3), as amended by Employment Act 1980, s. 6).

Note that the list of circumstances is not explicitly limited and therefore economic conditions could also in principle be included, as workers' misconduct is arguably more costly to firms when economic conditions are worse. Decisions shall also depend on "equity", which suggests that judges should compromise between firms' and workers' interests.

[4] In the US, a worker who is discharged for cause is disqualified from unemployment benefits. The worker can appeal his disqualification by trying to show that his termination was not a discharge for cause but a layoff.

To see how these considerations apply to a specific case, we can take an example from a 2003 Employment Tribunal decision concerning the allegedly unfair dismissal of a truck driver. After an accident resulting in damage to the truck, the employer summarily dismissed the driver without notice for gross misconduct ("reckless driving"). The employer argued that this was gross misconduct as it was a financial disaster for his business: he could not afford to increase insurance premiums by claiming on the insurance policy for the damage to this vehicle. Thus, deciding whether the employee was guilty of a gross misconduct partially depended on judges' view about whether the employee's misconduct was endangering the financial position of the firm; if economic conditions were bad, the argument of the employer would sound more credible. In this case, the worker ended up winning mainly on the grounds that, contrary to the company's policy, the employer had not given him an opportunity to explain himself.

At this point, one might wonder whether appeal courts would allow judges to give their own interpretation of the fairness of the dismissal based on considerations such as economic conditions. As it happens, the Court of Appeals decision in the Gilham and others v. Kent County Council case in 1985 leaves tribunals full discretion to decide on matters of facts: "Now whether or not an employer has behaved reasonably in dismissing an employee is a question of fact, and it is a question upon which different people, looking at the same set of circumstances, may reasonably come to different conclusions. It is therefore endemic in a system where there is no appeal on fact [because of the high costs it would involve] that from time to time different industrial tribunals will give different answers to broadly similar situations […]". Thus, the functioning of the British dismissal law does not preclude Employment Tribunals judges from taking into account local economic conditions when deciding

on whether or not a firm has acted reasonably in dismissing an employee. I will now describe the data used to investigate whether this is indeed the case.

2.2 Data used

I have data on individual cases, coming from the 1992 survey of Employment Tribunal Applications in Great Britain (Tremlett Banerji, 1994). This survey was conducted in the following way. First, a random sample of applications completed between January 1990 and October 1991 was drawn; then, employers and employees involved in those cases were interviewed. However, to save on resources, the survey managers decided to interview all employers and only half of the dismissed employees involved in the cases of the sample. To maximize sample size, I therefore use the variables available from the employers' interview. The only variable used in this analysis that was only asked of the worker is the employment status (i.e. whether currently unemployed) of that worker. The sample is constructed to be representative of all cases, withdrawn, settled or heard. Many variables are available, including the reason for dismissal, and information on all the stages of the case from application to tribunal hearing, including details of settlements, such as the amounts firms offered to workers for a settlement.

Among the available variables, I pick a set X that will constitute the control variables: they are variables concerning case characteristics, worker characteristics and firm characteristics listed in table 2. I report summary statistics for these variables for the population of surveyed applicants, and for the sub-sample of applicants whose cases end by a full tribunal hearing. Note that I include in particular two dummy variables allowing me to distinguish economic dismissals or redundancy payment claims from other cases, which is crucial as one may fear that the effect of economic conditions, if any, only concerns this type of cases.

All variables in *X* are potentially correlated with case quality, but two among these variables are most likely to be a good measure of case quality. First, I define a dummy variable for bad misconduct: this dummy is equal to 1 if the reason for the workers' dismissal was misconduct in relation with health and safety (hygiene, smoking, drunkenness), violence or theft. This definition was chosen both on a priori grounds and because these "bad misconduct" cases have a significantly higher probability of being deemed fair dismissals by judges. Second, I use the settlement offer made by the firm to the worker: indeed, as the settlement offer is made by the firm to the worker in order to convince the latter to give up going to full tribunal hearing, it must be that the higher this offer given other characteristics, the more the worker is likely to prevail at trial, i.e. the higher the worker's case quality[5] (this argument is further developed in section 4). Note that the reason why settlement offers are lower for cases that go to full trial is because 80% of dismissed employees who do get an offer accept it, and therefore there is a high proportion (88%) of employees with no offers among those who go to full trial.

I use two variables to reflect economic conditions: the unemployment rate, which pertains to labor market conditions and therefore should affect workers relatively more than firms, and the bankruptcy rate, which should affect firms relatively more than workers. Both measures are defined as of the time of application[6]. The unemployment rate I used is the claimant count rate in the region and month of application. Therefore, we have both cross-sectional (12 regions) and temporal

[5] In as much as firms anticipate that judges' decisions depend on economic conditions, controlling by settlement offers may dampen the direct effect of economic conditions on judges' decisions. Therefore, finding no effect of economic conditions on judges' decisions when controlling for this variable would not show that there is no effect, whereas finding some effect would consolidate the robustness of the results while indicating that firms may not have perfect information about judges' decision rule.

[6] Defining these variables as of the time of the judges' decision for the cases that go to trial does not change the main results. Also note that applications must typically be made within three months of the dismissal so that the economic conditions prevailing at the time of application should be essentially the same as at the time of the dismissal.

variation. The bankruptcy rate is the yearly bankruptcy rate (VAT deregistration statistics, statistics available on the Small Business Service website, www.sbs.gov.uk) by industry and region; the identification comes from 3 years, 12 regions and 9 industries. As can be seen in table 2, the variation in economic conditions in the sample is quite substantial, so that prospects for meaningful estimation are good. Moreover, it is important to notice that the average unemployment rate and bankruptcy rate in the sample of applicants who go to full trial does not significantly differ from the average of these variables in the sample of all applicants. Therefore, it does not seem that the propensity of workers to go to full trial is correlated with economic conditions. Selection bias is thus unlikely to drive results on judges' decision as a function of economic conditions.

In the following section, I discuss how economic conditions can influence judges' decisions and how to estimate this effect empirically.

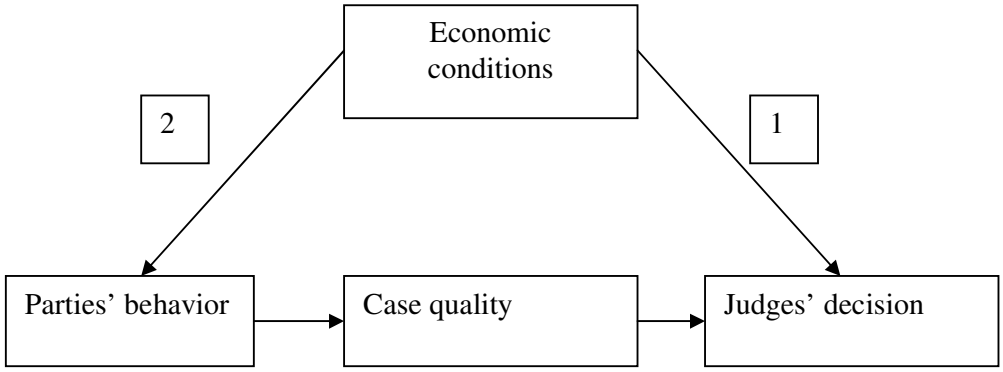
3 Models of judges' decision and the selection problem

Economic conditions can affect judges' decisions in two ways:

1.Directly, as an element taken into consideration in judges' decisions (channel 1 on figure 1).

2.Indirectly, by the influence they may have on the worker's and the firm's behavior before the trial, affecting case quality (channel 2 on figure 1).

Figure 1: the effect of economic conditions on judges' decisions



3.1 The determinants of judges' decision making

The reader is reminded that case quality refers to the quality of the worker's case, i.e. case quality is higher when the worker is more likely to prevail at trial. Judges' decision given case quality and economic conditions are independent of parties' behavior. So, if case quality is perfectly observable, channel 2 can be ignored and one can directly analyze judges' decision as a function of case quality and economic conditions. Let q be the case quality as perceived by the judges, and u an indicator of economic conditions, such as the unemployment rate. Let q^* be the judges' standard independently of economic conditions. Higher q indicates better case quality and higher u worse economic conditions. We can assume that the condition for the worker winning the case is:

$$q > q^* + u\alpha \tag{1}$$

The right-hand side expression is the cut-off for the worker winning the trial: when this cut-off goes up, relatively higher quality cases end with a loss for the worker. Hence, a higher right-hand side indicates that judges are more severe on workers. If

$\alpha = 0$, then judges do not take into account economic conditions and their standard is q^*. If $\alpha > 0$, the cut-off goes up with worse economic conditions, i.e. judges are more severe on workers when economic conditions are worse. The opposite holds if $\alpha < 0$.

In the case where $\alpha \neq 0$, it is not obvious whether α should be positive or negative, i.e. whether, for a given q, judges should be more or less severe on workers when economic conditions are worse. Indeed, bad economic conditions have a negative impact on both firms and workers. They typically affect firms through lower profits and an increased bankruptcy risk, and workers through lower real wage growth and higher unemployment.

Judges can be assumed either to maximize welfare or to act strategically to please their constituencies, i.e. the workers and firms they represent. If judges try to maximize welfare, they can either try to maximize social welfare, or the welfare of the parties involved in each particular case. If judges try to maximize *social welfare*, they are confronted with the following trade-off. On the one hand, in bad times, financial pressure on firms increases, and so does the bankruptcy risk. Thus, any extra cost imposed on firms could have important consequences in terms of lost profits and lost jobs. On the other hand, as firing tends to be already high in bad times, being more severe on workers could encourage firms to fire even more, which would have adverse consequences for unemployment and aggregate demand. If the first effect dominates, then $\alpha > 0$, i.e. judges are more severe on workers in bad times compared to good times. If the second effect dominates, then $\alpha < 0$. If now judges try to maximize the *welfare of the parties*, they have to consider, in each particular case, whether the dismissed worker or the firm suffers more from degraded economic conditions. Relevant to this evaluation is the employment status of the plaintiff.

Indeed, if the dismissed worker has already found a new job, worse or better economic conditions have little or no effect on his employment prospects. Therefore, for all cases where the worker is employed, we expect, if anything, $\alpha > 0$, i.e. judges would favor firms when economic conditions are worse. If however the dismissed worker is unemployed, then, as in the case where judges try to maximize social welfare, the sign of α is undetermined; indeed if the worker is unemployed, clearly both the firm and the worker are likely to suffer from worse economic conditions. Thus, we can conclude that, if judges maximize the welfare of the parties, α is strictly higher if the worker is employed rather than unemployed at the time when his case reaches judgment.

Instead of trying to maximize welfare, lay judges may behave strategically and try to minimize their constituencies' dissatisfaction, and thus maximize their own popularity. Remember that a tribunal is composed of a chairperson, an employees' representative and an employers' representative. Clearly, firms as a group complain more about firing costs in bad times, hence firms' representatives are keener to please firms in bad times. On the other hand, as firings are more common in bad times, they can be perceived as a fact of life by workers as a group. Hence, we may expect firms' representatives to exert relatively more effort than workers' representatives to convince the chairperson in bad times, leading to $\alpha > 0$.

We can now summarize the expected effect of economic conditions on judges' decisions in table 1. The reader is reminded that $\alpha > 0$ means that judges tend to be more favorable to firms (and less to workers) when economic conditions are worse, and the opposite for $\alpha < 0$.

Table 1: Theoretical predictions

	Judges' objective			
	Social welfare	Parties' welfare		Judges' welfare
		Worker employed	Worker unemployed	
Sign of α	α_{sw} ?	$\alpha_{pwe} > 0$	$\alpha_{pwu} < \alpha_{pwe}$	$\alpha_{jw} > 0$

Do we expect to see any differences in α depending on whether the bankruptcy rate or the unemployment rate is used to represent economic conditions? As argued above (section 2.2), the unemployment rate should affect relatively more the well-being of workers and the bankruptcy rate the well-being of firms. If judges aim at maximizing social welfare or their own welfare, this difference between the two variables does not have any obvious implications for α. If judges aim at maximizing the parties' welfare however, this difference becomes relevant. Workers who found a new job are shielded from the effect of economic conditions, and therefore the unemployment or bankruptcy rate are more likely to proxy for the conditions faced by the firm. Workers who are still unemployed suffer more from a higher unemployment rate than from a higher bankruptcy rate, and hence we expect judges to be relatively more likely to decide in favor of the unemployed worker when the unemployment rate is higher rather than when the bankruptcy rate is higher. Therefore, using the superscript *br* for the bankruptcy rate and *ur* for the unemployment rate, we expect that :

$$\alpha_{pwu}^{ur} < \alpha_{pwu}^{br}$$

3.2 The selection problem: parties' behavior

The discussion so far assumes that case quality is perfectly observable. However, if we try to estimate α in (1) using data on cases that have reached the trial stage, we have to come to terms with the fact that case quality is imperfectly measured.

Assume then that for each case i in the *population of applicants* to Employment Tribunals, the quality q_i is given by:

$$q_i = X_i\beta_1 + \varepsilon_{1i} \tag{2}$$

where X_i is a vector of observed characteristics for case i and ε_{1i} is a random error, normally distributed with zero mean. X_i includes the constant and the control variables whose summary statistics are provided in table 2.

Moreover, assume that the judges' threshold is given by:

$$q^* = X_i\beta_2 + \varepsilon_{2i} \tag{3}$$

where ε_{2i} is a random error, normally distributed with zero mean. The decision threshold is thus modeled in the same way as the case quality itself, i.e. assuming that the observer has noisy but unbiased information about its determination.

Then the empirical counterpart of equation (1) is a probit model. Thus, if win is a dummy variable taking the value 1 if the worker wins the trial and 0 otherwise, we have:

$$\begin{aligned} P(win_i = 1) &= P(q_i > q^* + u\alpha) \\ &= P(\varepsilon_{2i} - \varepsilon_{1i} < X_i(\beta_1 - \beta_2) - u\alpha) \end{aligned} \tag{4}$$

Crucially, one should note that the value of *win* is only observed conditional on the case reaching trial. Now, let I be an indicator variable taking the value 1 if a case reaches the trial stage and 0 otherwise. Suppose that applicants choose to go to trial if their case quality q_i exceeds a certain threshold q^I which depends on X_i and

possibly on u[7], so that $q^I = X_i\gamma_1 - u\delta + \varepsilon_{3i}$, where ε_{3i} is a random error normally distributed with zero mean. Then the model for sample selection is given by:

$$P(I_i = 1) = P(q_i > q^I) = P(\varepsilon_{3i} - \varepsilon_{1i} < X_i\gamma + u\delta) \quad (5)$$

where $\gamma = \beta_1 - \gamma_1$.

Finally, the relevant model *for the selected sample* is:

$$P(win_i = 1 \mid I_i = 1) = P(X_i\beta - q^* - u\alpha + \varepsilon_{1i} - \varepsilon_{2i} > 0 \mid X_i\gamma + u\delta + \varepsilon_{1i} - \varepsilon_{3i} > 0) \quad (6)$$

Under those assumptions, two situations may arise. In the first case, $\varepsilon_{1i} - \varepsilon_{2i}$ is uncorrelated with $\varepsilon_{1i} - \varepsilon_{3i}$: then $P(win_i = 1 \mid I_i = 1) = P(win_i = 1) = P(\varepsilon_{2i} - \varepsilon_{1i} < X_i(\beta_1 - \beta_2) - u\alpha)$. Thus $\hat{\alpha}$, the estimate of α obtained by using the probit model in (4) on the selected sample of cases reaching trial, does not suffer from any bias due to sample selection. In the second case, $\varepsilon_{1i} - \varepsilon_{2i}$ is correlated with $\varepsilon_{1i} - \varepsilon_{3i}$: $\hat{\alpha}$ is then potentially biased. The two errors are likely to be correlated among themselves because they both include an omitted variable, the unobserved case quality ε_{1i}: for example, we may expect that all other things equal, cases with higher unobserved quality have a higher probability of reaching trial. Even so, if $\delta = 0$, i.e. economic conditions do not influence the selection process, $\hat{\alpha}$ will not be biased due to sample selection because the conditional mean of $\varepsilon_{1i} - \varepsilon_{2i}$ depends only on X_i and not on *u*. If $\delta = 0$, ignoring the selection process and running the probit model (4) is equivalent to omitting a function of X_i. Given that X_i is already included, this omission will bias the X_i parameters but does not impact the *u* coefficient. However, looking at channel 2 on figure 1, one

[7] This assumption will be further justified by a model of parties' behaviour developed in section 5.1.

may think of a series of reasons why economic conditions can affect parties' behavior before trial, leading to $\delta \neq 0$. For example, if the prospects on the labor market are bleak, the opportunity cost for a worker to go to trial may be lower, and therefore worse cases may proceed to trial. Under these circumstances, a higher *u* leads to more cases with low unobserved quality being selected for trial, which then leads to a lower $\hat{\alpha}$. Thus, in general, if $\varepsilon_{1i} - \varepsilon_{2i}$ is correlated with $\varepsilon_{1i} - \varepsilon_{3i}$ *and* $\delta \neq 0$, $\hat{\alpha}$ captures the net effect of economic conditions on *both* parties' behavior (channel 2) and judges' decisions (channel 1).

Therefore, determining the correct empirical strategy for estimating α in (1) requires examining the behavior of parties before trial. This involves first testing the assumption, embodied in equation (2), that the case quality of applicants does not depend on economic conditions, i.e. ε_{1i} is uncorrelated with *u.* This will be the purpose of the next section. We will then proceed to consider selection of cases *within* our sample, i.e. the basis for equation (5), in section 5.

4 The selection of the sample of applicants to Employment Tribunals

Assume that the sign of the effect of economic conditions on unobserved case quality is the same as the sign of the effect of these same conditions on observed case quality. If so, examining how economic conditions affect the distribution of observed case quality among applicants allows us to assess whether ε_{1i}, the unobserved component of case quality, is correlated with *u* due to the selection of the sample of applicants.

I use two empirical strategies do so. First, observations on the total number of applications to Employment Tribunals can shed light on this issue. Assume that

workers are fired if their case quality is below some threshold, and that they apply if their case quality is above some other threshold. A higher u makes firms more likely to fire workers for a given level of shirking, which implies that, all other things equal, the number of cases and the average case quality of fired workers both increase. On the other hand, as u increases, workers are less likely to shirk, which implies, all other things equal, that fewer workers are fired and the average case quality of fired workers increases. On balance, it seems reasonable to assume that more workers (and in any case no fewer) get fired when u is higher. If workers' decision threshold for applying does not change, then this will likely result in more applications, and a higher average case quality. Average case quality would only decrease if the decision threshold for application decreased enough with u to offset the aforementioned positive effects of an increase in u on average case quality; in that case, we would observe even more applications. Thus observing a positive correlation between the unemployment rate and the number of applications is uninformative about the average case quality of applicants, but observing a negative relationship or no relationship is an indication that the average case quality of applicants does not decrease, and probably increases with the unemployment rate. Since Burgess, Propper and Wilson (2001) find that there is no relationship between the number of applications and the unemployment rate, I conclude that the case quality of applicants is unlikely to decrease and probably increases with worse economic conditions.

A second insight into the correlation between case quality of applicants and economic conditions is available using the micro dataset. Once the dismissed worker applies to the Employment Tribunal, the firm can offer an amount of money to the worker in order to settle the case instead of going to trial. It is reasonable to assume that the amount of the offer is roughly proportional to the expected gains of the worker at trial,

i.e. the probability of the worker winning multiplied by the monetary award he would get[8]. Thus, the ratio of the settlement offer B to the award A is a very good proxy for the probability of the worker winning according to the firm. Given A and B, we can therefore investigate the distribution of case quality among applicants. The micro dataset contains the amounts firms proposed to workers for a settlement and B is therefore known[9]. The awards workers would get if they won at trial are determined by the law and are a function of tenure, wage and age[10]; I can compute these amounts using the dataset and get A.

One can thus assess how the distribution of applicants' case quality as perceived by firms changes with economic conditions. If judges are not influenced by economic conditions ($\alpha = 0$) or if firms believe that such influence does not exist, then the impact of economic conditions on the distribution of B/A can be interpreted as the direct impact of economic conditions on the case quality of applicants as perceived by firms (cf. channel 2 in Figure 1). More generally, the impact of economic conditions on the distribution of B/A reflects firms' beliefs about the net impact of economic conditions on judges decisions when taking into account both channels 1 and 2 in Figure 1. Empirically, I will plot and compare the smoothed distribution of B/A in high unemployment versus low unemployment conditions, and high bankruptcy versus low bankruptcy conditions. This will give an indication of how the distribution of applicants' case quality is affected by economic conditions.

[8] We will discuss more thoroughly a model of settlement behaviour in section 5.

[9] In a certain number of cases, we only observe B if the offer was indeed accepted by the worker. Treating these cases separately in the analysis does not change the main results; hence, for simplicity, we ignore this distinction.

[10] The basic award is calculated by adding up the following amounts, but only continuous employment within the last 20 years can count: one and a half weeks' pay for each complete year of employment when an employee was between the ages of 41 and 65 inclusive; one week's pay for each complete year of employment when an employee was between the ages of 22 and 40 inclusive; half a weeks' pay for each complete year of employment when an employee was below the age of 22. As it happens, the basic award can be reduced or increased by the judge due to the specificities of each case. In fact, the award is almost never reduced, but rather increased. Thus, the basic award represents a good lower bound approximation for what the worker would get if he won at trial.

In figure 3, we plot separately the distributions of case quality for high and low unemployment. As we can easily see, they are almost identical. As settlement offers are concentrated at 0, we may want to plot the settlement offers conditional on their being greater than 0 (figure A-1 in the appendix). Again, the distributions for high versus low unemployment are essentially the same. We then plot the distribution of case quality in low versus high bankruptcy conditions, for all cases (figure 4) and for cases with positive offers (figure A-2). Although the distributions in high versus low bankruptcy rate are not as close to identical as in the case of the unemployment rate, they are still very similar so that it cannot be concluded that there is any significant difference, be it positive or negative.

As a further robustness check, I regressed the firm's settlement offer as a share of the workers' legally determined award on unemployment rate, bankruptcy rate, and the set of control variables. The results (not reported here) confirm the graphical analysis, showing no significant effect of either the unemployment or bankruptcy rate on case quality. Thus, firms believe that the probability of workers' winning does not change with economic conditions. Thus, either firms believe that economic conditions have no influence on either case quality (channel 2 in Figure 1) or judges' decisions (channel 1 in Figure 1), or that the effects of economic conditions on these two channels cancel each other out. If firms believe that effects cancel each other out, it would be most consistent for them to believe that case quality is higher but judges are more severe on workers when economic conditions worsen. Indeed, examining the number of applications, we had concluded that case quality may well increase when economic conditions worsen. Moreover, when regressing the bad misconduct dummy on economic conditions and some controls (results not shown), the unemployment

rate comes out significant and negative without region, industry and year dummies, and insignificant if these dummies are added in.

In conclusion, the tests performed are broadly consistent with the hypothesis that case quality *of applicants* does not depend on the unemployment rate or the bankruptcy rate, and possibly increases with worse economic conditions. We can therefore now concentrate on the selection of cases for trial *within* the sample of applicants.

5 The selection of applicants' cases to trial

5.1 A model of the selection of cases for trial

The only paper investigating the same question as ours, i.e. Ichino et al. (2003), uses a divergent expectations framework inspired by Priest and Klein (1984) to model the selection of cases for trial (for a review of selection issues in legal cases, see Cooter and Rubinfeld, 1989); to this divergent expectations framework, they add asymmetric stakes. Thus, a trial occurs for two possible reasons. First, a trial can occur because of divergent expectations: if the worker's perception of his case quality is sufficiently high compared to the firm's, then he'd rather incur the costs of a trial than settle for what the firm is willing to offer. Second, a trial can occur because of asymmetric stakes, i.e. if the worker gains more than the firms loses from a trial. The resulting model predicts a lower quality of cases when unemployment is higher: this is because, in Italy, the alternative for the fired employee is either accepting dismissal and looking for a job in the labor market, or incurring trial costs and, if he/she wins, being reintegrated in his/her former job. Since the value of reintegration is higher in a depressed labor market, workers with weaker cases litigate when unemployment is higher, i.e. there is a negative selection bias. Because Ichino et al. find that, empirically, workers dismissed in a high unemployment context litigate more, have a

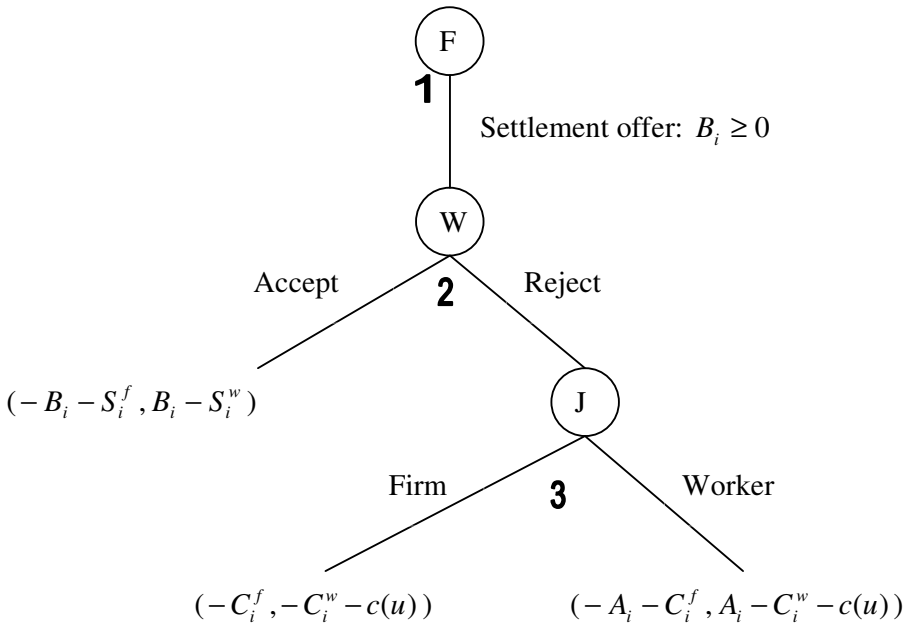
lower case quality and at the same time win more often, they conclude that judges have a pro-worker bias.

The model designed by Ichino et al. is not applicable as such to the British case. In the United Kingdom, victory at trial is in practice almost never followed by reintegration, because losing firms are not forced to take back the victorious ex-employee; instead, the worker is awarded a financial compensation. As the financial compensation is set by a legal formula and does not depend on the unemployment rate, the worker does not gain more by going to trial in a high unemployment context. Hence, a negative selection bias is unlikely, if still possible.

To address the potential selection bias, I investigate the typical process a case goes through before reaching trial in the United Kingdom: thus, figure 2 illustrates the decisions taken by parties from application to trial. Each circle determines a decision point for an agent, F being the firm, W the worker, and J the judges. If the worker applies, the firm decides on the amount of the settlement award it wishes to offer (node 1). Finally, if the worker rejects the firm's offer at node 2, the case proceeds to trial (node 3). These decisions will influence the distribution of quality among the cases reaching trial and will be the basis for the selection equation (5).

I now discuss the likely effect of economic conditions on decisions taken at each node in figure 2, looking at the quality of cases that proceed towards trial. I assume, as in section 4, that whichever effect economic conditions have on case quality at each decision node, the effect on unobserved case quality goes in the same direction, or is null.

Figure 2: parties' behavior before trial



I build a simple model of the selection process of cases in the United Kingdom to determine how economic conditions can affect unobserved case quality through parties' decisions before trial. The assumptions of the model are, as in Ichino et al.(2003), divergent expectations, to which I add an element of asymmetric information. The basic idea is that workers and firms start off with different beliefs about case quality because they have different information. The actions of each one of them act as signals and allow the other to update his beliefs. Economic conditions do not alter the information each party gets about case quality, but rather the pay-offs associated with different decisions; thus, they modify the optimal decisions taken by agents and therefore the distribution of case quality for cases reaching trial.

First, we have to define the parties' beliefs about case quality. The belief of the worker involved in case *i* is then represented by a normally distributed random variable Q_i^w and the belief of the firm involved in case *i* is represented by a normally

distributed random variable Q_i^f ; because the beliefs of the parties are about the same quantity, i.e. case quality q_i, Q_i^w and Q_i^f are positively correlated. Assume, moreover, that the best subjective estimate of the value of a variable about which the individual holds such a probabilistic belief, i.e. Q_i^w, is the expectation of that belief, i.e. $E(Q_i^w)$. Finally, assume that all workers on the one side, and all firms on the other side, have the same degree of uncertainty in their beliefs, the only variation in beliefs coming from different expected values.

Because each party updates her beliefs to incorporate what she learns from the other party's behavior, we need to define beliefs about beliefs. Thus, Q_i^{wf} is the firm's belief about the worker's belief, Q_i^{wfw} is the worker's belief about the firm's belief about the worker's belief, etc.

In this framework, subjective probabilities of the worker's winning can be defined as follows:

$$P_i^w = P(Q_i^w > q^* + \alpha u) \tag{7}$$

$$P_i^f = P(Q_i^f > q^* + \alpha u) \tag{8}$$

The firm makes an offer $B_i \geq 0$ to the applicant. If the applicant accepts this offer, the parties' payoffs are:

$$U_i^{fS} = -B_i - S_i^f \tag{9}$$

$$U_i^{wS} = B_i - S_i^w \tag{10}$$

where S_f and S_w are settlement costs, and the superscript S stands for settlement.

Assuming that the parties are risk neutral, we can define their expected utilities if they go to trial as follows:

$$U_i^{fT} = -P_i^f A_i - C_i^f \tag{11}$$

$$U_i^{wT} = P_i^{w2} A_i - C_i^w - c(u) \tag{12}$$

where the superscript T stands for trial, P_i^{w2} is the belief of the worker about his probability of winning given the offer B_i, C_i^f and C_i^w are litigation costs for the firm and the worker respectively, and A_i is the size of the stake, or award the worker would get if he won. *c(u)* is a cost or benefit incurred by the worker if he litigates, and it is assumed to be a function of economic conditions. Indeed, at first, the dismissed worker is unemployed. A higher unemployment rate and thus worse employment prospects may induce the worker to search harder for a job, or to search less hard, depending on the specifics of the job search model. If unemployed workers search harder when unemployment is higher, then they have fewer resources available to litigate so that *c(u)* increases with *u*, while the opposite holds if they search less hard. Once a worker has found a new job, it is a reasonable simplification to assume that current economic conditions have no effect on his decision to go to trial, so that *c(u)=0* for employed workers.

How is P_i^{w2}, the updated belief of the worker about his probability of winning defined? First, note that for the firm to make an offer $B_i \geq 0$ to the applicant, it must be true that the value of a settlement for the firm is higher than the value of going to trial:

$$U_i^{fS} \geq U_i^{fT} \Leftrightarrow B_i \leq P_i^f A_i + C_i^f - S_i^f \Leftrightarrow P_i^f \geq \frac{B_i - C_i^f + S_i^f}{A_i} \tag{13}$$

Therefore, relying on the above observation, the updated probability of the worker's winning according to the worker is:

$$P_i^{w2} = P\left(Q_i^w > q^* + \alpha u \mid P_i^f \geq \frac{B_i - C_i^f + S_i^f}{A_i} \right) \tag{14}$$

Let Q_i^{w2} be the updated belief of the worker about the quality of his case. Q_i^{w2} is defined by its cumulative distribution function:

$$F_{Q_i^{w2}}(x) = P\left(Q_i^w < x \mid P_i^{fw} \geq \frac{B_i - C_i^f + S_i^f}{A_i} \right) = P(Q_i^{w2} < x) \tag{15}$$

The formation of Q_i^{w2} explains why many firms choose to make an offer equal to zero. Indeed, when the worker's case quality is relatively low, any positive offer will result on average in the worker updating his belief upwards to a considerable degree, which in many cases will lead him to decline the firm's offer and go to trial. Anticipating this, the firm does not make any positive offer in the first place.

In general, the worker decides to reject the firm's offer and go to trial if:

$$\begin{aligned} U_i^{wS} < U_i^{wT} &\Leftrightarrow B_i - S_i^w < P_i^{w2} A_i - c(u) - C_i^w \Leftrightarrow P_i^{w2} > \frac{B_i - S_i^w + c(u) + C_i^w}{A_i} \\ &\Leftrightarrow P(Q_i^{w2} > q^* + \alpha u) > \frac{B_i - S_i^w + c(u) + C_i^w}{A_i} \end{aligned} \tag{16}$$

Remember that probability distributions of Q_i^{w2} only differ among workers by their location. We can hence define a function *h* such that condition (16) for going to trial can be rewritten as:

$$E(Q_i^{w2}) > h\left(\frac{B_i - S_w + c(u) + C_w}{A_i}, q^* + \alpha u \right) \tag{17}$$

The above condition gives behavioral foundations to the selection equation (5): it says that if the plaintiff's best estimate of case quality is above a certain threshold[11], then the plaintiff proceeds to trial. As *h* is increasing in its two arguments, we can straightforwardly sign the partial derivative of *h* with respect to any variable. Thus,

[11] If we did not assume that all workers have beliefs with the same shape and scale, this threshold would also depend on the distributional form of each worker's belief, and not only on the specified variables.

workers are more willing to go to trial the lower the settlement offer, the higher the costs of settlement, the lower the costs of trial, the higher the award at trial, the lower *c(u)* and the lower α. The sign of the effect of *u* on *h* is ambiguous, as it depends on the sign of the derivative of *c(u)* with respect to *u*, and on the sign of α.

We are now ready to proceed to the empirical specification.

5.2 Empirical specification

5.2.1 The selection equation

Using condition (17), we can derive a probit model for a case going to trial. Define trial as a dummy variable taking the value 1 if the worker goes to trial and 0 otherwise. To derive the empirical counterpart of the condition for going to trial, we must specify the worker's estimate of case quality $E(Q_i^{w2})$ and the *h* threshold as a function of observed variables.

Assuming that $E(Q_i^{w2})$ is unbiased, we can define $E(Q_i^{w2})$ as:

$$E(Q_i^{w2}) = q_i + \varepsilon_{4i} = X_i\beta_1 + \varepsilon_{1i} + \varepsilon_{4i} \tag{18}$$

where ε_{4i} is normally distributed with zero mean, and ε_{1i} is the error defined in equation (2), i.e. the error associated with the distribution of case quality among applicants. The reader is reminded that the vector X_i includes the offer B_i made by the firm, so that the empirical specification is consistent with the definition of Q_i^{w2} in (15).

Assume moreover that the costs C_i^w and S_i^w are defined by linear combinations of the variables in X_i. Given that we have also included the variables determining A_i in X_i, we may now approximate *h* as a linear function:

$$h = X_i\gamma_1 + u\delta + \varepsilon_{5i} \tag{19}$$

where ε_{5i} is normally distributed with zero mean.

Therefore, the empirical counterpart to equation (17) is the probit model given in equation (5) which we can now reformulate as:

$$\begin{aligned} P(trial = 1) &= P(X(\beta_1 - \gamma_1) + u\delta + \varepsilon_{1i} + \varepsilon_{4i} - \varepsilon_{5i} > 0) \\ &= P(X_i\gamma + u\delta + \varepsilon_{1i} - \varepsilon_{3i} > 0) \end{aligned} \tag{20}$$

where $\varepsilon_{3i} = -\varepsilon_{4i} + \varepsilon_{5i}$. Thus, whereas in the formulation in section 3.2, equation (5), we explicitly included a single error term, ε_{3i}, for the selection of a case for trial, we have now shown that this error has two empirically undistinguishable components, ε_{4i}, the error in worker's belief about his case quality, and ε_{5i}, the error coming from our failure to perfectly observe the threshold *h*.

δ represents the effect of economic conditions on the decision to go to trial. Remember that if $\delta = 0$, then the correct estimation of α in equation (4) on the selected sample does not require an explicit modeling of the selection process.

5.2.2 The win equation

As argued in section 3.2, the correct specification for the win equation depends on assumptions about the correlation between unobserved case quality and economic conditions in the sub-sample of cases reaching trial.

As a first step, we can make the very restrictive assumption that there is no effect of economic conditions on case quality (observed or unobserved) at trial. If so, we can use a macro time series of the percentage of cases reaching the trial stage that have been concluded with a worker victory and directly regress this variable on the time series of unemployment rates using ordinary least squares.

Second, we can relax the previous assumption and assume that while economic conditions may have an effect on dismissed workers' decision to go to trial, this effect is fully captured by observed variables *other* than *u*, so that $\delta = 0$. Then, the correct specification is given by equation (4), i.e.:

$$\begin{aligned} P(win_i = 1) &= P(q_i > q^* + u\alpha) \\ &= P(\varepsilon_{2i} - \varepsilon_{1i} < X_i(\beta_1 - \beta_2) - u\alpha) \end{aligned} \tag{4}$$

In all the probit specifications we use, standard errors are clustered by region as our main variable of interest, the unemployment rate, is taken at the regional level. Moreover, for cases tried in the same region, decisions may be taken by the same judges.

Remember that the economic conditions variables are defined by month and region for the unemployment rate, and by year, region and industry for the bankruptcy rate. One can thus ask to what extent cross-sectional versus temporal variation is important in explaining trial outcome: are workers from regions or industries facing a worse economic situation more likely to win/lose at trial, or is it the change in economic conditions over time that determines whether workers are more or less likely to prevail at trial? To answer this question, we run the probit specification with different sets of fixed effects: region effects, region and industry effects, and finally region, industry and year effects.

Third, we can further relax our assumptions, allowing for selection on unobservables. Thus, assuming that $\varepsilon_{1i} - \varepsilon_{2i}$ is correlated with $\varepsilon_{1i} - \varepsilon_{3i}$, we have to estimate equation (6):

$$P(win_i = 1 \mid I_i = 1) = P(X_i\beta - q^* - u\alpha + \varepsilon_{1i} - \varepsilon_{2i} > 0 \mid X_i\gamma + u\delta + \varepsilon_{1i} - \varepsilon_{3i} > 0) \tag{6}$$

For this purpose, one can use a Heckman-style strategy (Heckman, 1979, Van de Ven and Van Praag, 1981), and a maximum likelihood technique. This technique has the

advantage of giving an estimation of ρ (rho) the correlation between $\varepsilon_{1i} - \varepsilon_{2i}$ and $\varepsilon_{1i} - \varepsilon_{3i}$. However, as argued by Sartori(2003), the estimator may perform poorly as the same variables are included in both the selection (trial) and outcome (win) equations. The mediocre performance of Heckman estimators is particularly problematic in small samples, and our sample is indeed relatively small, especially if we want to include the variable documenting the worker's employment status in the estimation. We therefore only report results from the Sartori estimation[12], which assumes that $\varepsilon_{1i} - \varepsilon_{2i} = \varepsilon_{1i} - \varepsilon_{3i}$, so that the unobserved component of case quality is the same in the decision of the worker to go to trial as in the decision of the judge[13].

The Sartori estimator will only be more accurate than the simple probit if the hypothesis of identical errors is justified. In fact, ρ, the correlation between $\varepsilon_{1i} - \varepsilon_{2i}$ and $\varepsilon_{1i} - \varepsilon_{3i}$, probably lies somewhere between 0 and 1. The probit estimator is appropriate if $\rho = 0$ and the Sartori estimator is appropriate if $\rho = 1$. In general, for $0 < \rho < 1$, the true value of α lies between the values of the two estimators (in absolute value):

$$|\alpha_{probit}| < |\alpha_{true}| < |\alpha_{Sartori}| \qquad (21)$$

Without going into technical details, one can intuitively explain why the Sartori estimator is an upper bound in this framework. Indeed, assuming that the worker is aware that, say, $\alpha_{true}>0$, i.e. judges are more severe on workers when economic conditions are worse, the worker will be less willing to go to trial in bad times, and this will lead to relatively higher unobserved case quality at trial. Therefore α_{probit}, not taking into account this selection bias, would underestimate the real effect of

[12] Results from the Heckman-style estimator turn out to be very similar to the results from the Sartori estimator.

[13] Note that in the Sartori specifications we do not include any region, industry or year fixed effects, as the maximum likelihood estimation algorithm does not converge in practice if any fixed effects are included.

economic conditions. This implies that, by contrast, if there is no selection bias, $\alpha_{Sartori}$ will overestimate the effect of economic conditions.

The Sartori identifying hypothesis of identical errors may not be accurate for two reasons. First, the hypothesis is not justified if our observed variables are an excellent measure of case quality so that there is no systematically unobserved case quality but mainly noise. Second, the hypothesis is flawed if the unobserved component of case quality according to the worker is largely uncorrelated with the unobserved component of case quality according to the judge. We have good reasons to believe that the correlation is less than one, as both firms and workers are likely to be surprised by judges' decisions. For example, 30% of firms and 64% of workers say they did not expect the outcome of the trial. Moreover, among cases reaching trial with the firm certain that it would win, 40% still end up with a worker victory!

5.2.3 Taking into account the employment status of the worker

I have argued that case quality is unlikely to be correlated with economic conditions for workers who were employed at all nodes where they had to take a decision. Therefore, selection bias due to worker behavior before trial depends on the worker's employment status. Moreover, distinguishing between employed and unemployed workers allows us to test whether, assuming judges' objective is the parties' welfare, it is indeed the case that judges are relatively more lenient with unemployed workers when economic conditions are worse, i.e. whether $\alpha_{pwu} < \alpha_{pwe}$ (see Table 1).

As explained in section 2.2, we know whether the worker was unemployed or not at the time of the survey for a sub-sample of our data. The survey takes place shortly after the case is finished. Hence, we can reasonably hypothesize that if a worker is unemployed at the time of the survey, he was unemployed at all the moments when he

had to take decisions. Conversely, if a worker is employed at the time of the survey, we are not sure what his employment status was before the survey; however, as interviews generally take place shortly after the end of the case, it is likely that the worker had found a job by the time he/she reached the trial stage.

The number of unemployed workers in the sample is small (84 in the dataset, of which 35 reach the trial stage), hence estimating on the sample of unemployed workers alone is likely to lead to unreliable results. Moreover, I want to compare the effects of economic conditions on unemployed vs. employed workers. Therefore, I use a dummy for the employment status and interact economic conditions with this dummy. Thus, let *U* be a dummy taking the value 1 if the worker is unemployed at the time of the survey, and 0 if the worker found a new job[14].

I re-run the probit and Sartori regressions adding the *U* dummy variable for being unemployed, and the interaction terms between the unemployment rate and *U*. This yields equation (22) for the probit estimator and equation (23) for the Sartori estimator.

$$\begin{aligned} P(win_i = 1) &= P(q_i > q^* + u\alpha + U\varphi + uU\alpha_U + \varepsilon_{2i}) \\ &= P(\varepsilon_{2i} - \varepsilon_{ii} < X_i(\beta_1 - \beta_2) - u\alpha - U\varphi - uU\alpha_U) \end{aligned} \tag{22}$$

$$\begin{aligned} P(win_i = 1 \mid I_i = 1) = P(X_i\beta - q^* - u\alpha - U\varphi - uU\alpha_U + \varepsilon_{1i} - \varepsilon_{2i} > 0 \\ \mid X_i\gamma + u\delta + U\delta_U + uU\delta_{Uu} + \varepsilon_{1i} - \varepsilon_{3i} > 0) \end{aligned} \tag{23}$$

Note however that because we have a nonlinear model, the marginal effects are not rendered by the coefficient on the interaction term but must instead be computed separately. For probit models, the Stata program inteff (Norton et al. 2004) takes care of this calculation. However, for the Sartori estimator, no such calculating module exists, which means that the coefficients on the interaction terms in the *outcome*

[14] This variable is constructed in such a way that inactive workers are excluded. There are only 4 inactive workers in the sample, and our prior about judges' attitude towards them is not clear-cut; therefore we concentrate on estimating the difference between employed and unemployed workers.

equation *should not* be interpreted as marginal effects. For the *selection* equation (20) however, I can run separately a probit and calculate the marginal effects for the interacted terms; these marginal effects will be the same for Sartori, because the selection equation is a probit, and if coefficient estimates were slightly different, it would be due to different numerical approximations.

We are now ready to examine the empirical results.

6 Empirical results

This section analyses the results stemming from the estimation of the models discussed in the previous section.

First, we assume that there is no effect of economic conditions on case quality (observed or unobserved) at trial, which allows us to use a macro time-series. The micro data we use only covers a period of two years. To get a broader picture, we plot the yearly win rate in unfair dismissal cases (from Burgess et al., 2001) against the unemployment rate on the period 1985-2001 (Figure 5). The graph shows a negative relationship between the percentage of workers' victories and the unemployment rate, which is confirmed by the corresponding OLS regression. Thus, a one-point increase in the unemployment rate is significantly associated with a one-point decrease in the proportion of workers prevailing at trial, implying that $\alpha > 0$.

Assuming that the effect of economic conditions on case quality, if any, is captured by our control variables, we can directly retrieve α by estimating equations (4) (without control for the worker's employment status) and (22) (with control for the worker's employment status) by a probit model (Table 3). Columns 1 to 4 of table 3 estimate equation (4) with different fixed effects, whereas columns 5 to 8 estimate equation (22), again with different fixed effects. Bear in mind that our favorite estimates for the

effect of economic conditions on judges' decisions are to be found in columns 1-4, for reasons that will become clearer as we proceed. Coefficients on control variables are reported in table A-1 of the annex and, for the sake of brevity and focus, they will only be partially discussed here.

The negative effect of worse economic conditions on workers' probability of prevailing at trial is consistent across all estimations in table 3. In *column 1*, where no fixed effects are added, the effect of being in a month and region with an unemployment rate higher by one point is to significantly diminish the probability of the workers' winning by 3.3 points. Similarly, the effect of being in an industry-region-year with a bankruptcy rate higher by one point is to decrease the worker's probability of winning by 1.6 points. Note that excluding the characteristics controls leads to similar point estimates, although slightly lower in absolute value for the unemployment rate (results not reported here). This suggests that the inclusion of individual characteristics does not have a big effect on the estimates of the effect of economic conditions. Therefore, assuming that there is no selection on unobservables, the results obtained on the macro series and reported on figure 5 give a reasonable approximation for the effect of the unemployment rate on judges' decisions.

Moving to *column 2*, the addition of region effects has little impact on the coefficient on the bankruptcy rate, but, interestingly enough, it more than *doubles* the coefficient on the unemployment rate, implying that a worker applying to the Employment Tribunal in a month where the unemployment rate is higher by one point sees his probability of prevailing at trial diminish by 7.7 points. This result is important as one may have been worried ex ante about the fact that unobserved differences across regions drive the results. Instead, in both macro and micro data the *time* variation in unemployment does make a difference to Employment Tribunals outcomes.

Adding industry dummies in *column 3* does not affect the size of the coefficient on the unemployment rate, although significance is reduced, falling slightly below the 10% level. However, the inclusion of industry dummies doubles the coefficient on the bankruptcy rate: thus, a worker applying to the Employment Tribunal in a year where the bankruptcy rate is higher by one point sees a 2.7 point decrease in his probability of winning his case. This implies that for the bankruptcy rate as for the unemployment rate, time variation has larger effects than cross-sectional variation.

In *column 4* at last, we also include a year dummy to account for time variation. This does not have any dampening impact on the estimates of the effect of economic conditions: on the contrary, both coefficients are still significant and higher in absolute value, with the coefficient on the unemployment rate even doubling again.

In *columns 5 to 8*, the sample is reduced as we now want to control for the employment status of the worker. First, note that the coefficient on the unemployed dummy is large and significant in all specifications. The coefficient on the interaction between the unemployed dummy and the unemployment rate is positive (columns 5-8), indicating that the effect of the unemployment rate is less negative for unemployed workers relative to employed workers. This interaction effect, at first significant (column 5), becomes larger when adding fixed effects (columns 6-8), though is falls short of statistical significance in columns 6-7. To check whether the unemployment rate has a significant effect on unemployed workers, we can use a Wald test for the sum of the coefficients[15] on the unemployment rate and the interaction of the unemployment rate and the unemployed dummy being 0. The test rejects the null hypothesis for the specification in column 5, but not for specifications in columns 6-8. In other terms, once we add region dummies, the estimates indicate that the

[15] The test is done on the raw coefficients in the probit model. This is the appropriate test here, as one can verify by using the formula for the interaction effect given by Norton, Wang, Ai (2004).

unemployment rate has no effect on unemployed workers' probability of winning. It is worth noticing that if we perform the specification in column 1 on the set of unemployed workers only (28 observations available), thus allowing the coefficients on control variables to differ for the unemployed, we find a significant positive coefficient on the unemployment rate, the magnitude of the coefficient being very similar (0.058) to the effect found in column 5. If instead we interact the unemployed dummy with the bankruptcy rate, results are weaker and often insignificant (results not reproduced here). This confirms our hypothesis (section 3.1) about the difference between the unemployment rate and the bankruptcy rate taken as measures of economic conditions when judges are maximizing the parties' welfare: as unemployed workers are more affected by the unemployment rate than by the bankruptcy rate, a change in the unemployment rate has a different effect for them while a change in the bankruptcy rate does not.

Let us now comment on the coefficients on the economic conditions indicators in columns 5-8. Overall, the inclusion of different sets of fixed effects has an effect on the coefficients that is very similar to the one observed in columns 1-4[16]. Noticeably, coefficients on both economic conditions variables tend to be higher in columns 5-8 than in columns 1-4. However, this is not due to the explicit inclusion of the employment status variable, but rather to the sub-sample used: indeed, performing the regressions 5-8 on the same sample but excluding the employment status dummy and the interaction of the latter with the unemployment rate yields very similar estimates, except for column 1, where the estimate of the unemployment rate coefficient in the

[16] The only noticeable difference is the very sizeable jump in the coefficient on the unemployment rate when moving from column 7 to column 8 (adding the year dummy), whereas the jump from column 3 to column 4 was less important (though still big). I explored this issue to find out that the main jump in the coefficient is due to including together region and year dummies. I do not have a good explanation why this jump should be so important and hypothesize that it is simply a random variation due to the small number of observations (93).

absence of control for unemployment status is lower (-0.032). Although, due to the small sample, some doubt about the precise magnitude of the coefficients in columns 5-8 is permitted, using the employment status of the worker has allowed us to confirm that, assuming that there is no selection on unobservables, we have $\alpha_{pwu} < \alpha_{pwe}$ (table 1), i.e. worse economic conditions decrease more the probability of winning for employed relative to unemployed workers.

Now, in a third stage, we allow for economic conditions to influence the selection of cases for trial, even conditionally on observed variables (table 4). We note that in the selection equation (columns 1 and 3), the effect of economic conditions on a case being selected for trial is very close to 0 and insignificant[17]. Therefore, unsurprisingly, the outcome equation (columns 2 and 4) gives results that are very similar to the probit models (columns 1 and 5 of table 3). To close the discussion of table 4, we observe that unemployed workers[18] are not significantly more likely to go to trial than employed workers (column 3). Moreover, worse economic conditions do not make it more likely for unemployed workers to go to trial, and therefore, we cannot reject that $\delta = 0$ in equation (20).

Before concluding this section, let us make a few comments on the effects of control variables reported in the appendix. First, the variables we thought proxy best for case quality do indeed yield consistent results: a higher settlement offer is generally associated with a higher probability of the worker winning, and the bad misconduct dummy always has a negative and significant effect on the worker's probability of winning. Second, we do distinguish dismissals for economic reasons, and we find that

[17] One can run the selection equation alone as a probit and add region, industry and year fixed effects. In such a specification, the unemployment rate remains insignificant.

[18] One may ask whether unemployed workers are also those who apply to Employment Tribunals multiple times. First, most workers in the sample (97.7%) are bringing forward their first application ever, and the unemployed are if anything less likely to have brought an application before, the difference between the two groups being statistically insignificant.

these cases usually lead to a lower probability of the worker winning the case[19]. Third, contrary to what the formulation of the law would make us expect (section 2.1), it does not seem that the size and administrative resources (personnel department) of the firm have a significant impact on trial outcomes, even when explicitly controlling for case selection. Fourth, consistent with the lesson from the trucker's example (section 2.1), the use by the firm of an internal procedure makes it more likely for the firm to prevail at trial. Finally, all other things equal, workers with higher wages in their lost job are more likely to lose at trial than workers with lower wages. We hypothesize that this is due to the fact that workers with higher wages would get higher awards if they were to win, and judges may be more demanding with cases implying higher payments from the firms to the workers, i.e. judges' threshold may increase with the worker's (past) wage[20].

Given the above discussion, our favorite set of estimates is to be found in columns 1-4 of Table 3. Indeed, controlling for the employment status of the worker does not change the basic probit estimates of the effect of economic conditions on judges' decisions, but only forces us to work with a smaller sample; it is only interesting to control for the worker's employment status to determine the specific effect on unemployed workers, but not to compute the overall average effect. As for the selection models presented in table 4, they are rejected by the data, and should therefore better be seen as a robustness check.

[19] Note that excluding altogether economic dismissals from the whole analysis does not change the basic results.

[20] Alternatively, workers with higher wages may have a greater incentive to sue, and hence a lower unobserved match quality.

7 Conclusion

This study has shown that economic conditions such as the unemployment rate and the bankruptcy rate affect the implementation of Employment Protection Legislation. In the United Kingdom, judges tend overall to decide more frequently in favor of firms when unemployment or bankruptcy rates are higher. However, judges' decision rule is different depending on the dismissed worker's employment status: the unemployment rate has a negative effect on the probability of dismissed workers who have found a new job winning their cases, whereas the effect for unemployed workers is typically not significant. The sign of the overall effect of the unemployment rate of judges' decisions in the UK is the same as the one found by Macis (2001) for Italy and Marinescu (2003) for France, suggesting that employment tribunals respond similarly to economic conditions across countries with different legal traditions and levels of EPL[21].

Among the theories of judges' decision discussed in section 3.1, the empirical results mostly support the theory that judges' objective is to maximize the joint welfare of the parties involved in each case. The results do not rule out that judges also try to maximize social welfare or their chances of remaining in office, but make these objectives less likely. First, assuming that judges try to maximize welfare, the finding that unemployed workers get a different treatment is somewhat surprising. To understand this point, assume that the function relating optimal firing costs to economic conditions is monotonic. Given that judges in general are more pro-firm when economic conditions are worse, they may think that firing costs should be lower under such circumstances. But then it is not quite consistent for them to decide more often in favor of unemployed workers when unemployment is higher. Indeed, the

[21] Ichino et al. (2003) found an opposite result, but as already argued, this study may not representative of trials occurring in Italy.

higher the unemployment rate, the more likely it is that dismissed workers will remain unemployed. Therefore judges would tend to be less and less favorable to firms as economic conditions get worse, which would defeat their initial purpose.

Now, assuming that judges try to maximize their probability of remaining in office, the differential treatment of employed and unemployed workers does not seem to be justified either. Judges representing workers must have the support of workers' unions, and of firms' groups for judges representing firms. However, whereas it is reasonable to assume that these organizations have an idea about how often judges decide in favor of workers, it is difficult to believe that members of organizations who are not directly involved in the case would have any information about whether the worker was employed or not in that particular case. This means that it is difficult for outsider observers to spot the relatively better treatment that judges confer on unemployed workers in high unemployment contexts, and therefore such treatment should be of no or little interest to judges only concerned about maximizing their popularity. Therefore, I conclude that the observed behavior of judges is mostly consistent with their maximizing the joint welfare of the parties involved in each case.

However, judges' maximizing the joint welfare of the parties may generate a negative externality. Indeed, judges' behavior implies that in an economic downturn, effective firing costs are lower: this would all other things equal encourage firms to fire and hence amplify the economic cycle, at least up to the point where most dismissed workers stay unemployed, in which case worse economic conditions make no difference. If firms are aware of the influence of economic conditions on judges' decisions, then judges' behavior can have a macroeconomic effect. This study thus suggests that one should include indicators of EPL enforcement, such as workers' winning rate, in any study of the effect of EPL on macroeconomic outcomes.

An interesting avenue for future research would be to extend the analysis to countries such as the United States who, while not possessing any widespread dismissal legislation, operate similar institutions. Specifically, in the United States, one could investigate whether economic conditions influence committees and judges when deciding on appeals against unemployment benefits disqualification, or arbitrators when deciding about the regularity of dismissals in unionized firms. Given the similarity in institutions, one would expect to find similar results to those found for the decisions of judges in labor courts in the United Kingdom.

To get a deeper understanding of the causes and consequences of the results reported in this paper, one should also examine to what extent firms and workers are aware of judges' decision rules and how such awareness affects their decisions. This, combined with a closer analysis of the reasons behind judges' sensitivity to economic conditions, would allow further examining whether judges' behavior is efficient in maximizing social welfare and, armed with this knowledge, suggesting some suitable changes in the regulation. More generally, examining the influence of the socio-economic context in judges' decisions in other areas of law would likely permit to uncover interesting yet undiscovered patterns.

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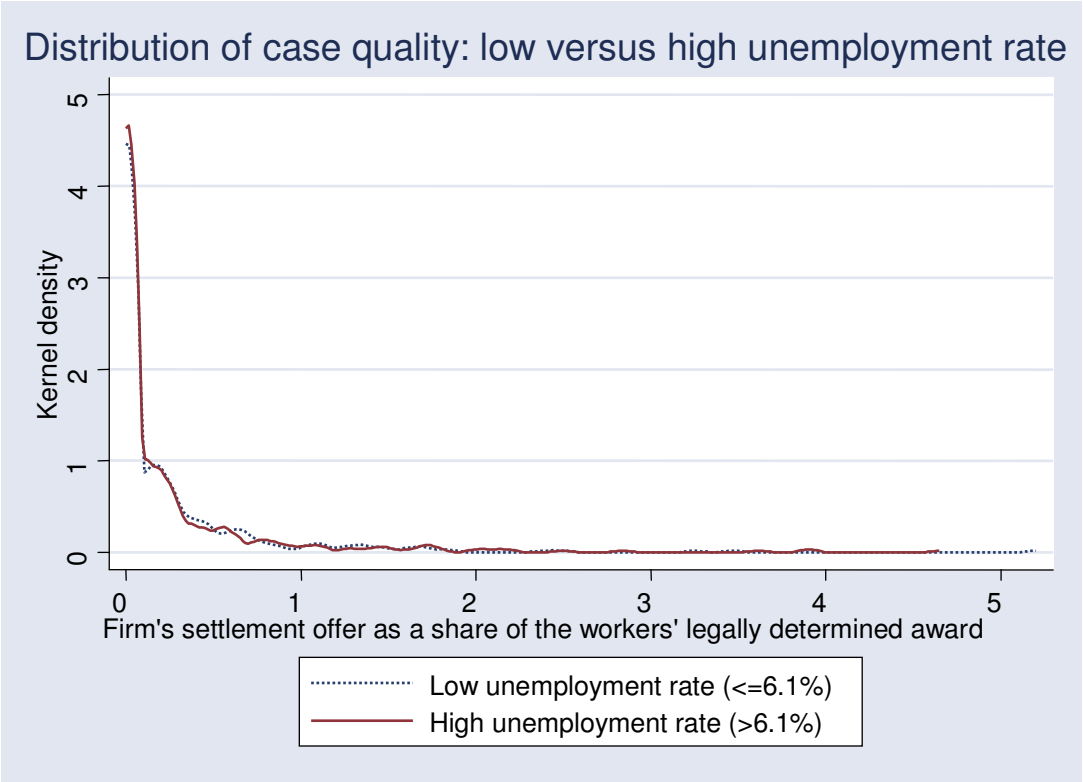
Table 2 Descriptive statistics (no employment status)

	All applicants					*Applicants proceeding to trial*				
Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*
Judges' decision										
Worker wins	471	0.43	0.50	0	1	471	0.43	0.50	0	1
Economic conditions										
Unemployment rate (%)	1288	6.03	1.67	2.40	10.10	459	6.01	1.62	2.40	10.10
Bankruptcy (deregistration) rate (%)	1289	0.12	0.02	0.03	0.18	459	0.12	0.02	0.04	0.18
CONTROLS: X										
Case characteristics										
Settlement offer/legal award	1073	0.22	0.51	0	5.20	392	0.05	0.29	0	3.61
Severe misconduct	1311	0.15	0.36	0	1	471	0.18	0.38	0	1
Economic dismissal	1311	0.29	0.45	0	1	471	0.25	0.43	0	1
Redundancy payment	1311	0.09	0.29	0	1	471	0.09	0.29	0	1
Internal formal procedure followed	1311	0.29	0.46	0	1	471	0.34	0.47	0	1
Firms' settlement offer (thousands of pounds)	1311	0.75	1.98	0	30	471	0.13	0.71	0	10
Worker characteristics										
Manager or professional	1311	0.21	0.40	0	1	471	0.24	0.42	0	1
Weekly wage (hundreds of pounds)	1173	2.02	1.25	0.15	15.38	423	2.11	1.29	0.30	12.50
Tenure at dismissal (years)	1278	7.00	6.45	0.08	41.00	460	7.42	6.50	0.08	35.00
Age (tens of years)	1227	4.02	1.19	1.70	7.10	445	4.11	1.15	1.80	6.40
Female	1311	0.32	0.47	0	1	471	0.28	0.45	0	1
Firm characteristics										
Size (hundreds of employees)	1271	2.30	9.20	0.01	240	459	2.47	7.71	0.01	80
Personnel department	1311	0.18	0.39	0	1	471	0.21	0.41	0	1

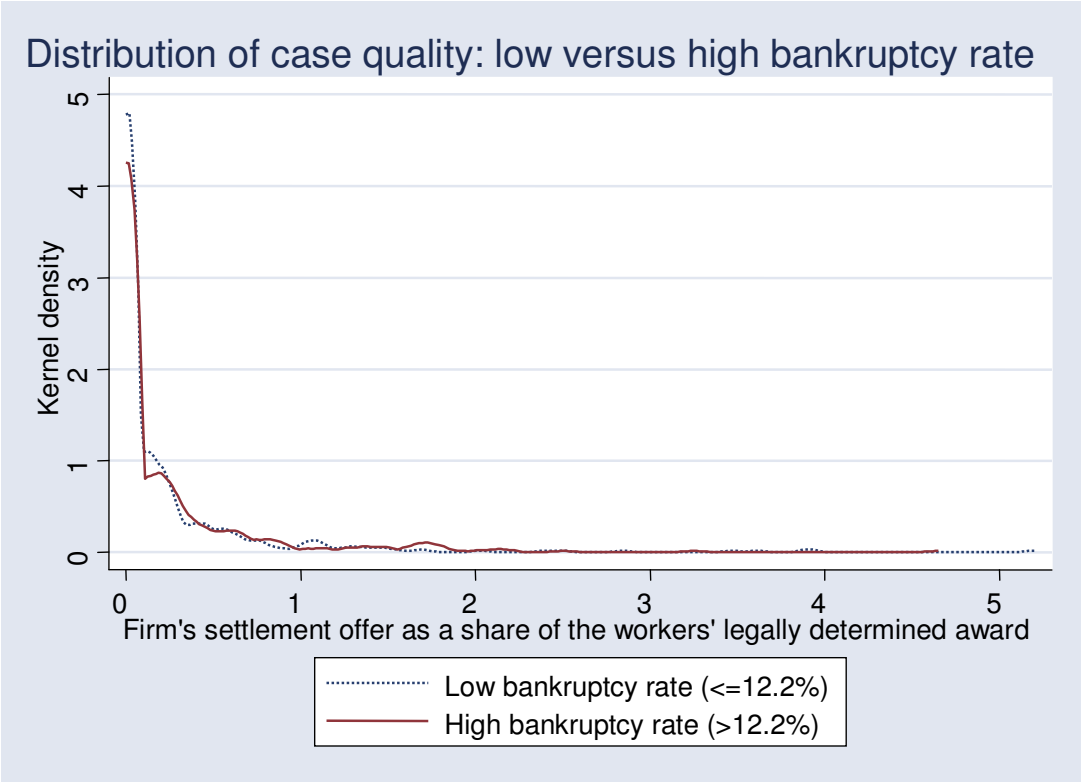
Source: 1992 survey of Employment Tribunal Applications in Great Britain, UK National Statistics, claimant count series and Small Business Service, VAT Deregistration.

Figure 3: Distribution of case quality: low versus high unemployment rate



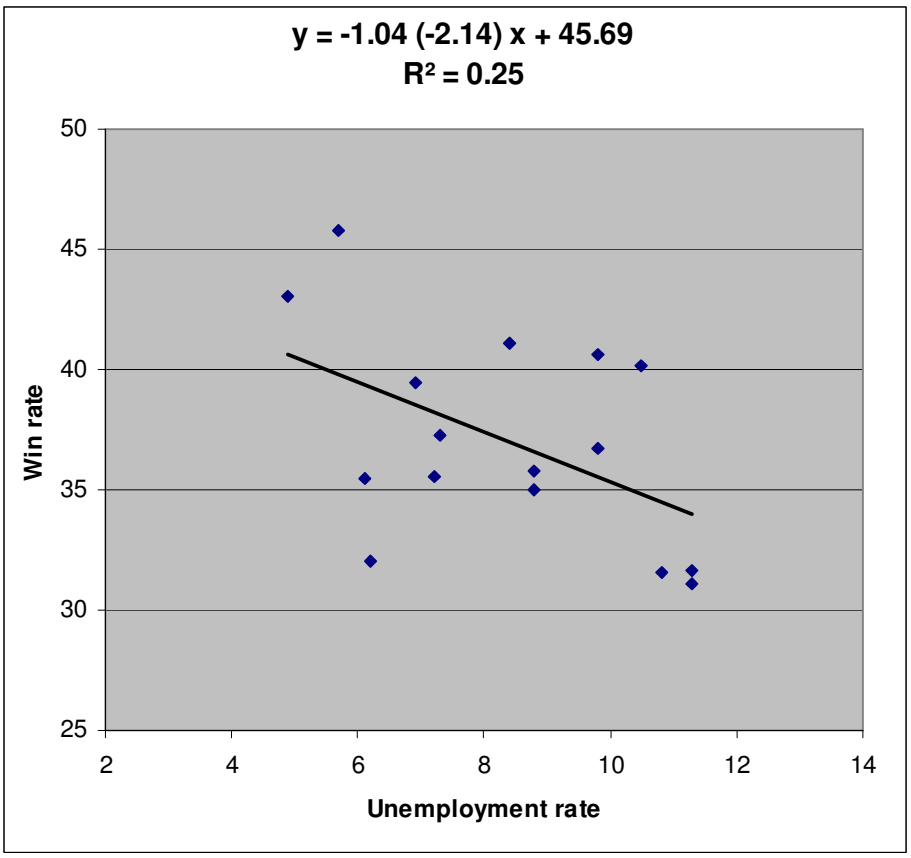
Source: 1992 survey of Employment Tribunal Applications in Great Britain, UK National Statistics, claimant count series.

Figure 4: Distribution of case quality: low versus high bankruptcy rate



Source: 1992 survey of Employment Tribunal Applications in Great Britain, and Small Business Service, VAT Deregistration.

Figure 5: yearly win rate in unfair dismissal cases and unemployment rate (1985-2001)



Source: Burgess et ali. (2001) and UK National Statistics

Note: in the regression equation, the t-statistic is in parentheses.

Table 3: probit estimations for trial outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	P(win=1)	P(win=1)	P(win=1)	P(win=1)	P(win=1)	P(win=1)	P(win=1)	P(win=1)
Unemployment rate (%)	-0.033	-0.077	-0.073	-0.144	-0.068	-0.183	-0.149	-0.591
	(0.013)***	(0.044)*	(0.048)	(0.064)**	(0.031)**	(0.130)	(0.106)	(0.236)**
Bankruptcy	-0.016	-0.012	-0.027	-0.036	-0.001	-0.007	-0.106	-0.156
(deregistration) rate (%)	(0.008)*	(0.010)	(0.013)**	(0.016)**	(0.014)	(0.022)	(0.053)**	(0.050)***
Worker unemployed					-0.638	-0.683	-0.825	-0.796
					(0.087)***	(0.123)***	(0.128)***	(0.157)***
Unemployment rate*					0.132	0.157	0.168	0.212
worker unemployed					(0.045)***	(0.079)**	(0.077)**	(0.148)*
Regional dummies	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Industry dummies	No	No	Yes	Yes	No	No	Yes	Yes
Year dummy	No	No	No	Yes	No	No	No	Yes
Observations	387	387	387	387	112	108	93	93
Pseudo R squared	0.092	0.101	0.123	0.126	0.187	0.261	0.321	0.360

*** significant at 10%; ** significant at 5%; *** significant at 1%**

Notes: Robust standard errors clustered by region in parentheses. Marginal effects reported; the marginal effect of the interaction term is calculated using inteff. All regressions include controls for case characteristics (settlement offer/legal award, severe misconduct dummy, economic dismissal dummy, redundancy payment dummy, dummy for internal procedure having been followed, firm's settlement offer), worker characteristics (manager or professional dummy, weekly wage, tenure at dismissal, age, female dummy), and firm characteristics (size, dummy for personnel department). In columns 5 to 8, the sample is reduced because whether the worker is unemployed or not is only known for a subsample of cases (see text for more explanations).

Source: 1992 survey of Employment Tribunal Applications in Great Britain, UK National Statistics, claimant count series and Small Business Service, VAT Deregistration.

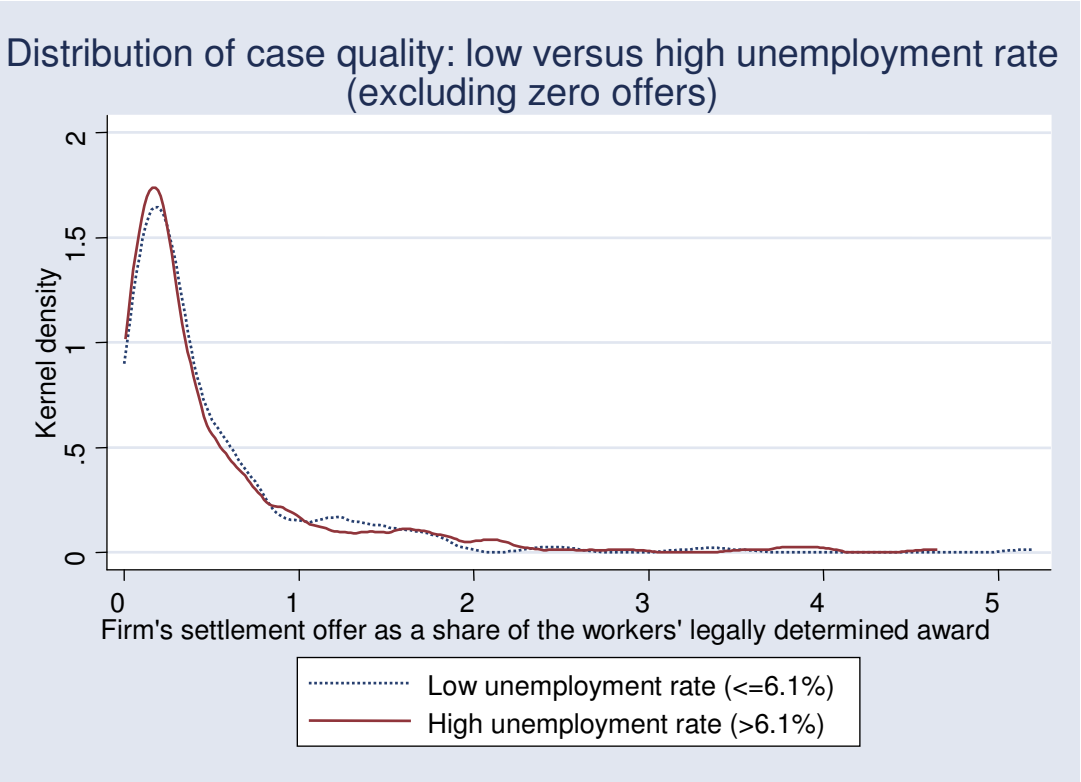
Table 4: Sartori estimations for trial selection and outcomes

	(1)	(2)	(3)	(4)
	Selection equation: P(trial=1)	Outcome equation: P(win=1/trial=1)	Selection equation: P(trial=1)	Outcome equation: P(win=1/trial=1)
Unemployment rate (%)	-0.006	-0.042	-0.007	-0.049
	(0.008)	(0.020)**	(0.008)	(0.026)**
Bankruptcy	-0.008	-0.027	-0.003	-0.006
(deregistration) rate (%)	(0.005)*	(0.013)**	(0.006)	(0.018)
Worker unemployed			-0.028	-0.697
			(0.084)	(0.294)***
Unemployment rate*			.0151 (b)	0.111(a)
worker unemployed			(0.033)	(0.039)***
Observations	1063	1063	305	305
*** significant at 10%; ** significant at 5%; *** significant at 1%**				
Standard errors in parentheses; marginal effects reported				

Notes: Robust standard errors clustered by region in parentheses. Marginal effects reported, except for (a). (b): marginal interaction effects calculated with inteff from a probit estimation of P(trial=1). All regressions include controls for case characteristics (settlement offer/legal award, severe misconduct dummy, economic dismissal dummy, redundancy payment dummy, dummy for internal procedure having been followed, firm's settlement offer), worker characteristics (manager or professional dummy, weekly wage, tenure at dismissal, age, female dummy), and firm characteristics (size, dummy for personnel department). In columns 3 and 4, the sample is reduced because whether the worker is unemployed or not is only known for a subsample of cases (see text for more explanations).
Source: 1992 survey of Employment Tribunal Applications in Great Britain, UK National Statistics, claimant count series and Small Business Service, VAT Deregistration.

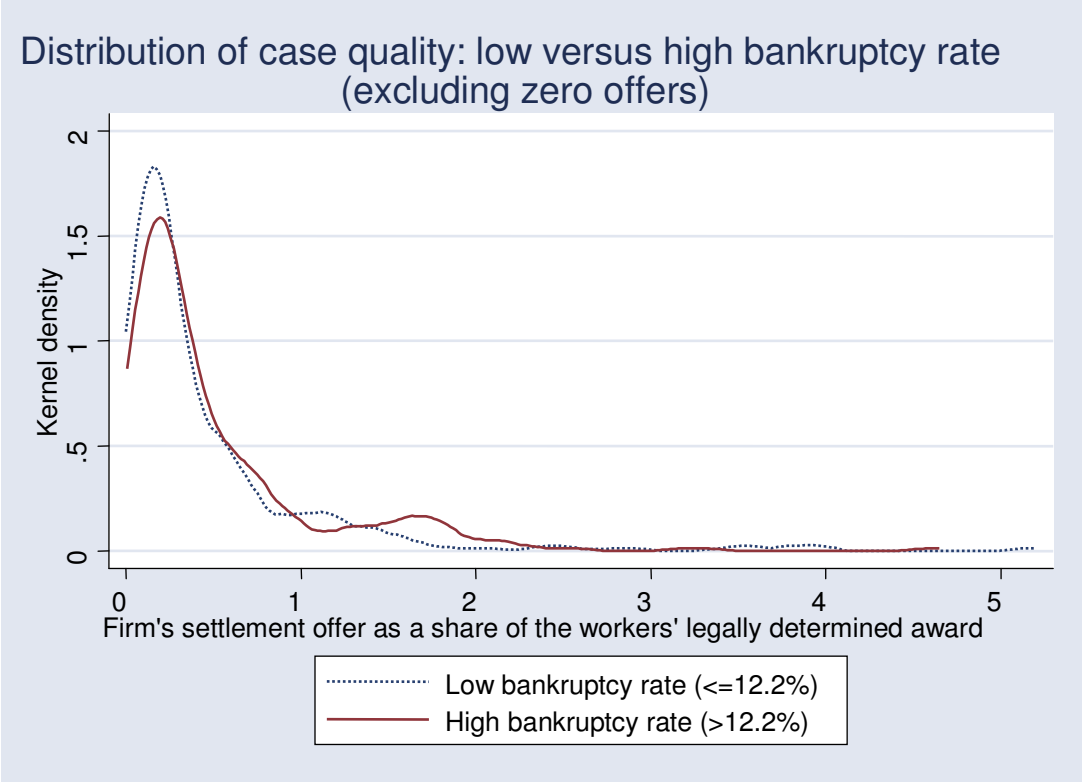
APPENDICES

Figure A-1: Distribution of case quality: low versus high unemployment rate (excluding zero offers)



Source: 1992 survey of Employment Tribunal Applications in Great Britain, UK National Statistics, claimant count series.

Figure A-2: Distribution of case quality: low versus high bankruptcy rate (excluding zero offers)



Source: 1992 survey of Employment Tribunal Applications in Great Britain, and Small Business Service, VAT Deregistration.

Table A-1: probit estimations for trial outcomes: full results

	(1) P(win=1)		(2) P(win=1)		(3) P(win=1)		(4) P(win=1)	
Economic conditions								
Unemployment rate (%)	-0.033***	(0.013)	-0.077*	(0.044)	-0.073	(0.048)	-0.144**	(0.064)
Bankruptcy (deregistration) rate (%)	-0.016*	(0.008)	-0.012	(0.010)	-0.027**	(0.013)	-0.036**	(0.016)
Case characteristics								
Severe misconduct	-0.252***	(0.058)	-0.250***	(0.061)	-0.266***	(0.066)	-0.260***	(0.067)
Economic dismissal	-0.074	(0.050)	-0.068	(0.051)	-0.094*	(0.049)	-0.095**	(0.048)
Redundancy payment	0.145	(0.122)	0.134	(0.123)	0.133	(0.123)	0.122	(0.120)
Internal formal procedure followed	-0.091**	(0.044)	-0.097**	(0.045)	-0.104**	(0.048)	-0.102**	(0.050)
Firms' settlement offer (thousands of pounds)	0.041*	(0.022)	0.044*	(0.023)	0.053**	(0.023)	0.050**	(0.022)
Worker characteristics								
Manager or professional	0.101*	(0.057)	0.098*	(0.058)	0.086	(0.066)	0.093	(0.069)
Weekly wage (hundreds of pounds)	-0.059**	(0.025)	-0.056**	(0.027)	-0.057**	(0.026)	-0.059**	(0.024)
Tenure at dismissal (years)	-0.005	(0.005)	-0.005	(0.006)	-0.004	(0.006)	-0.004	(0.006)
Age (tens of years)	-0.013	(0.021)	-0.011	(0.020)	-0.011	(0.020)	-0.011	(0.020)
Female	0.063	(0.053)	0.051	(0.060)	0.036	(0.062)	0.036	(0.063)
Firm characteristics								
Size (hundreds of employees)	-0.001	(0.004)	-0.001	(0.005)	-0.001	(0.005)	-0.001	(0.005)
Personnel department	-0.115	(0.073)	-0.117	(0.082)	-0.133	(0.085)	-0.130	(0.086)
Regional dummies (default=East Midlands)								
East			-0.063	(0.050)	-0.075	(0.056)	-0.162**	(0.079)
London			-0.010	(0.037)	0.008	(0.057)	0.027	(0.061)
North East			0.278	(0.170)	0.255	(0.195)	0.466***	(0.146)
North West			0.034	(0.100)	0.012	(0.111)	0.164	(0.147)
South East			-0.151**	(0.060)	-0.158**	(0.069)	-0.267***	(0.087)
South West			0.046*	(0.024)	0.078*	(0.042)	0.027	(0.055)
Scotland			0.061	(0.126)	0.033	(0.130)	0.193	(0.159)
West Midlands			0.074	(0.053)	0.059	(0.048)	0.096**	(0.046)
Wales			-0.033	(0.076)	-0.012	(0.085)	0.103	(0.104)
Yorkshire and the Humber			0.112	(0.071)	0.085	(0.078)	0.183**	(0.090)
Industry dummies (default=Agriculture)								
Catering					0.457***	(0.104)	0.498***	(0.087)
Construction					0.244*	(0.127)	0.294**	(0.129)
Finance					0.212***	(0.068)	0.250***	(0.072)
Other services					0.286**	(0.118)	0.362***	(0.129)
Production					0.252**	(0.109)	0.307***	(0.111)
Retail					0.081	(0.123)	0.153	(0.125)
Transport					0.105	(0.125)	0.184	(0.124)
Wholesale					0.276	(0.184)	0.346**	(0.173)
Year dummy (default=1990)								
1991							0.123*	(0.072)
Observations	387		387		387		387	
Pseudo R squared	0.092		0.101		0.123		0.126	

*** significant at 10%; ** significant at 5%; *** significant at 1%**

Notes: Robust standard errors clustered by region in parentheses. Marginal effects reported.

Source: 1992 survey of Employment Tribunal Applications in Great Britain, UK National Statistics, claimant count series and Small Business Service, VAT Deregistration.

Table A-2: : probit estimations for trial outcomes controlling for employment status: full results

	(1)		(2)		(3)		(4)	
	P(win=1)		P(win=1)		P(win=1)		P(win=1)	
Economic conditions and employment status								
Unemployment rate (%)	-0.068	(0.031)**	-0.183	(0.130)	-0.149	(0.106)	-0.591	(0.236)**
Bankruptcy (deregistration) rate (%)	-0.001	(0.014)	-0.007	(0.022)	-0.106	(0.053)**	-0.156	(0.050)***
Worker unemployed	-0.638	(0.087)***	-0.683	(0.123)***	-0.825	(0.128)***	-0.796	(0.157)***
Unemployment rate*worker unemployed	0.132	(0.045)***	0.157	(0.079)**	0.168	(0.077)**	0.212	(0.148)*
Case characteristics								
Severe misconduct	-0.263	(0.066)***	-0.303	(0.081)***	-0.463	(0.064)***	-0.419	(0.089)***
Economic dismissal	-0.045	(0.116)	-0.097	(0.141)	-0.087	(0.203)	-0.052	(0.202)
Redundancy payment	-0.133	(0.188)	-0.232	(0.135)*	0.025	(0.337)	0.163	(0.376)
Internal formal procedure followed	-0.123	(0.088)	-0.104	(0.120)	-0.142	(0.140)	-0.136	(0.151)
Firms' settlement offer (thousands of pounds)	-0.019	(0.174)	0.008	(0.186)	0.241	(0.265)	0.212	(0.250)
Worker characteristics								
Manager or professional	0.026	(0.124)	0.027	(0.133)	-0.098	(0.172)	-0.141	(0.164)
Weekly wage (hundreds of pounds)	-0.100	(0.054)*	-0.159	(0.080)**	-0.133	(0.071)*	-0.143	(0.060)**
Tenure at dismissal (years)	-0.025	(0.012)**	-0.025	(0.015)*	-0.041	(0.017)**	-0.042	(0.018)**
Age (tens of years)	0.013	(0.037)	-0.001	(0.047)	-0.022	(0.049)	-0.020	(0.041)
Female	-0.021	(0.094)	-0.103	(0.138)	-0.189	(0.144)	-0.184	(0.135)
Firm characteristics								
Size (hundreds of employees)	-0.184	(0.135)	-0.006	(0.008)	-0.004	(0.011)	0.001	(0.014)
Personnel department	-0.180	(0.122)	-0.081	(0.182)	0.086	(0.255)	-0.002	(0.285)
Regional dummies (default=East Midlands)								
East			-0.134	(0.156)	0.202	(0.286)	-0.322	(0.162)**
London			0.267	(0.158)*	0.345	(0.172)**	0.449	(0.124)***
North East			0.736	(0.169)***	0.623	(0.230)***	0.856	(0.077)***
North West			0.308	(0.320)	0.256	(0.229)	0.809	(0.106)***
South East			0.094	(0.345)	0.176	(0.358)	-0.393	(0.107)***
South West			0.336	(0.128)***	0.269	(0.142)*	-0.007	(0.196)
Scotland			0.076	(0.322)				
West Midlands			0.354	(0.126)***	-0.059	(0.129)	0.209	(0.138)
Yorkshire and the Humber			0.470	(0.145)***	0.431	(0.107)***	0.753	(0.065)***
Industry dummies (default=Agriculture)								
Construction					-0.518	(0.029)***	-0.475	(0.141)***
Finance					-0.520	(0.044)***	-0.457	(0.176)***
Other services					-0.612	(0.059)***	-0.338	(1.062)
Production					-0.945	(0.032)***	-0.444***	(0.147)
Retail					-0.575	(0.057)***	-0.450	(0.414)
Wholesale					-0.476	(0.025)***	-0.362	(0.504)
Year dummy (default=1990)								
1991							0.651	(0.254)**
Observations	112		108		93		93	
Pseudo R squared	0.187		0.261		0.321		0.360	

*** significant at 10%; ** significant at 5%; *** significant at 1%**

Notes: Robust standard errors clustered by region in parentheses. Marginal effects reported; the marginal effect of the interaction term is calculated using inteff. The sample is reduced compared to table A-1 because whether the worker is unemployed or not is only known for a subsample of cases (see text for more explanations).

Source: 1992 survey of Employment Tribunal Applications in Great Britain, UK National Statistics, claimant count series and Small Business Service, VAT Deregistration.