"Labor Disputes and Labor Flows"

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Abstract

Using a data set of individual labor disputes brought to court over the years 1996 to 2003 in France, we examine the impact of labor court activity on labor market flows. First, we present a simple theoretical model showing the links between judicial costs, judicial case outcomes and firing costs. When a large fraction of cases go to trial, it may well be a sign of low firing costs with firms facing low litigation costs and being therefore willing to go to court or, conversely, a sign of high firing costs of workers facing low litigation costs and being therefore willing to sue the firm. Second, we exploit our model as well as the French institutional setting to generate instruments for these endogenous outcomes. Using these instruments, we show that labor court decisions have a causal effect on labor flows. More trials and more cases won by the workers cause more job destructions. More settlements, higher filing rates, and a larger fraction of workers represented by a lawyer dampen job destructions.

1 Introduction

Following the seminal paper by Lazear (1990), the effects of employment protection legislation (EPL, hereafter) on labor markets have been extensively examined through cross-country analyses, using indicators supposed to capture the national strictness of EPL (see Freeman, 2004, for a critical review). A recent strand of literature assesses the impact of EPL within countries, using changes in the legislation. This strategy typically involves measuring the impact of a change in legislation targeted to a specific category within a whole country or -- in the case of the US -- the impact of the differential timing in the introduction of a new EPL across different states. Autor, Donohue, and Schwab (2004) take advantage of the between-state variation in the timing of the introduction of labor laws in the US; they find that the "implied-contract" exception law, meaning that the employer implicitly promised not to terminate a worker without good cause, has reduced state employment rate by 0.8 to 1.6%. Boeri and Jimeno (2005), using the 1990s tightening of the Italian regulation for firms with less than 15 employees, find that the threshold does matter in conditioning layoff and hiring probabilities but find

no significant impact on employment growth. Bauer et al. (2007) find no effect of the change in the German EPL exemption for small firms on worker turnover. Martins (2009) reaches the same conclusion using Portuguese matched employer-employee data. Marinescu (2009) finds that the 1999 change in employment seniority before being eligible to go to court in the UK – it went from 200 days to 100 – had a substantial decreasing impact on the firing hazard of the workers with one to two years of tenure. Hence, virtually all of these studies use some form of discontinuity across time and space in laws when there is no such variation in France where legislation is set nationally (labor laws, minimum wages...) with little time variation.

However, this strand of research suffers from several downsides. First, these studies do not provide information concerning the degree of **enforcement** of labor regulations. To which extent these regulations were used by workers to defend their own interests? Are these regulations actually binding for employers? For instance, in the case of the US, even if judicial breaches to the employment-at-will doctrine have been judged by some state courts, we have little evidence on the extent to which they are used or even known by the workers. Therefore, we do not know if they act as a credible threat to the employment-at-will policy. The state of California recognized the application of the covenant of good faith and fair dealing to employment relationships in 1980. In March and April 1986, about 100 cases were filed in Los Angeles which implies an approximate number of 1,000 for the entire year in the entire state[2] (hence, about 80 cases per million workers).[3] In comparison, for France, with a population and GDP close to those of California, 160,000 cases take place in any given year. Of course, one could argue that the law can act on the employer in a pre-emptive way but, to capture any effect in the data, this impact should be very strong (or conversely the impact on employment of labor courts should be extreme in France). Second, labor laws are subject to court interpretation and tend to vary over time and space. As pointed out by *The OECD 2004 Employment Outlook*, even if an employer may be sanctioned in case of non-respect of EPL, "these provisions are subject to court interpretation and this may constitute a major (but often hidden) source of variation in EPL strictness both across countries and over time".

Therefore, opening the black box of the labor courts seems a promising path, in particular in the case of France with no other source of meaningful variation. Enforcement of the law may indeed matter more than its content (see for example Bhattacharya and Daouk, 2002 who find that insider trading laws decrease the cost of equity only when a case has been prosecuted). Yet, empirically, problems of endogeneity abound: court interpretation with the ensuing impact might not be exogenous as market conditions are likely to have an impact on the leniency of the courts, the introduction of new laws, or

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[2] In 1986, civil case filings in Los Angeles represented about 60% of all civil activity in the state of California.
[3] These figures are taken from Dertouzos (1988). Notice though that arbitrators operate in the US before intervention of the courts, but their efforts are not recorded in any registry (a point made by John Abowd).

workers' propensity to go to court. Ichino et al. (2003), using micro data on labor court cases, focus on this institutional endogeneity of EPL enforcement. Studying the case of an Italian bank with roughly 20,000 employees among which 409 workers were fired and 86 of them went to trial over more than 20 years, they show that a higher unemployment rate increases worker's probability of winning her case. In contrast, Marinescu (2008) - using data from a 1992 survey of Employment Tribunal Applications in Great Britain - finds that a higher unemployment rate leads to more decisions against the workers, in particular when they were already re-employed.

In this paper, we make the best of the constraints induced by the French system by using labor courts to analyze the judicial process and its impact on the labor market. The French EPL system -- characterized by large separation costs, high workers coverage by collective bargaining agreements, powerful unions -- is usually considered by international organizations as one of the strictest in the developed world. It also produces every year a large amount of legal procedures related to individual labor disputes (roughly 160,000 new cases every year, as we will see). About 1 in 4 dismissed workers indeed challenges her dismissal in front of a labor court. These procedures are complex, costly, and can last for months. It is these ***legal procedures*** that we analyze in this paper. We examine their impact on employment flows. However, in contrast with virtually all of the literature, we do not focus on legislation changes but on the judicial process itself. We measure case outcomes – trial rates, conciliation rates… -- directly using all cases that took place in France between 1996 and 2003. We relate these outcomes to the legal environment of each French geographical jurisdiction. We then try to understand how these legal outcomes affect job creations and job destructions within the jurisdiction of each court, using flows measured at those establishments that are within the court jurisdiction.

To illustrate the links between judicial activity and labor dynamics, we build a simple model relating firing costs to judicial activities of the courts. The firing costs are then assumed to have direct effects on the probabilities of hiring and firing for the firms, thus an increase in separation costs decreases labor flows (both at entry and at exit). This assumption is both founded theoretically (see for instance Bentolila and Bertola, 1990) and empirically (see the papers cited above). Our model helps to understand how indicators of judicial activity are ambiguously linked to separations costs. The main reason comes from *composition* effects. These composition effects have direct consequences on final separation costs: for instance, if only "expensive" cases come to court, on one side the firm economizes on the extensive margin (less cases) but pays more on the intensive margin (more expensive). Therefore, measured case outcomes do not have a simple and univocal interpretation in terms of separation costs: more trials may sometimes mean larger separation costs, but it may also mean lower separation costs. This result does not only apply to labor courts but also to divorce or

more generally to any legislation that alters the decisions of workers, couples, firms when they contract, sue, or indeed go to court.[4]

On the *empirical* side, our contribution is fourfold. First, we consider measures of EPL varying across space and time based on the various measures of judicial case outcomes directly coming from legislation enforcement. In France, workers can contest the conditions of a firing by filing a case to one of the 264 local labor courts. We use information collected by the French Ministry of Justice on all cases that were filed over the 1996-2004 period to compute, for each geographical jurisdiction and each year, various EPL indicators characterizing the enforcement of the labor laws: the percentage of dismissed workers who litigate in employment tribunals, the fraction of cases leading to a conciliation between parties, to a trial, resulting in a worker's victory, or the fraction of cases in which workers were legally represented. We match these local indicators with local measures of the legal environment (judges, administrative staff, and lawyers) as well as local measures of job flows à la Davis and Haltiwanger (1992).

Second, as we work at the level of France, a country in which many institutions are centralized and do not vary across the French territory (minimum wage, unemployment benefits, wage bargaining…), we are able to "control" for most of the French labor market institutions. Third, thanks to the precise French institutional setting and those local measures of legal environment, we use an instrumental variable strategy to correct for the endogeneity from which estimation of the relation between economic conditions, including labor flows, and application of the labor laws might suffer. These instruments rely on administrative features presiding over the allocation of judges and judicial clerks across French territory, and on the location of universities training lawyers. All these features are shown to be disconnected from local business conditions. Then, we measure the effect of various case outcomes on employment flows. Fourth, because labor laws in France do not vary across local areas (see however Chemin and Wasmer, 2009, on the noticeable exception of the working time reduction laws in one French region, Alsace-Moselle and the one presented in this paper as a robustness check), a difference in difference approach on changes in the legislation is difficult to implement in a French setting. Our local enforcement indicators approach (paired with the appropriate instruments) offers one of the few credible substitutes to this classic identification strategy, in addition one that has never been used, to analyze France.

As in all of the empirical papers we are aware of, our paper focuses on the impact of labor regulations on labor market characteristics and leave aside the welfare gains from job stability which must be taken into account for policy recommendations.[5] However, and in contrast with the existing empirical

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[4] This has not escaped some analysts; see for instance Stevenson (2007) on legislation and divorce rates.
[5] See Bertola (2003) for a theoretical model considering risk-averse workers and potential positive effect of EPL on welfare.

literature, our labor court outcomes capture some dimensions of the quality of labor relations which according to Blanchard and Philippon (2004) or Algan and Cahuc (2009) are related to the evolution of labor market conditions.

To summarize our results, we show that labor court decisions have a causal effect on labor flows. More trials and more cases won by the workers cause more job destructions. More settlements, higher filing rates, and a larger fraction of workers represented by a lawyer dampen job destructions.

Section 2 describes the French labor courts institutional setting. Section 3 presents a simple theoretical model relating the case outcomes to firing costs. Section 4 describes our data sets and the instrumental variables. Section 5 explains our empirical methodology to capture causal effects and presents our regression results on labor flows. We briefly conclude.

2 Labor Courts in France: the Institutional Setting

2.1 French Firing Laws

Under the current French law, separations are classified in two types: dismissals for a personal motive and dismissals for an economic motive. Economic dismissals are redundancies due to a slowdown in the business activity. Individual dismissals (personal motive) occur when the firm's decision to fire a worker is triggered by a grave misconduct of the worker or an insufficient level of competencies. In France as in many European countries, an economic dismissal entails a more complicated and time consuming process as well as the payment of large severance fees. On the contrary, a dismissal for misconduct is a faster process - if not challenged by the worker or if confirmed by the labor court. Thus the dismissal for "just" cause implies a lower firing cost than a redundancy. When fired, a French worker might sue the firm. Since a bill passed in 1973, every individual dismissal must be justified by a "real and serious cause" and the firm has the burden of proof. Without delving deep into 30 years of jurisprudence that have made this concept simultaneously blurred and precise, "real" means that the wrongdoing justifying the dismissal must be objectively defined, accurate, and in line with the mandatory firing notification letter. For example, being ten minutes late does not mean being seventy minutes late; a lack of performance or a lack of trust is not considered "real" if it is not objectively measured. The cause is considered as "serious" only if it is related to the professional activity of the worker and if it makes the labor relation impossible to continue. There are various degrees of "seriousness". Some lead to "grave misconduct" (for example brawl or thievery) which allows the employer to fully deprive the worker of severance payment (in this case, the employee may lose her unemployment benefits).

2.2 French Labor Courts

The French labor justice is mainly dispensed by the "Prud'hommes" which is the relevant jurisdiction to every labor dispute arising at the individual level in France. In the 90's, 264 Prud'hommes jurisdictions were spread all over metropolitan France, a tribunal being at most within a radius of 30 miles from any establishment.

There are several sections in each Prud'hommes. As the legislators wanted to take into account industry characteristics of the cases brought to court, each Prud'homme is divided into 4 sections according to the main activity of the firm: Agriculture, Retail Trade, Manufacturing, and Other Activities (mainly Services). A fifth section is dedicated to cases involving "managers, engineers, and professionals" irrespective of the activity of the firm.

The judges in the Prud'hommes are not professional judges and are seen by some as performing a public duty. Each labor court comprises judges representing employers and judges representing employees in equal number. These judges are elected every five years within lists established by worker unions and employer federations. On the employee side, the electoral body includes all private sector workers with a labor contract.

Prud'hommes are supposedly not very formal and should be seen as conciliation boards. They were designed to foster agreements rather than trials. Therefore a first and mandatory step in each trial is a conciliation audience where plaintiffs and defenders explain their grievance and judges try to push for an agreement.[6] If they do not, the case is judged. If, in the end, an equal number of judges decides in favor of a worker and against her, there is a tie ("solution de départage"). In this case, a single professional judge decides the outcome of the trial.[7]

A majority of plaintiffs are represented by a lawyer. The plaintiff or the defender can appeal the decision of the court if the stake is larger than a given threshold (about 5,000 euros in 2006). It is worth noting that 60% of the decisions were appealed in 2004. Among them, 55% of these appeals did not overrule the Prud'hommes' decision, 30% confirmed it "partially".[8]

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[6] It is worth noting that to this respect, the French setting is close to almost every OECD country, where courts usually attempt to reach a compromise solution at the start of formal legal proceedings (see Venn, 2009).

[7] Moreover, in case of an emergency, a summary judgment can be made. However, such judgments are only temporary and might be overruled afterwards. In this paper, we do not consider these summary judgments.

[8] Munoz-Perrez and Serverin (2006). Unfortunately, current available data sets do not allow us to track the cases across the levels of jurisdictions; whether the decision is appealed by the worker or the firm is unknown.

For any given case filed in a labor court, the range of outcomes is wide. A case can lead to a full tribunal hearing and be lost or won. It can be classified as null and void if the plaintiff has not shown due diligence in the conduct of her case. The case can also be crossed out. Finally, a case can either be conciliated during the conciliation step or outside the tribunal with a formal agreement sent to the court.

The motives for suing are multiple. The nullification of a dismissal is asked in the majority of cases (58%).[9] 21% of plaintiffs ask for some compensation that was not paid by their former employer whereas 9% of plaintiffs do not agree with the level of their severance payment. In this paper, we do not distinguish between these different motives.

3 Judicial Activity and Firing Costs: a Simple Theoretical Model

We develop a simple analytical model determining the relationships between judicial activities and firing costs, taking specifically into account the conciliation step in the judicial process. Our intention is not to break new theoretical ground but rather to focus ideas. We do not study here the theoretical impact of firing costs on labor market variables. This has been extensively examined elsewhere. We will assume that larger firing costs entail slower and smaller adjustments than separations inducing no costs (see for instance Bentolila and Bertola, 1990 and Bertola, 1992).

To illustrate how firing costs are related to case outcomes, we depart from the traditional model of litigation proposed by Priest and Klein (1984) or Bebchuk (1984) or more recently Card and McCall (2009) to run a cost-benefit analysis similar to the one proposed by Flanagan (1989) for disputes related to the compliance to the National Labor Relations Act in the US. For simplicity, the model that we describe below has no uncertainty, no asymmetric information that would explain why trials take place; everything is known and predictable; we will come back later on this topic and discuss how our results are affected by asymmetric information.

In our analysis, the employer can deliberately choose to pay a minimal firing cost with the risk to be sued by the worker; or to pay a larger amount, which corresponds to the payment a plaintiff would accept in order to give up any further possibility of lawsuit. Important to note here that this last sum is not negotiated between the firm and the worker, but is directly coming from legal precedents (jurisprudence). In France, it amounts to one to two years of earnings. Another way of understanding the model is as follows: a firm chooses to dismiss the worker either for a personal motive, paying a small severance payment, or to dismiss the worker for an economic motive (redundancy) with larger

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[9] In the very vast majority of the cases won by the workers, they are not reinstated but receive a compensatory award.

severance payments. Our hypothesis, then, is that when firms pay the severance payment corresponding to a redundancy, the workers never choose to sue the firm (indeed, 97.5% cases in our data come from dismissals for personal motive rather than redundancies). When the worker goes to court after a dismissal, the firm has to prove that the case is a legitimate dismissal for personal motive rather than a redundancy.

In the case of a dismissal for personal motive, the firm incurs a minimum cost (c_m) if the dismissal remains unchallenged by the worker. This cost c_m is lower than the maximum cost c_M, which leads the worker not to sue the firm. Yet the firm has to take into account the facts that the worker can file a suit ($p_f = 1$ if he does, $p_f = 0$ otherwise) and that he can then end the case with a formal agreement in front of the judge ($p_c = 1$ if he does, $p_c = 0$ otherwise). The firm also knows the probability that the worker wins if the trial occurs, p_w. We assume that during the conciliation step, the judge tries to reach an agreement using an "intermediary" cost c_c, given by the jurisprudence, always lower than c_M. Note that in order to simply introduce the co-existence of a conciliation stage and a trial stage we consider c_c to be constant. The firm cannot increase c_c in order to avoid the trial.

Uncertainty of the entire process is summarized through p_w. The firm and the employee share this value. In this cost-benefit analysis, we assume that the quality of each case is known by both parties and is related to observed characteristics of the workers and of the firms.[10] For instance, union or personnel delegates or pregnant women are very well protected by the law, and the judges are very strict against dismissals of such individuals. Several past statements of judgments also show that judges demand more stringent evidence when a firm has had large positive profits in the years preceding the trial.[11]

At this point, the model has no uncertainty, no asymmetric information that explains why trials take place. Theoretically, firms and workers should agree on a payment in order to avoid the litigation costs. Two features could be added to the model in order to explain why firms and workers go first to the Prud'hommes and then, if ever, to trial. First, costs for reaching an agreement without any mediator like the judge could be larger than the costs at the conciliation stage. This seems plausible since the Prud'hommes institution is seen as a public good and the conciliation stage is essentially free. Second, in line with the literature in which trial is an equilibrium outcome, we can assume that the worker and the firm have different and irreconcilable expectations on the outcome of the trial. This assumption would lead to a "contract zone" where a settlement amount can be found (see Bebchuk, 1984). When the expectations are not in the contract zone, the trial takes place; else an agreement can

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[10] As mentioned above, this assumption is discussed below.
[11] Unfortunately, the data do not contain a firm identifier. Hence, it is not possible to directly relate firm and worker behavior.

be found at the conciliation stage. Because there is a need to model expectations, computations become much less tractable. The model loses its simplicity without gaining much insight for our purpose. In addition, as underlined by Spier (2007) such a model does not fully solve the litigation puzzle since the conciliation stage should help the expectations to narrow. Again, it is possible to assume two stages of narrowing expectations, one leading to conciliation, one to the trial.[12] From this discussion, it is however interesting to note that workers employed in large firms are virtually absent from the Prud'hommes. In line with the above discussion, the various probabilities should be better known by the human resources management and union delegates that are always present in the larger firms. Hence, they should escape trials and easily agree on separation payments, as is observed. In small firms, conflicts become often personal and difficult to solve without the help of a neutral third party, a role apparently played by the Prud'hommes.

Now, let us go back to our model. If choosing c_m the expected firing cost for the firm is:

$$E(c) = p_f \{p_c(c_c + l_c) + (1 - p_c)[p_w(c_m + F) + (1 - p_w)c_m + l_t]\} + (1 - p_f)c_m$$

where F is a compensatory award for the worker, l_c is the firm's litigation cost when the parties reach an agreement at the conciliation stage, and l_t is the firm's litigation cost when the parties go to trial. Otherwise, the firing cost is c_M.

As for the worker, if the firm chooses c_m, the expected severance payment is:
$$E(s) = p_f \{p_c(c_c - k_c) + (1 - p_c)[p_w(c_m + F) + (1 - p_w)c_m - k_t]\} + (1 - p_f)c_m$$

k_c being the cost of litigation for the worker at the conciliation stage, k_t being the cost at the trial stage. Otherwise, the received payment is c_M.

The parameters p_f and p_c result from the optimization from the firm and the worker and equal one or zero. The worker chooses to go to court or not; and in that case to accept the conciliation or not. The firm chooses to pay c_m or c_M; and, if at the court, to accept the conciliation or not.

We define: $\overline{p_w} = \dfrac{k_t}{F}$, $\overline{\overline{p_w}} = \dfrac{c_c - c_m + k_t - k_c}{F}$, $p_w^* = \dfrac{c_c - c_m - l_t + l_c}{F}$, and $p_w^{**} = \dfrac{c_M - c_m - l_t}{F}$

Under several assumptions (see Appendix), there are four equilibria, depending on the value of p_w:

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[12] Computations not included in the Appendix are available from the authors.

Equilibrium (1): for small probabilities $p_w < \overline{p_w}$, the firm pays c_m and the worker does not go to court ($p_f = 0$ and $p_c = 0$) since the firm would refuse the conciliation and the gain at trial would be negative for the worker.

Equilibrium (2): when $\overline{p_w} < p_w < \overline{\overline{p_w}}$, the expected gain of the worker at trial is positive. She can credibly threat the firm to go to a full hearing. Since $p^*_w < \overline{p_w}$ the firm accepts to settle with the worker. The settlement amount is lower than the expected loss of the firm at trial but larger than the expected gain of the worker. ($p_f = 1$ and $p_c = 1$).

Equilibrium (3): when $\overline{\overline{p_w}} < p_w < p_w^{**}$, the worker is better off at the trial stage and refuses to conciliate anymore ($p_f = 1$ and $p_c = 0$).

Equilibrium (4): when $p_w > p_w^{**}$, the firm pays c_M since it would be too costly to go to court.

The firing cost, depending on the probability of winning of the case, is shown on Figure 1.

$$p_w(c_m + F) + (1 - p_w)c_m + l_t$$
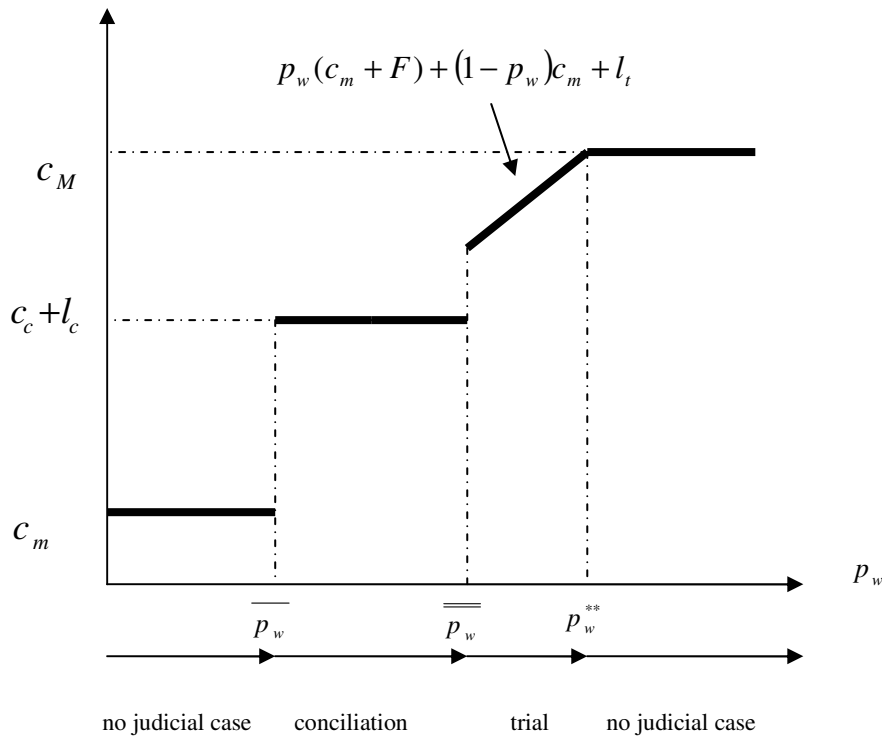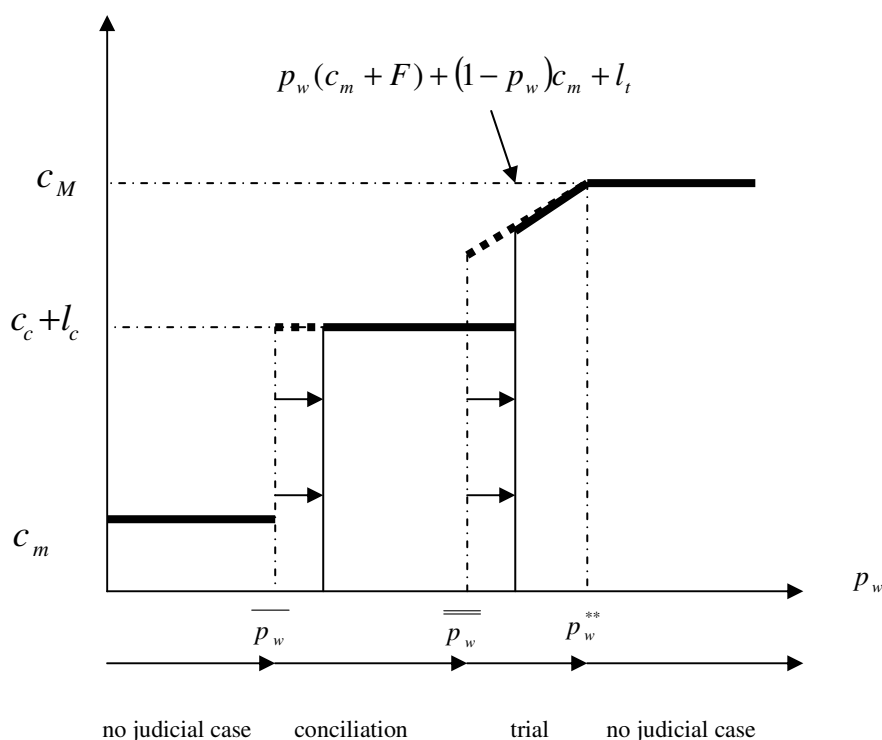
Fig. 1: Firing Cost

Discussion: We consider that firms are facing an invariant distribution of case quality. This model shows that changes in the litigation costs have intuitive impacts on the global firing costs; yet the

results on the case outcomes are ambiguous. For instance, an increase in the firm's litigation cost at trial l_t implies a decrease in p_w^{**} (Figure 2). The firm will be more likely to fire high probability workers with an economic motive to avoid lawsuits. It will also increase the relative cost of a trial with respect to conciliation. The expected firm's cost at trial will rise. All these changes lead to an increase in the firing cost, a decrease in the trial and filing rates. Hence, a *smaller* number of trials and filing cases appear to be associated (in some cases at least) with *more* EPL.

$$p_w(c_m + F) + (1 - p_w)c_m + l_t$$

c_M

$c_c + l_c$

c_m

$\overline{p_w}$ $\overline{\overline{p_w}}$ p_w^{**}

p_w

no judicial case   conciliation   trial   no judicial case
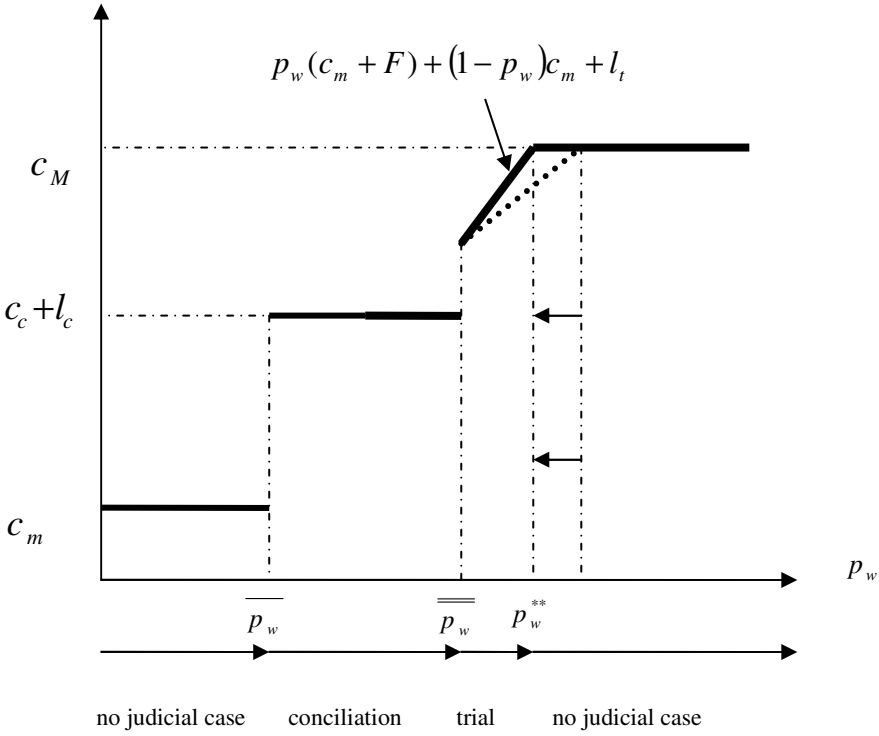
Fig. 2: Firing Cost, Case Outcomes and an Increase in the Litigation Costs for the Firm

Let us study the following case that stands in stark contrast with the previous one (Figure 3). An increase in workers' litigation costs k_t will induce a decreased probability for the workers to file a case (through a higher $\overline{p_w}$) as well as more workers that prefer to conciliate (through a higher $\overline{\overline{p_w}}$). In this situation (contrasting with the previous one), a smaller number of trials is associated with lower total firing costs. In fact, our model shows that firing costs directly depend on variation in input costs; yet the link with case outcomes is ambiguous.

Fig. 3: Firing Cost, Case Outcomes and an Increase in the Litigation Costs for the Worker

4 Data and Methodology

4.1 Judicial Cases Data

Our data source on individual cases comes from administrative records made at the level of each geographical jurisdiction and collected by the statistical department of the French Ministry of Justice. The primary goal of these data is to monitor the activity of labor courts with an emphasis on speed of treatment. The data source is exhaustive for the period 1996 to 2003. It includes approximately 1.5 millions individual cases.[13]

For each case, the starting date, the ending date, the motives for dismissal, and the court decision are recorded. An average case takes approximately one year (343 days) with a standard deviation of 9 months.[14] For each case, we know the legal representation chosen by the firm and the plaintiff. Few characteristics of the employee-plaintiff are available: mainly gender and age. As for firms' characteristics, we know the industry, the size (more or less than 10 workers), and the Prud'hommes

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[13] We will not consider the 2% of cases involving employers as plaintiffs.

[14] Because we use jurisdiction-level information for our analysis, rather than case-level information, our Tables will report jurisdiction-year statistics. All case-level statistics are available from the authors on request.

section of the employing firm (i.e. the industry broadly defined). The size of the firm has to be known by labor court judges because labor laws differ for small firms; more specifically, they are less stringent and try to ease the financial costs of firing that could hurt them irreversibly. Small firms are overrepresented with 56% of the filed cases whereas they comprise 25% of the labor force.

These data on individual cases are used to compute several aggregate measures of the cases examined in each jurisdiction-year pair. The first indicator relates to litigiousness: the filing rate, number of cases over the number of dismissed persons.[15] The second indicator relates to representation: the worker lawyer rate, number of cases where the worker is represented by a lawyer over the number of cases. The three other indicators describe the main outcomes of the cases, which are: the worker and the firm manage to conciliate, or they go to trial, and in that case, either the worker wins or not. Thus we build three indicators: the conciliation rate, number of cases conciliated or having led to an agreement over the number of cases; the trial rate, number of cases having reached trial over the number of cases; the winning rate, number of cases having led to a victory for the worker over the number of cases (see Table 1 for the definition of the indicators).

Admittedly starting from a high base, we do not observe in France a strong increase in the number of cases brought to the labor courts over our period; during this period, no change were made to the labor laws. In absolute terms, the number of filed cases increased by 10% over the 1990 to 2004 period. The number of cases treated by labor courts appears to be stable over the period, in stark contrast with what happened in some countries such as the UK where a sharp increase took place (see Figure 4 and Burgess, 2001). It is important to note that the percentage of filed cases among the dismissed persons is large (mean of 22%, see Table 2). Almost one dismissal over four ends at the labor court.

Despite the conciliation step which is mandatory, and promotes a quick and costless resolution of the cases, about 60% of cases end by a trial, among which 75% lead to a worker's victory (see Table 2). Of all filed cases, only 20% end at the conciliation stage, or lead to an agreement notified to the court, or to a withdrawal on the worker's side. All indicators of judicial activity display a very strong variance over time and across jurisdictions. In comparison with what is observed in a country such as the UK, almost half of the workers are represented by a lawyer despite other available means of representation.

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[15] No exhaustive statistics give the number of dismissed persons in France; we are thus obliged to have a proxy through the number of registered unemployed who declare being unemployed because of a dismissal. These figures come from a data set compiling the unemployed registered at the national employment service (ANPE at this time) in each city, distinguishing the reasons for being unemployed (dismissal, entry into the labor force, end of temporary contract…). As for labor flows (see below), we aggregate these data at the jurisdiction level.

4.2 Labor Flows Data

Local employment flows at the establishment level are computed from the SIRENE files, maintained at the French statistical institute (INSEE). These files give the precise location (city) for each establishment. We compute a set of Davis and Haltiwanger (1992) indicators over the 1996-2004 period: job creation, job destruction, and net job creation rates. Job creation is positive for an expanding or new business, and null for other establishments. On the opposite, job destruction is positive for a shrinking or exiting business, and null for others.

These measures are aggregated at the jurisdiction level, using a 1999 correspondence between cities and jurisdictions provided by the Ministry of Justice. The rates of job creations and job destructions from year t to year t+1 are computed relative to average employment in the two years. In comparison with cross-country analyses, these indicators also show a high heterogeneity across periods and across the 264 geographical jurisdictions. The job creation rate and the job destruction rate evolve around an average of 16%; thus the mean of the net job creation rate is zero (see Table 2).

To measure local unemployment, we use the number of unemployed as registered at the public employment office (ANPE) for each city as well as the city labor force as measured at the 1999 Census. Unfortunately, there is no data set giving us, at the local level of the city, the size of the temporary help service industry. Hence, we cannot perform an Autor's type analysis. However, in contrast with other European countries (such as Spain), the fraction of temporary workers in French total private employment is low (about 2.5% in 2009).

4.3 Instrumental Variables: Discussion and First Stage

We want to assess the causal effect of our indicators describing labor disputes on labor flows. Yet the judicial activity is likely to be endogenous. Our model can be used to discuss the endogeneity problems that we will face when estimating the relations between case outcomes and labor market characteristics. For instance, an adverse shock on the labor market conditions can affect case outcomes. First, according to the legislator, F compensates the worker for past and future potential wage losses, in particular by taking into account the difficulty of finding a new and comparable job. The magnitude of F is therefore likely to be countercyclical.[16] An economic downturn pushes $\overline{p_w}$,

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[16] Regressions of our indicators of judicial activity on local unemployment rates show that they are strongly correlated with the cycle (see Table A.1). The cyclical behavior of collective conflicts has been extensively studied in the literature (see Harrison and Stewart, 1994, or Devereux and Hart, 2010). The evidence about individual disputes is less extensive (see however Donohue and Siegelman, 1993).

$\overline{\overline{p_w}}$, and p_w^{**} downwards which results, other things being equal, in higher firing costs. Moreover, if workers exert more effort on the job during a downturn (with an efficiency wage story in mind), the overall distribution of p_w will shift upwards. Third, economic conditions might also alter the overall distribution of p_w through judges' behavior. Judges showing a pro-worker bias when labor market conditions deteriorate increase the firing costs faced by the firms (see Ichino et alii, 2003).

Thus we need instruments which explain the average outcomes observed at the level of the jurisdiction and are exogenous to current labor market developments. We claim that the institutional settings of the jurisdictions themselves and the local legal environment both provide us with convincing instruments because, as our model discussed, they are related to case outcomes by affecting various costs of litigation and because their variations **within** each jurisdiction are essentially random.

a) Lawyers

Our main instrument is the number of lawyers enrolled at the local bar – lawyers of all specialties, not only those specializing in labor disputes, a small fraction of the total -- scaled by total employment of the jurisdiction ("lawyer density" hereafter). In France, each lawyer has to get licensed and registered at the local Bar ("barreau") in order to be entitled to practice. We know the number of lawyers registered at each such "barreau" from 1996 to 2006. It allows us to have a local estimate of the number of lawyers (divided by employed worker). As there are fewer bars in France than Prud'hommes jurisdictions (181 versus 264), we match each Prud'homme to the closest bar using shortest route distance and compute the number of lawyers available to employees depending on one single Prud'homme. Using the 1999 Census, the national average is 77 lawyers per 10,000 employees, going from a minimum of 14 (Creuse) to a maximum of 868 (Paris).

An increase in lawyer density is likely to reduce legal fees thanks to greater competition (see Siegelman and Donohue, 1995, for a similar argument). Increased lawyer density also helps to disseminate legal expertise and judicial knowledge of labor disputes among the population of workers. It should correspond to a lower cost of litigation for the worker (k_t and k_c in our model) and hence influence the judicial activity and the case outcomes. This result of our model is true even without assuming that being represented by a lawyer increases the probability of winning.

One could argue that the lawyer's choice of location depends on local economic conditions. First, labor disputes are only a small amount of the total number of civil cases (11% at the national level[17]). Second, in order to get a license to practice, a lawyer must enroll the local bar which jurisdiction the

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[17] See available on line Info Stat justice (2005) « Une évaluation de l'activité des juridictions en 2004 » n° 80.

Prud'homme belongs to. This requirement and the building of a reputation and a clientele induce a low mobility of lawyers from one region to another. Moreover, a lawyer typically *enrolled the bar the city where she studied* and, hence, her location preference is likely to be unrelated to the incidence of labor disputes litigation. To see this, first note that there are only twelve law schools spread over French territory (see Figure 5). Then, observe the strong overlap between these areas where lawyers are trained and those that see the strongest increase in lawyer density over our time period (see Figure 6). Further supporting the identifying assumption that local labor market conditions are disconnected from the increase in lawyer density, lagged labor flows are found to have no predicting power on lawyer density when including jurisdiction fixed effects and year dummies (see Appendix Table A.2). Thus changes in lawyers' density *within* a Prud'homme should influence judicial outcomes through the cost and the efficiency of the litigation process. These changes are likely to be exogenous with respect to current labor market developments because lawyers' mobility is mostly driven by exogenous supply shocks due to lawyers location preferences, therefore making it a plausible instrument.

b) *Judges and Judicial Staff*

We also consider as instruments the number of judges and staff in charge of dealing with judicial cases (scaled by the local 1999 labor force). Both categories obviously have an impact on judicial decisions as well. Judicial activity can be modeled as a production function for the case disposition. Beenstock and Haitovsky (2004) using a panel data on Israeli courts find that judges complete more cases as their caseloads grow and complete fewer cases when new judges are appointed to their court. In the case of Prud'homme, the sociological literature[18] supports this result and states that facing an increasing number of cases and having to meet some productivity requirements, judges tend to be more meddlesome implying crossing out more cases for administrative reasons to speed up the process and lighten their burden. More judges or staff would imply a decreasing marginal cost of challenging the dismissal following Buchanan's club theory of public goods and thus increase the firing costs through a smaller k_t.[19]

Judges

Prud'hommes' judges are unequally spread over the French territory. Before 1979 when the "Réforme Boulin" took place, the administrative cost of the Prud'hommes was borne by the local administration and their creation mostly depended on a bargaining process between unions, firms, and this local

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[18] See Bonaffé-Schmidt (1987).

[19] In our approach, the congestion of the labor courts increases the cost of litigation which deters workers either to file or to refuse the settlement and therefore decreases the firing cost. Two recent papers by Besancenot and Vranceanu (2008) and Stahler (2008) relate labor courts to labor markets through the existence of "judicial mistakes". The congestion of the court pushes upward the number of judicial mistakes. Bad type workers – that is workers that have rightly been fired for a personal motive – have an incentive to go to court gambling on a judicial mistake. This is found under some assumptions – and contrasting with our view – to have an increasing impact on the firing costs.

administration. For instance, in those years (before 1979), 6 "départements"[20] out of 95 did not have a single labor court. In 1979, a legislation strongly supported by the Minister of Labor Robert Boulin transformed the financing and made it depend exclusively on central government resources. In addition, at least one labor court had to be present in every zone that also had a civil tribunal ("Tribunal de Grande Instance"). Since then, every additional change in the number of judges within a labor court or the opening of a new labor court depends on the outcome of a bargaining between the unions, the employers' federations, the local, and the national government. The process is supervised by a national agency ("Conseil national de la Prud'hommie"). This system generated strong rigidities with the consequence of essentially freezing the number of judges. This number stayed roughly the same from 1979 until 2008; every bargaining party preferring the status-quo. In 2008, the reform of the judicial map leading to the closing of 66 Prud'hommes out of 264 took stock of the misallocation of judges across the French territory.

The rigidities can partly be explained by the role of the unions. As explained before, labor courts are divided into 4 "sections" according to the industry of the firm (Agriculture, Retail Trade, Manufacturing, Services) and a fifth section for the "Cadres" (engineers, managers, and executives). CGT, the most important union in France, is traditionally well represented in manufacturing and is reluctant to accept a reduction in the number of judges allocated to the manufacturing section, even if the share of workers employed in the manufacturing industry has declined in the geographical area. To illustrate this point, we regress (using 1993 data) the local share of judges in a given section on the corresponding share of local employment (see Appendix Table A.3). We clearly see that there is no significant association between these shares in manufacturing and that the service industry is locally under-represented.

The elections for the Prud'hommes are actually crucial in France for trade unions as they are the only way to assess unions' representativeness at the national level. Over our sample period, 3 rounds of elections took place, in 1992, 1997, and 2002. For each round, we collected from the Ministry of Labor the share of judges affiliated with each union as well as the number of judges by section at the jurisdiction level. The number of judges did not change from 1993 to 2002 (see Table 3). Changes took place only in 1992 and after 2002 (see Table 4).

Digging into administrative archives of the French Ministry of Labor, the number of cases brought to labor courts seems to be the main apparent quantitative indicator used to decide these changes.[21] Thus,

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[20] A French "département" is equivalent to an American county.
[21] In the US, the Administrative Office of the United States Court uses statistics over the average time spent by judges to handle a case of a given type to give an appraisal of judge allocation.

nine labor courts were closed in 1992 because less than 100 cases were examined in a year. However, nine is far from the total number of all labor courts with less than 100 cases a year.

Figures 7 and 8 illustrate the dispersion of the jurisdictions across French territory. We compare the proportion of the judges working at the local jurisdiction with the size of the local labor market in 1991. For similar labor market sizes, the number of judges in some jurisdictions is twice that found in other jurisdictions. Turning to labor court activity, we plot in Figure 9 the average number of cases disposed every year by judges, a measure of their productivity. Hence, in some jurisdictions, judges deal with 10 times more cases than judges in other jurisdictions.

Hence, we consider that the number of judges and the changes in their allocation are mainly exogenous to labor market developments. One empirical illustration of this disconnection is given in Table A.2 where lags of labor flows are unable to predict the number of judges.

Judicial Staff

In the vein of our lawyer density indicator, we consider the total number of civil servants from the Ministry of Justice working at the civil court independently of the type of cases they deal with. We obtained the number of "greffiers" (clerks) employed by the Ministry of Justice attached to tribunals in the area of each "Tribunal d'instance"[22], closest to the labor court ("Staff" hereafter) over the 1992-2004 period. "Greffiers" are civil servants in charge of all the administrative tasks, which include assisting the workers in filing their cases as well as writing the judgment terms.

The allocation of these clerks is centrally set (by the Ministry of Justice). Their allocation planned at the national level responds to budget constraints and changes in the local caseload. At stressed before, Prud'hommes' cases represent a small share of the total civil case load and their steady number across the years is unlikely to have driven massive reallocations of judicial personnel. We check again that the clerks' density cannot be predicted by lagged labor flows (see again Table A.2).

The judge and staff densities influence the disposition of the cases through a congestion effect. Their allocation depends on institutional settings, which generate outcomes that seem largely disconnected from local economic developments and let us think that they offer the characteristics of good instruments.

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[22] As there are more "tribunal d'instance" than Prud'hommes (460 versus 264), we use again orthodromic distance for the matching.

Notice the variety of origins of our instruments: "staff" comes from the allocation by the central government of civil servants into local jurisdictions, "judges" are set by the institutional settings of the Prud'hommes, "lawyers" is related to location preferences of the lawyers.

c) First Stages and Reduced-Form Regressions

Table 5a presents the instrumental regressions (first stage) for each of our indicators of judicial activity on the set of potential instruments, controls (year and business cycle indicators, appropriately transformed as will be described later), and jurisdiction fixed effects. The F-statistics (test of the null of the equality to zero of the selected instruments) and its associated p-value are given in the last row of the Table. We first test the three instrumental variables together. Yet for three judicial indicators (filing rate, trial rate, winning rate), the lawyer density only has a significant coefficient; the F-statistics are thus small. The judge density has a very significant effect on the proportion of workers being represented by a lawyer. The other coefficients are less significant and the F-statistic is small.

Table 5b presents the first stages with only one instrument, the lawyers. The F-statistics for the worker lawyer rate is too small. Finally, for the worker lawyer rate, we keep the instrumental variable, which allow to have a large enough F-statistics: the judge density, as shown in Table 5c. For the conciliation rate, we keep two instrumental variables, the lawyer and the staff densities. Actually, the results of the second stage are very similar, whether the conciliation rate is instrumented only by lawyers or by lawyers and staff.

Judges and staff seem to increase the litigation taste of the workers. One explanation would be that more judges and more staff spread more knowledge of the judicial processes among the workers (possibly through the members of the unions). Thus we see on Table 5c that workers choose more often to pay for a lawyer when there are more judges; and the settlements are less easy when there is more staff.

Still, the main instrument is the lawyer density, which is able to instrument all indicators except of the worker lawyer rate. The effects of the lawyer density on the judicial indicators are consistent with our model, as we will show.

Consider the number of lawyers and assume that an increase in the number of lawyers induces a decrease in the costs of litigation for the worker (k_t and k_c), the decrease being larger for the cost at the trial stage than at the conciliation stage. We assume that the impact on the costs of litigation for the firm is negligible.

Under those assumptions, the model shows that $\overline{p_w}$ decreases more than $\overline{\overline{p_w}}$: more workers file a case since it is less costly, and as a proportion more end the case at the conciliation stage than at the trial stage. Finally, the firing cost increases for the firms (see Figure 10). This is consistent with the results of the first stage in Table 5b: more lawyers imply a higher filing rate, a higher conciliation rate, and a lower trial rate. It also implies a lower winning rate since the new workers who litigate have smaller probabilities of winning.

$$p_w(c_m + F) + (1 - p_w)c_m + l_t$$
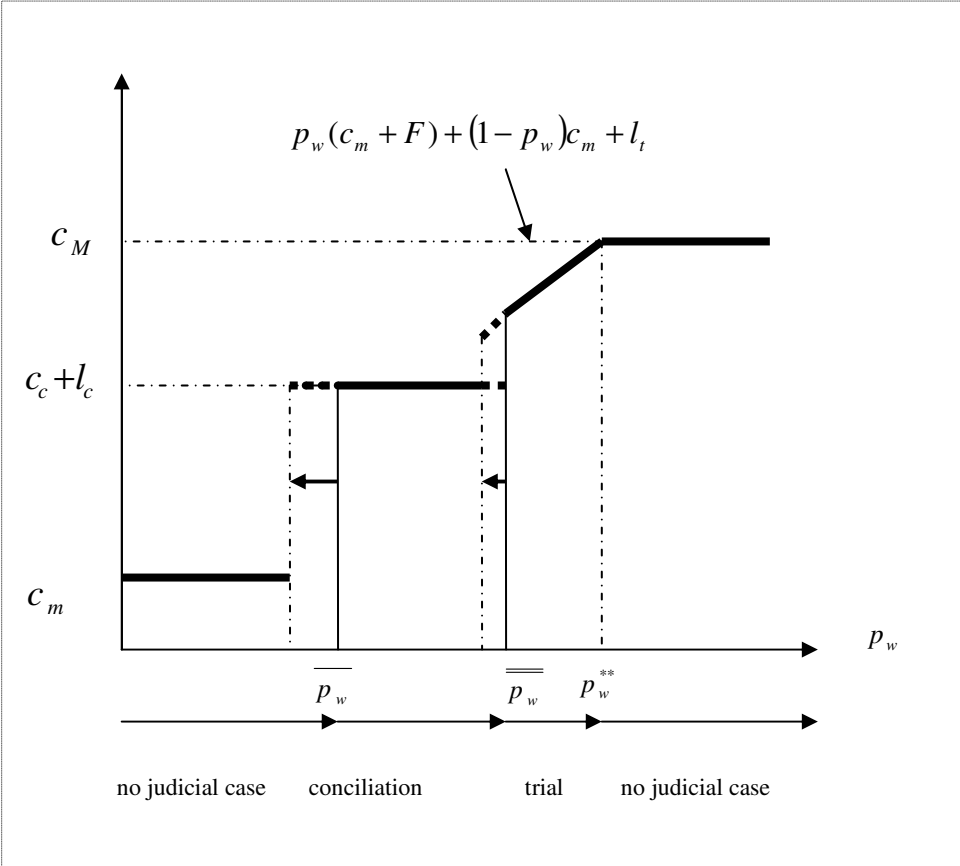
Fig. 10: Firing Cost, Case Outcomes and a Decrease in the Lawyers' Costs

To check that our instruments are well correlated with the labor flows, we compute reduced-form regressions. The results are presented in Table 6. First, judge and lawyer densities have a strong negative effect on job destructions, resulting in a clear positive effect on net job creations since job creations are less affected. The correlations of staff density on flows are not significant; still it is significant on net job creations.

In line with our previous analysis, more lawyers mean larger firing costs since filing a case is less expensive for workers. As said before, more judges or staff also decrease the cost of challenging the dismissal for the workers, and thus increase the firing costs. If that is true, we find in both cases that increasing the firing costs depress the job destructions, as our assumption was. We also find that only

job destruction rates are affected since the coefficients on job creation rates are not significant. Hence the increase in the firing cost has positive effects on the employment, at least in the short term.

5 Empirical Results

We intend to estimate the following econometric model:

$$Flows_{p,t} = \alpha_1 BC_{p,t} + \alpha_2 BC_{p,t-1} + \beta JudicialInd_{p,t} + \delta_p + \gamma_t + \varepsilon_{p,t} \tag{1}$$

where $JudicialInd_{p,t}$ is an indicator of judicial activity at the unit of observation p and for year t. $BC_{p,t}$ is a business cycle indicator. The unit of observation is the jurisdiction. Our labor market variables $Flows_{p,t}$ are the labor flows at the jurisdiction level. δ_p is a jurisdiction fixed effect; γ_t is the year effect and $\varepsilon_{p,t}$ is the residual. In each regression, observations are clustered at the local jurisdiction level. The jurisdiction areas display a large heterogeneity in size (measured by labor force or employment). Half of the jurisdictions account for about 80% of the 1991 total employment. We weight our regressions by the 1999 labor force of the jurisdiction area (results are unchanged when using total employment at the start of the period under review, 1991).

Table 7 presents results of regression (3) using OLS. All indicators except the filing rate are significantly correlated with the job destructions; trial rate and winning rate positively correlated; worker lawyer rate and conciliation rate negatively correlated. None of the indicators are significantly correlated with job creations. Finally, worker lawyer rate and conciliation rate are positively correlated with net job creations. The signs of the coefficients are consistent with the previous results of the first stage regression and the reduced-form regression.

To estimate the parameter β measuring the causal impact of the judicial activity on the labor market flows, we adopt an instrumental approach by projecting our outcome indicators on instruments Z, business cycle indicators, year dummies and local labor market fixed effects:

$$Outcome_{p,t} = \mu_1 BC_{p,t} + \mu_2 BC_{p,t-1} + \lambda Z_{p,t} + \delta_p + \gamma_t + \upsilon_{p,t} \tag{2}$$

We cannot use a business indicator such as the local unemployment rate, which is clearly too much correlated to the labor flows. Local unemployment rate probably reflects unobserved economic shocks which impact simultaneously the quality of the cases brought to labor court, bias the judges in their decisions, and affect the labor flows. Thus we build an indicator of business cycle, which takes into account the initial differences and reflects the national business cycle. To do this, we instrument the measure of local business cycles (number of unemployed registered at the local employment agency

on the 1999 local labor force) by the *national* unemployment rate (in the spirit of Bartik, 1991 or Blanchard and Katz, 1992) using the following relation:

$$U_{p,t} = \delta_p + \gamma_t + \mu_p U_{aggregate} + \eta_{p,t} \tag{3}$$

Then, we use the *predicted* value $\hat{U}$ of U by (3) to compute our exogenous measure of cycle *BC* as $\left(\overline{U} - \hat{U}\right)/\overline{U}$ where $\overline{U}$ is the average of the *predicted* local unemployment rate $\hat{U}$.

The results from our IV procedure are given in Table 8. As for the conciliation rate, which is the only indicator for which we use two instruments, the test of over identifying restrictions is given; the two instruments are valid.

The results of the IV procedure confirm those of the OLS. Yet the coefficients are larger and little more coefficients are significant. The results confirm that larger conciliation rate and worker lawyer rate dampen job destructions when larger trial rate and winning rate increase job destructions. The coefficient for the filing rate on job destructions is significant, on the opposite of the OLS.

The signs are consistent with our previous analysis. To sum up, a larger lawyer density encourages the workers to file a case, since it is less costly for the workers to challenge the dismissals. More workers go to the court, with low probabilities of winning. Proportionally, more of them have an interest to end at the conciliation stage instead of reaching the trial stage. Thus the conciliation rate increases, the trial rate decreases; and the winning rate decreases since there are workers with lower probabilities of winning at the trial stage.

Since more lawyers raise the firing costs, an increase in the conciliation rate and the filing rate reflects an increase of the firing costs, when an increase in the trial rate and the winning rate reflects a decrease of the firing costs. Thus our causal effects can be interpreted in terms of firing costs. We find then that larger firing costs deter firms from destroying jobs. They decrease job creation rates in a much smaller proportion, resulting in an increase in net job creations. To sum up for two specific indicators, settlements work in favor of workers when trials appear to help firms. More trials destroy (net) jobs when more settlements create (net) jobs. This result is also consistent with lengthy trials giving the firms the opportunity to escape paying immediate compensation.

The estimated effects are large, much larger than the estimates coming from the OLS regression. This is usual when using instrumental methods that give local estimates of the effects. A 1-standard-deviation increase in the conciliation rate or in the filing rate decrease the job destruction rate of 1.8 standard deviations. A 1-standard-deviation increase in the trial rate increase the job destruction rate of 2 standard deviations. The largest effects are obtained with the worker lawyer rate and the winning

rate: they have impacts close to 4 standard deviations. The effects on net job creations are smaller: they stand between 0.6 and 1.8 standard deviations (in absolute value).

That judicial activity has immediately a causal effect on labor flows might surprise. Actually the same regressions using the indicators of the judicial activity one year before give the same results. The dynamics of what we measure is not easy to understand. It must be recalled that the indicators are computed at the year when the cases end; most of the corresponding cases may have begun the year before or even before. The firms have already an assessment of the firing costs as soon as the cases are filed, assuming that they forecast correctly the probabilities of winning. This assumption is plausible in France where 1 dismissal over 4 ends in the labor courts; most employers have several experiences of trials.

Robustness Checks

The effects of our judicial outcomes on job flows are large. In order to assess their plausibility we exploit a natural experiment ran at the local level in the jurisdiction of Grenoble. Grenoble is a city situated at the foot of the French Alps in southeastern France. The jurisdiction of the labor court of Grenoble is the 15th largest jurisdiction in term of 1999 labor force (254,567). In 1996, in order to facilitate dispute resolution the French Parliament passed a law empowering the judges to mandate a mediator. This law went unheeded since labor courts were already supposed to be a place where the parties were invited to conciliate during the mandatory stage of conciliation. In 1995, the judge Blohorn-Brenneur was appointed at the Circuit court of appeals of Grenoble and decided to exploit the possibilities offered by this law in order to enhance the conciliation process. Starting in 1998, it was done by a) sending out an information letter and a questionnaire to the parties in order to increase parties' awareness of mediation, b) offering mediation and conflict management training to the judges of Grenoble, and c) organizing specific hearing where mediation services were proposed to the parties. [23] This experiment led to a strong increase in the conciliation rate from 1998 onwards at the jurisdiction of Grenoble. In order to assess its impact on job flows, we run a simple difference in difference regression of the form:

$$Flows_{p,t} = \alpha_1 BC_{p,t} + \alpha_2 BC_{p,t-1} + \beta \times Grenoble \times Post1998 + \delta_p + \gamma_t + \varepsilon_{p,t} \qquad (4)$$

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[23] See « La Médiation Prud'homale » by Béatrice Blohorn-Brenneur in « Refondation du droit social, concilier protection des travailleurs et efficacité économique » Gilbert Cette et Jean Barthélémy, Rapport du Conseil Economique et Social. The summary in English of the whole report is to be found page 191-197. The Judge Blohorn-Brenneur founded with others the European Association of Judges for Mediation in 2003.

Where Grenoble is a dummy equaling one for the jurisdiction of Grenoble interacted with a dummy equaling one on the treatment period (1998-2003). We estimate in Table 9 equation (4) considering, at first, the rest of French jurisdictions as the control group. In order to check if local specific shocks might jeopardize the identifying assumption of the difference-in-difference method, we consider as additional control groups 1) the jurisdictions of similar sizes (that is displaying a 1999 labor force between 150,000 and 400,000) and 2) the jurisdictions surrounding the jurisdiction of Grenoble: the other jurisdictions in Isère, the 'département' where Grenoble is located and the jurisdictions belonging to 'départements' contiguous to Isere. The last column of the table displays the parameter β associated to an equation similar to (4) where the conciliation rate is now the explained variable. The Grenoble experiment increases substantially the conciliation rate making it larger than the national average by around 8 percentage points, i.e. about one standard deviation of the conciliation rate measured across years and jurisdictions. The difference is similar when Grenoble is compared to contiguous jurisdictions and jurisdictions of similar size. Turning to the impact of the experiment on labor flows, as in our instrumental regressions a higher conciliation rate is found to depress job destructions. Although obtained on different time periods and through different identification strategies that can be also interpreted as local average treatment effect as suggested by Imbens and Angrist (1994), the causal impact of the conciliation rate on job destructions evolves within similar ranges: a one standard deviation increase in the conciliation rate leads to an increase in the job destruction rate of 2-4 percentage points (e.g. one standard deviation) using the difference-in-difference estimates and of 6 percentage points using the instrumental regressions (i.e. 1.5 standard deviation).

As an additional check, we propose a falsification test based on the different provisions protecting from unfair dismissals across types of workers. By law, firing constraints are reduced for workers who have less than two years of seniority. In that case, the severance payment due for the absence of "real and serious cause" is not subject to the minimum amount of 6 months of wage but is limited to a compensatory award that can be nil if the worker has found a new job. Therefore, one can assume that the impact of the judiciary is more limited on the flows for such workers. Using the French labor force survey, we compute the ratio of workers that have been dismissed within the year and that had a seniority of less than two years over the number of employees in the private sector. Unfortunately, the labour force survey does not allow to compute the data at the jurisdiction level; the indicators are thus built at a slightly larger geographical level, the 'département" level; one 'département' comprises on average three jurisdictions.

As we are at a more aggregate level and on a shorter period, our instruments lose some of their explanatory powers. However, the lawyer density at the 'département' level keeps its strong explanatory power of the worker lawyer rate as well as the conciliation rate (see Table 10a). The

results of the 2SLS estimation are not conclusive for the conciliation rate since none of the coefficients are significant. Turning to the worker lawyer rate, one can see that the negative causal impact of legal representation on job flows is still present at the département level when all jobs are included but, as expected, is zero for the inflows of short tenured workers into unemployment.

6 Conclusion

This article examines the impact of judicial activity on labor markets for France using an original data set of individual labor disputes brought to court over the years 1996 to 2003. First, we present a simple theoretical model showing that judicial case outcomes are difficult to interpret in terms of firing costs. The clearest example is the fraction of cases that go to trials. Firms faced with low litigation costs may well prefer to fire their personnel for personal motive and risk litigation rather than to fire them for economic motives, avoid lawsuits but pay a large separation cost. In this situation, trials are induced by lower firing costs. Workers faced with low litigation costs are more likely to sue the firm. Trials are now induced by higher firing costs.

Second, we exploit our model as well as the French institutional setting and the local legal environment to generate instruments for these endogenous outcomes. For instance, because lawyers tend to open their practice close to the university they were enrolled at, changes in their number are unrelated to the number of cases in each labor court except through the litigation costs. Using these instruments, we show that judicial activities have a causal effect on labor flows. More trials in general and more trials won by the workers cause more job destructions. More settlements, higher filing rates, a larger fraction of workers represented at trial dampen job destructions.

Hence, the web of legislations and the variety of local situations affect the enforcement of legislation and legal outcomes. The nature of real EPL is likely to be the product (or the sum) of multiple effects. It is therefore not surprising that broad macro analyses ignoring this dimension yield inconclusive outcomes.

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Model Appendix:

The employer dismisses the worker at the minimum cost, instead of paying the maximum severance payments, if:

$$p_f \{ p_c (c_c + l_c) + (1 - p_c)[p_w(c_m + F) + (1 - p_w)c_m + l_t]\} + (1 - p_f)c_m < c_M$$

As for the worker, she chooses to challenge her dismissal ($p_f = 1$) if her expected gain at trial or at the conciliation stage is larger than the minimum severance payment:

$$p_w(c_m + F) + (1 - p_w)c_m - k_t > c_m \text{ or } c_c - k_c > c_m$$

Thus the worker chooses to go to court if the gain at trial is large enough ($p_w(c_m + F) + (1 - p_w)c_m - k_t > c_m$, that is $p_w > \overline{p_w} = \dfrac{k_t}{F}$). The worker would prefer the agreement ($p_c = 1$) than the trial when $p_w(c_m + F) + (1 - p_w)c_m - k_t < c_c - k_c$, i.e.

$$p_w < \overline{\overline{p_w}} = \frac{c_c - c_m + k_t - k_c}{F}$$

Yet the firm can refuse the agreement.

On the firm side, the firm dismisses the worker offering the minimum cost if:

$$p_w(c_m + F) + (1 - p_w)c_m + l_t < c_M$$

that is:

$$p_w < p_w^{**} = \frac{c_M - c_m - l_t}{F}$$

We assume that the compensatory award F is large enough so that when the firm is certain to lose at trial, it is less costly to pay the maximum severance payment. That is: $c_M < c_m + F + l_t$ and thus $p_w^{**} < 1$.

In addition, the firm accepts the conciliation only if it is less costly than going to trial, that is:

$$p_w(c_m + F) + (1 - p_w)c_m + l_t > c_c + l_c$$

which means:

$$p_w > p_w^* = \frac{c_c - c_m - l_t + l_c}{F}$$

In order a conciliation to exist, suing must be a credible threat to the employer. Therefore, we impose that $p_w^* < \overline{p_w}$ that is $c_c - c_m + l_c < k_t + l_t$. In addition, there must a probability range where the worker is better off to conciliate than going to trial. We must have $\overline{p_w} < \overline{\overline{p_w}}$ that is $c_m < c_c - k_c$. Finally, for the trial stage to exist, the firm must be better off in some probability range to go to trial rather than giving the compensatory award c_M that protects against any suing : $\overline{\overline{p_w}} < p_w^{**}$.

To summarize, we have five assumptions:

Assumptions:

    Condition (1): $k_t > c_c - c_m + l_c - l_t$: the cost of trial is sufficiently large ($p_w^* < \overline{p_w}$)

Condition (2): $c_c - k_c > c_m$: the gain for the worker at the conciliation stage is larger than the severance payment she receives in case of firing for a personal motive ($\overline{p_w} < \overline{\overline{p_w}}$).

Condition (3): $c_c + l_c < c_M$: the cost for the firm at the conciliation stage is smaller than the severance payment received by the worker in case of firing for an economic motive.

Conditions (1), (2) and (3) taken together allow for the possibility of a **conciliation** stage.

Condition (4): The compensatory award F is large enough so that when the firm is certain to lose at trial, it is less costly to pay the maximum severance payment. That is: $c_M < c_m + F + l_t$. It implies $p_w^{**} < 1$ and excludes an equilibrium in which the law has no deterrent effect, every worker being fired for a personal motive.

Condition (5): $c_c - k_c + k_t + l_t < c_M$: there is a probability range for a trial to exist. The firm is better off at trial than paying c_M.

Result:

Under these assumptions we end up with four equilibria:

- $p_f = 0$ and $p_c = 0$ if $p_w < \overline{p_w}$

- $p_f = 1$ and $p_c = 1$ if $\overline{p_w} < p_w < \overline{\overline{p_w}}$ (with $p_w^* < \overline{p_w}$)

- $p_f = 1$ and $p_c = 0$ if $\overline{\overline{p_w}} < p_w < p_w^{**}$

- the firm pays c_M if $p_w > p_w^{**}$
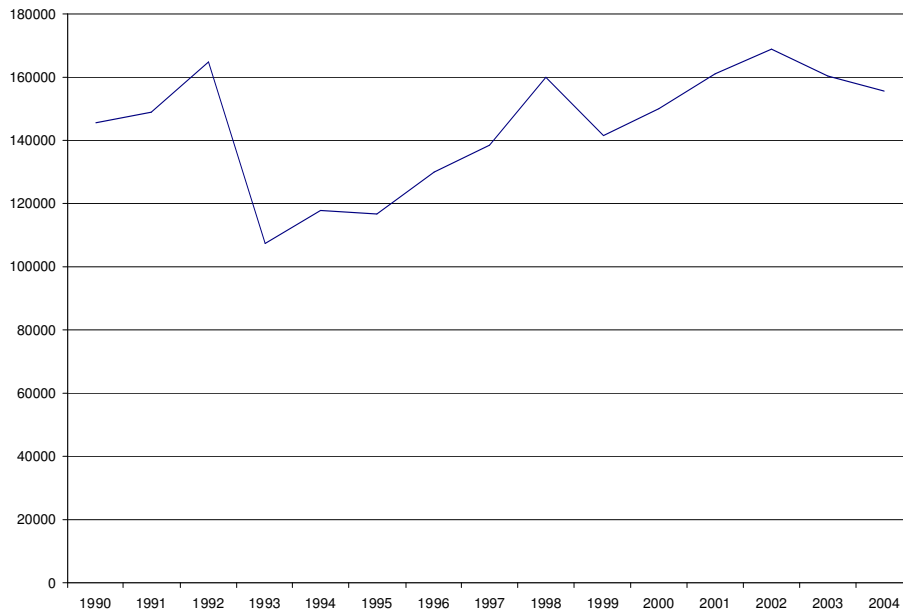
Figure 4: Number of Filed Cases

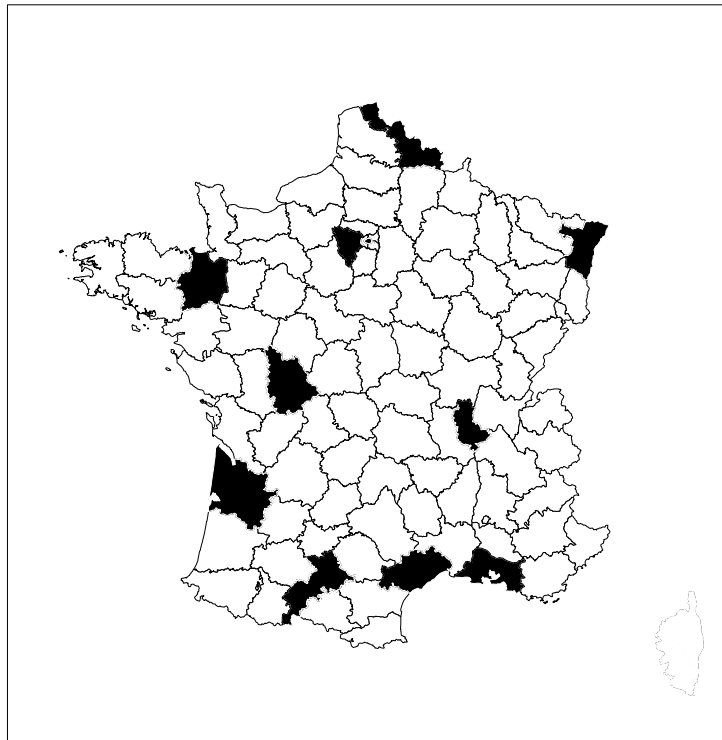Figure 5: Map of the Universities Training Lawyers

Figure 6: Map of the Changes in the Lawyer Density between 1996 and 2003
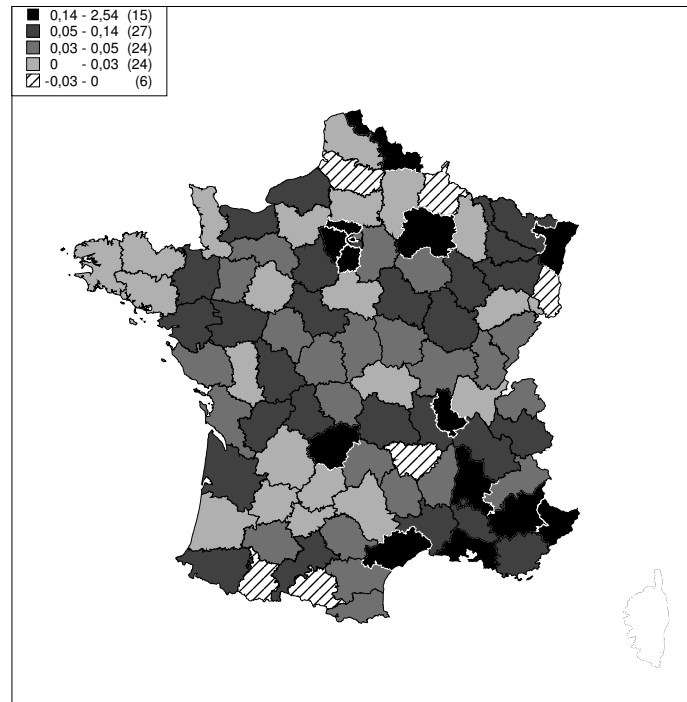

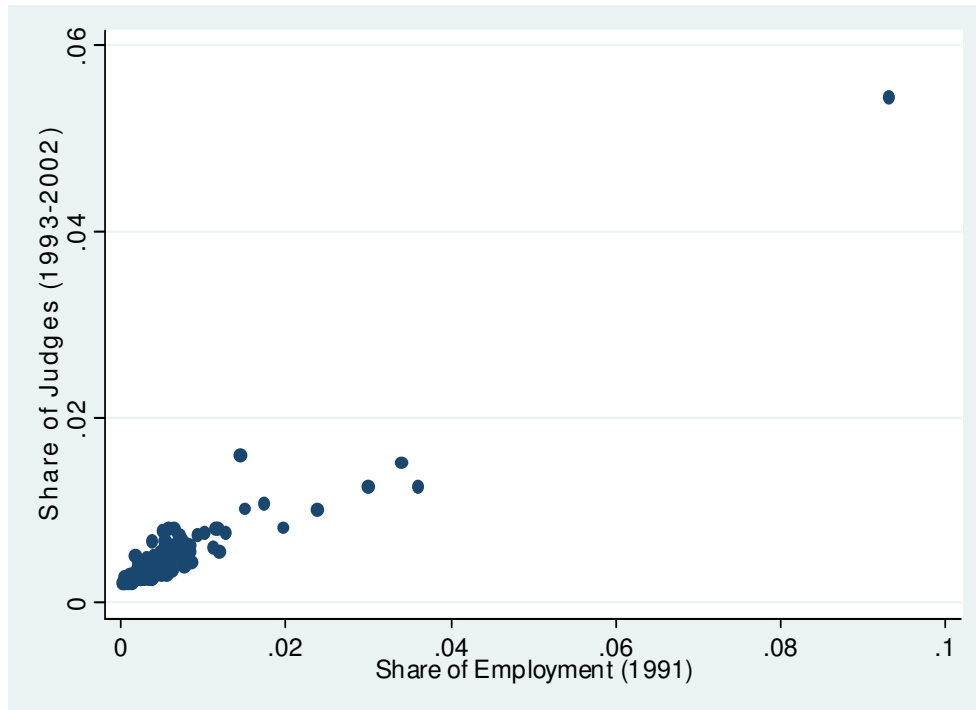Figure 7: Allocation of Judges

Figure 8: Allocation of Judges (without the 6 Largest Jurisdictions)
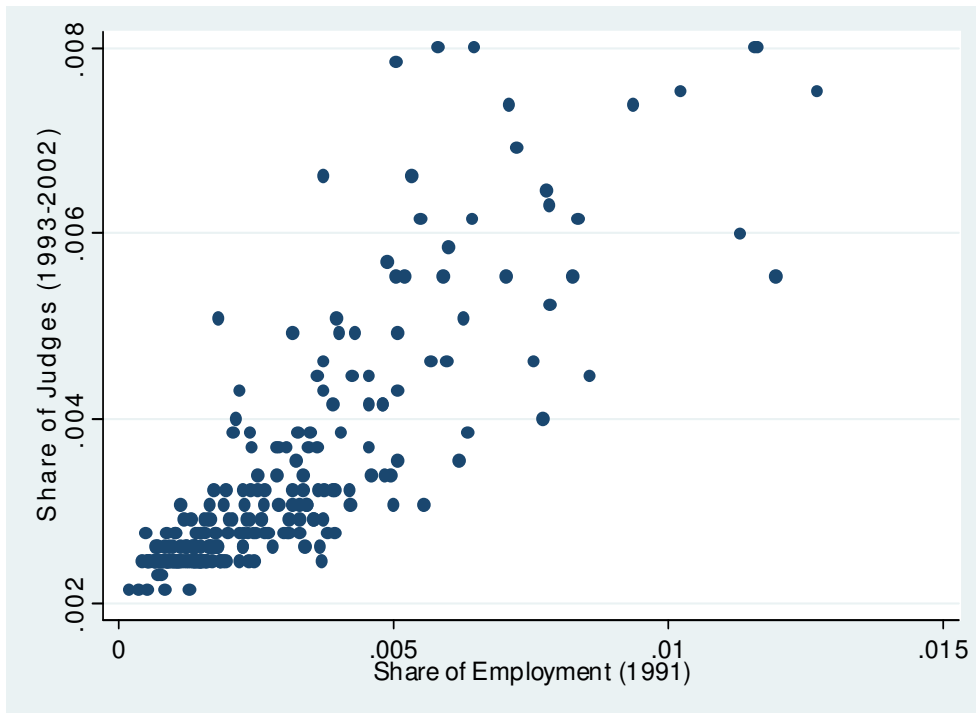
Figure 9: Productivity of Judges across Jurisdictions
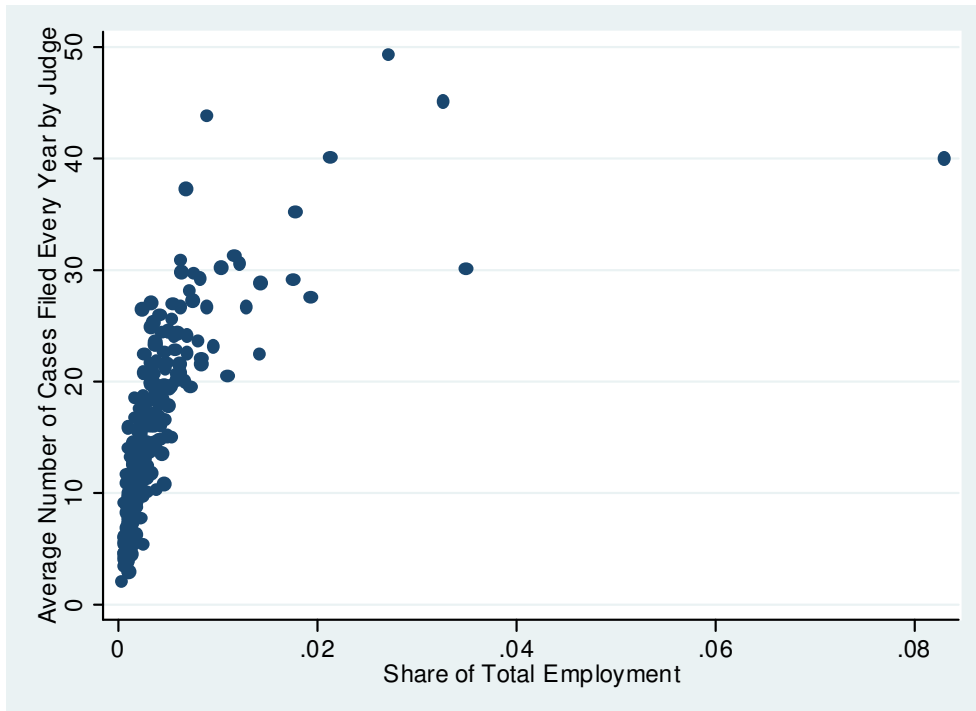
Table 1: Judicial Indicators: Definition of Variables

Names	Definition
Filing rate	Number of cases filed over number of dismissals
Worker Lawyer rate	Number of cases where the worker is represented by a lawyer over the total number of cases
Conciliation rate	Number of cases leading to a conciliation or an agreement between the parties over the total number of cases
Trial rate	Number of cases reaching the trial stage over the total number of cases
Winning rate	Number of cases won by the worker at trial over the total number of cases

Notes: These variables are computed at the jurisdiction level (jurisdiction*year)

Table 2: Summary Statistics: Judicial Indicators and Job Flows

	Mean	Std.	Min	Max
Judicial Indicators :				
Filing rate	0,22	0,11	0,03	0,98
Worker Lawyer rate	0,48	0,15	0,00	0,95
Conciliation rate	0,20	0,09	0,00	0,77
Trial rate	0,61	0,10	0,19	0,95
Winning rate	0,45	0,09	0.09	0,93
Job Flows :				
Job Destructions	0,16	0,04	0,07	0,52
Job Creations	0,16	0,06	0,05	0,71
Net Job Creations	0,00	0,07	-0,63	0,43

Notes: Means of the jurisdition*year indicators, over the 264 jurisdictions and the years 1996-2003.

Table 3: Number of Judges by Section and Change over the Electoral Terms

	Number of judges in 1987	Change in % between term t and term t-1 (t/t-1)		
		1992/1987	1997/1992	2002/1997
Manufacturing	2 213	-15	0	-9
Service	1 266	0	0	11
Trade	1 831	5	0	1
Management	1 278	10	0	4
Total	6 588	-1	0	1

Table 4: Changes in the Numbers of Judges across the sections of the 264 Jurisdictions

	1992 Election			2002 Election		
	Manufacturin	Service	Trade	Manufacturin	Service	Trade
lost 3 judges or more	17	4	4	7	0	0
lost 2 judges	17	0	0	8	0	0
lost 1 judges	16	2	6	27	1	25
no change	44	85	58	56	79	58
gained 1 judges	3	5	17	1	9	9
gained 2 judges	1	2	10	1	5	3
gained 3 judges or more	1	2	6	0	6	4
	100	100	100	100	100	100

Note: read as % of jurisdictions that lost (or gained or no change) x judges in the election year t

Table 5a: First Stage Regressions: Effect of Legal Inputs on Judicial Indicators

	Filing rate	Worker Lawyer rate	Conciliation rate	Trial rate	Winning rate
Lawyers	10.88***	5.556**	7.897***	-8.491***	-4.112***
	(1.661)	(2.704)	(2.101)	(2.743)	(1.434)
Judges	-154.1	567.8***	-123.0	376.0	372,5
	(138.4)	(211.4)	(278.4)	(257.7)	(220.6)
Staff	-0.204	19.25*	-10.76*	9.847	10.16
	(4.781)	(10.24)	(6.670)	(11.27)	(6.693)
R-squared	0.140	0.251	0.276	0.226	0,189
F-test of joint sgnificance (p-value)	14,69	5,66	8,44	3,91	4,6

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Observations are for 264 jurisdictions and for the years 1996-2003 (2,112 obs.). Each regression includes jurisdiction and year fixed effects, and local business cycle indicators. 1999 labor force of the jurisdictions is used as weights. Clusters: jurisdiction level. F is the F statistic of the joint significance of the variables.

Table 5b: First Stage Regressions: Effect of Legal Inputs on Judicial Indicators

	Filing rate	Worker Lawyer rate	Conciliation rate	Trial rate	Winning rate
Lawyers	10.39***	5.524*	7.331***	-7.539***	-3.864***
	(1.629)	(2.833)	(2.059)	(2.647)	(1.347)
R-squared	0.140	0.243	0.273	0.221	0.186
F-test of joint sgnificance (p-value)	40.68 (0.000)	3,8	12,67 (0.000)	8.11 (0.004)	8.21 (0.000)

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Observations are for 264 jurisdictions and for the years 1996-2003 (2,112 obs.). Each regression includes jurisdiction and year fixed effects, and local business cycle indicators. 1999 labor force of the jurisdictions is used as weights. Clusters: jurisdiction level. F is the F statistic of the joint significance of the variables.

Table 5c: First Stage Regressions: Effect of Legal Inputs on Judicial Indicators

	Worker Lawyer rate	Conciliation rate
Lawyers		7.772***
		(1.934)
Judges	646.8***	
	(187.8)	
Staff		-10.80*
		(6.675)
R-squared	0.259	0.276
F-test of joint sgnificance (p-value)	11.93 (0.000)	12.39 (0.000)

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Observations are for 264 jurisdictions and for the years 1996-2003 (2,112 obs.). Each regression includes jurisdiction and year fixed effects, and local business cycle indicators. 1999 labor force of the jurisdictions is used as weights. Clusters: jurisdiction level. F is the F statistic of the joint significance of the variables.

Table 6: Judicial Indicators on Job Flows: Reduced-form Regressions

	Job Destructions	Job Creations	Net Job Creations
Lawyers	-5.734***	-0.832	4.902***
	(1.181)	(1.065)	(1.650)
Judges	-511.4***	-158.7*	352.7**
	(139.8)	(83.26)	(149.1)
Staff	6.863	-2.125	-8.989**
	(4.263)	(2.037)	(3.647)
R-square	0.433	0.457	0.565

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Observations are for 264 jurisdictions and for the years 1996-2003 (2,112 obs.). Each regression includes jurisdiction and year fixed effects, and local business cycle indicators. 1999 labor force of the jurisdictions is used as weights. Clusters: jurisdiction level.

Table 7: Judicial Indicators on Job Flows: OLS Estimates

	Job Destructions	Job Creations	Net Job Creations
Filing rate	0.0169	-0.00703	-0.0239
	(0.0188)	(0.0126)	(0.0212)
R-square	0.43	0.48	0.59
Worker Lawyer rate	-0.0469**	-0.00588	0.0410**
	(0.0182)	(0.0103)	(0.0199)
R-square	0.41	0.47	0.56
Conciliation rate	-0.0439**	-0.00504	0.0389*
	(0.0222)	(0.0134)	(0.0221)
R-square	0.40	0.47	0.56
Trial rate	0.0363**	0.00431	-0.0320
	(0.0180)	(0.0114)	(0.0209)
R-square	0.40	0.47	0.56
Winning rate	0.0382**	0.00704	-0.0312
	(0.0185)	(0.0117)	(0.0211)
R-square	0.40	0.47	0.56

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Observations are for 264 jurisdictions and for the years 1996-2003 (2,112 obs.). Each regression includes jurisdiction and year fixed effects, and local business cycle indicators. 1999 labor force of the jurisdictions is used as weights. Clusters: jurisdiction level.

Table 8: Judicial Indicators on Job Flows: 2SLS Estimates

	Job Destructions	Job Creations	Net Job Creations
Filing rate	-0.674***	-0.272**	0.402*
	(0.179)	(0.131)	(0.214)
Instruments : Lawyers			
R-square	0.215	0.314	0.459
Worker Lawyer rate	-1.065***	-0.205*	0.859**
	(0.373)	(0.116)	(0.371)
Instruments : Judges			
R-square	0.375	0.355	0.56
Conciliation rate	-0.772***	-0.0699	0.702***
	(0.216)	(0.129)	(0.268)
Test of overidentifying restrictions (p-value)	0.805	0.151	0.856
Instruments : Lawyers and staff			
R-square	0.278	0.446	0.253
Trial rate	0.829**	0.140	-0.689**
	(0.344)	(0.168)	(0.278)
Instruments : Lawyers			
R-square	0.735	0.401	0.132
Winning rate	1.617***	0.273	-1.345**
	(0.608)	(0.305)	(0.541)
Instruments : Lawyers			
R-square	0,31	0.281	0.191

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Observations are for 264 jurisdictions and for the years 1996-2003 (2,112 obs.). Each regression includes jurisdiction and year fixed effects, and local business cycle indicators. 1999 labor force of the jurisdictions is used as weights. Clusters: jurisdiction level.

Table 9: Impact of the Conciliation Rate: Difference-in-Difference Estimates of the Brenner Experiment

	Job Destructions	Job Creations	Net Job Creations	Conciliation rate
Treatment Group: Jurisdiction of Grenoble				
Control Group: Rest of France				
Observations = 3393 (263 juridisctions)				
Grenoble*Post1998	-0.0371***	-0.0297***	0.00732***	0.0833***
	(0.00185)	(0.00171)	(0.00178)	(0.00389)
R-square	0.332	0.376	0.463	0.109
Control Group: Jurisdictions of Similar Size				
Observations = 494 (38 jurisdictions)				
Grenoble*Post1998	-0.0414***	-0.0352***	0.00624	0.0642***
	(0.00335)	(0.00376)	(0.00388)	(0.00630)
R-square	0.384	0.499	0.560	0.297
Control Group : Jurisdictions within Contiguous Départements				
Observations = 416 (32 jurisdictions)				
Grenoble*Post1998	-0.0206***	-0.0167***	0.00384	0.0711***
	(0.00377)	(0.00282)	(0.00409)	(0.00779)
R-square	0.408	0.619	0.604	0.180

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Each regression includes jurisdiction and year fixed effects. Clusters: jurisdiction level. Grenoble is a variable equal to 1 for the jurisdiction of Grenoble. Post1998 is a variable equal to 1 if the year of observation is after 1998. Grenoble*Post1998 is a variable equal to 1 for the jurisdiction of Grenoble after 1998. This is the difference-in-difference variable of interest.

Table 10a: First Stage Regressions at the 'département' level

	Filing rate	Worker Lawyer rate	Conciliation rate	Trial rate	Winning rate
Lawyers	-12.44	19.04***	18.02***	-11.05**	-2.230
	(8.828)	(4.002)	(3.700)	(4.700)	(4.225)
R-squared	0.535	0.377	0.274	0.249	0.174
F-test of joint sgnificance	1.990	22.67	23.75	5.532	0.279

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Observations are for 94 'départements' and for the years 1996-2002 (658 obs.). Each regression includes département and year fixed effects, and local business cycle indicators. 1999 labor force of the jurisdictions is used as weights. Clusters: département level.

Table 10b: 2SLS Estimates: Falsification Test

	Job Destructions	Job Creations	Net Job Creations	Dismissed persons with seniority less than 2 years
Worker Lawyer rate	-0.225*	-0.198*	0.0273	-0.0364
	(0.139)	(0.117)	(0.0948)	(0.0442)
Instruments: Lawyers				
R-square	0.306	0.460	0.508	0.382
Conciliation rate	-0.235	-0.208	0.0271	-0.00386
	(0.209)	(0.167)	(0.105)	(0.0584)
Instruments: Lawyers				
R-square	0.317	0.494	0.504	0.400

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Observations are for 93 Départements and for the years 1996-2002 (651 obs.). Dismissed persons with few seniority is the ratio of workers laid-off within the year with a job tenure of less than 2 years. By law, these workers can not obtain the minimum of 6 months of severance payment but only compensatory awards. Each regression includes département and year fixed effects, and local business cycle indicators. 1999 labor force of the jurisdictions is used as weights. Clusters: département level.

Appendix Tables

Table A.1: Judicial Indicators and the Business Cycle

	Filing rate	Worker Lawyer rate	Conciliation rate	Trial rate	Winning rate
Unemployment rate	0.897***	-0.876***	1.177***	-1.435***	-1.353***
	(0.108)	(0.0880)	(0.118)	(0.141)	(0.135)
R-squared	0.038	0.046	0.056	0.093	0.076

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Observations are for 264 jurisdictions and for the years 1996-2003 (2,112 obs.). Each regression includes jurisdiction and year fixed effects. 1999 labor force of the jurisdictions is used as weights. Clusters: jurisdiction level.

Table A.2: The Impact of Past Labor Flows on Lawyer, Judge and Staff Densities

	Lawyers	Judges	Staff
Job Destructions (-1)	-0.0004	-0.0000	0.0000
	(0.0003)	(0.0000)	(0.0001)
Job Destructions (-2)	-0.0002	-0.0000	-0.0000
	(0.0002)	(0.0000)	(0.0001)
R-squared	0.11	0.01	0.12

	Lawyer	Judges	Staff
Job Creations (-1)	0.0001	-0.0000	0.0001
	(0.0004)	(0.0000)	(0.0001)
Job Creations (-2)	0.0006	0.0000	-0.0000
	(0.0006)	(0.0000)	(0.0001)
R-squared	0.11	0.00	0.12

	Lawyer	Judges	Staff
Net Job Creations (-1)	0.0003*	0.0000	0.0000
	(0.0002)	(0.0000)	(0.0001)
Net Job Creations (-2)	0.0005	0.0000	0.0000
	(0.0003)	(0.0000)	(0.0001)
R-squared	0.11	0.00	0.12
Observations	2103	2904	2860

Robust standard errors are between parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%. Each regression includes jurisdiction and year fixed effects. 1999 labor force of the jurisdictions is used as weights. Clusters: jurisdiction level.

Table A.3: (Mis)allocation of Judges by Industry

Dependent variable: 1993 local share of judges in the industry	Manufacturing	Trade	Service
1993 local share of employment in the industry	0.002	0.203***	-0.451***
	(0.014)	(0.015)	(0.031)
Observations	264	264	264
R-squared	0.00	0.19	0.21

Notes: Columns (2) (3) and (4) display the regressions of the proportion of local number of judges allocated to industry i in the national aggregate on the corresponding proportion of employment. Standard errors in parentheses. * significant at 10%; ** significant at 5%, ***significant at 1%.