Are Pro-Worker Judges Detrimental to Firm Survival and Employment?

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January 2019

Abstract

In European countries, recent reforms of employment protection legislation aimed at reducing the supposedly differentiated treatment by judges of compensations for wrongful dismissal, supposed to be detrimental to employment and to the survival of small firms. However, there is only anecdotal evidence on this issue. To fill this gap, this paper provides new information about 55,000 Appeal Court decisions merged with administrative firm-level records covering all the universe of French firms. The quasi-random assignment of judges to cases reveals that judges bias has statistically significant effects on the survival, employment and hires of small low performing firms. Such results are consistent with the standard effect of the level of firing compensation on worker flows. We go one step further and provide novel insights about the effects of the variability of compensations: setting all judges biases at the mean - *i.e.* eliminating any judge-related dispersion - would decrease the liquidation probability of small low performing firms within 3 years after the judgment by 5% (*i.e.* 0.3 percentage point) and would increase their employment growth by 14% (*i.e.* 2.2 percentage points).

Key words: Dismissal compensation, judge bias, firm survival, employment.
JEL Codes: J33, J63, J65.

Acknowledgements We thank the *Chaire Sécurisation des Parcours Professionnels* for its financial support. We thank Camille Hebert for providing invaluable help in retrieving firm identifiers. We also thank Yanos Zylberberg and seminar participants at CREST and Sciences Po for their comments.

1 Introduction

On 28 July 2016, the French Magazine *Capital*[1] released a paper telling the story of a cleaning agent who signed an agreement to terminate his labor contract, but afterward filed a court action to claim 423,004 euros of compensation. The court dismissed his case. But the plaintiff obtained satisfaction when he brought the case to the Appeal Court. Magma Distribution, a small hi-fi sales company was ordered to pay him 310,000 euros. The following week, the company, unable to meet this expense, was placed under judicial redress.

This type of anecdotal evidence about the detrimental effects of the differentiated treatment by courts in matter of compensation for wrongful dismissal appeared regularly in the media when the French government tried to pass laws limiting the amount of compensation in these cases. This aim was reached by the Macron labor market reforms enacted in September 2017, which introduced a floor and a ceiling to amounts granted by judges. This issue is a concern not only in France, but also in other countries with stringent employment protection regulations. In Italy, the Jobs Act, adopted under the Renzi government in December 2014, also aimed at reducing uncertainty due to excessive litigation and unpredictability of judges' decisions.[2] Actually, the power of judges in compensating the individual damages following wrongful dismissals is capped in a majority of European countries (see Annex A).

It is striking that these important reforms have been passed without any hard evidence about the source of variability of compensations for wrongful dismissals and *a fortiori* their potential impact on firm performances. To the best of our knowledge, no study has documented these facts beyond the anecdotal evidence reported by the media. For instance, the only evidence provided by the French government and the presidential majority in parliament to prove that the variability of compensation stemmed from

[1] Audrey Leplâtre, Quand les juges écrasent les petits patrons aux prud'hommes, https://www.capital.fr/votre-carriere/quand-les-juges-ecrasent-les-petits-patrons-aux-prud-hommes-1152273

[2] See Boeri and Garibaldi (2018) and Pietro Ichino's analysis of the Jobs Act https://www.pietroichino.it/?p=47551. The reform made two important changes in this respect. It created a new indefinite-duration contract the protection of which increases with tenure, and confining the possibility of reinstatement of workers following wrongful dismissal to discriminatory cases. The Jobs Act also introduced a new form of out-of-court procedure, according to which the employer can pay the worker an indemnity, the acceptance of which prevents the worker from appealing to courts. This indemnity (tax free) is equal to 2 monthly wages in the first two years of tenure and then an additional 1 monthly wage per year of service, with a maximum amount of 18 monthly after 18 years of service. Moreover an additional fixed schedule, slightly more favorable to the worker (but subject to taxation), was made mandatory following a trial in case of unfair dismissal.

"differentiated treatment by judges" was the large dispersion of amounts conditional on seniority and wage.[3] This evidence is inconclusive: the compensation level must depend on the specific prejudice caused to the worker, which can only be appreciated after a thorough examination of each case. As claimed by the main left-wing judges trade union in a comment about the Macron Labor reform: "It is clear, however, that each dismissal is different and that the resulting prejudice cannot be standardized. The industry, the employment held, the qualification, age, family status of the employee are all factors that are likely to vary its injury in case of dismissal."[4] The other main judges trade union shares the same view.[5] Hence, the variability of compensations conditional on some observable characteristics of the worker and the firm cannot be interpreted as arising from the sole subjectivity of judges. Revealing the extent of subjectivity in judicial decisions not only requires individual data on granted compensations for wrongful dismissal but also a credible identification strategy to detect whether the subjectivity of judges influences these amounts. The aim of our paper is to contribute filling this gap.

To that end, we extracted rich information from about 55,000 Appeal Court decisions over the period 2006-2016. To identify the effects of judge-specific differences on compensations for wrongful dismissals, we compare the compensations decided by subsequent presidents of social chambers within the same social chamber of the same Appeal Court within the same year. We focus on presidents of social chambers because they preside over the Court, composed of themselves and two assessors, and they are in charge of supervising all the rulings. Accordingly, they play a key role in the judgments. In a given year, the president of a social chamber may move to another job, either to another Appeal Court or to another position within the same Court, and is then replaced by a new president. The initial president and the new president may have different interpretations of labor laws influencing the qualification of the dismissal and the compensation if the dismissal is

[3]Etude d'Impact, Projet de loi d'habilitation à prendre par ordonnances les mesures pour le renforcement du dialogue social, 27 June 2017, pp 36-38. It is claimed, page 37 that: "These differences can not be explained by differences in the salary and seniority of employees in the company. In particular, they reflect differentiated treatment by judges in comparable situations." See also, Journal Officiel de la République Française, Session ordinaire de 2016-2017, 69e seİance, Compte rendu intégral, 2e seİance du jeudi 23 novembre 2017, p 5508.

[4]Syndicat de la Magistrature, Observations sur le projet de loi d'habilitation a prendre par ordonnances les mesures pour le renforcement du dialogue social, 10 July 2017. www.syndicat-magistrature.org/Loi-d-habilitation-pour-la-reforme.html, retrieved on 13 November 2018.

[5]Union Syndicale des Magistrats, Observations de l'USM pour des réponses rénovées au licenciement abusif. Projet de loi d'habilitation a prendre par ordonnances les mesures pour le renforcement du dialogue social, 10 July 2017. www.union-syndicale-magistrats.org/web2/themes/fr/userfiles/fichier/publication/2017/licenciement10juil17.pdf, retrieved on 14 November 2018.

deemed wrongful. For each judgment, we measure a president bias using a leave-one-out difference between the average compensations for all other cases that a president has handled and the average compensations handled in the same social chamber within the same year. A leave-one-out mean is required in order to avoid reflection problems. Indeed, for a particular judgment, one needs to measure the pro-worker bias of the assigned judge as the pro-worker bias of the judge in all of her other cases, but not the concerned one. After verifying that the allocation of judges is unrelated to the observable workers and firms characteristics of the cases they judge, we interpret the differences between leave-one-out mean compensations set by subsequent judges in the same social chamber of the same Appeal Court in a given year as reflecting the influence of judges' subjectivity. We do find that some judges are more pro-worker than others, meaning that they consider more often that dismissals are wrongful and set higher compensation levels conditional on characteristics of cases. The difference between the compensation set by the most pro-worker and the most pro-employer judges is significant: Being assigned to the 10% most pro-worker judges as compared to the 10% least pro-worker judges increases the expected compensation by about one month of salary, which corresponds to an increase of 25%.

To explore the impact of differentiated treatment by judges on firms, we merge the data about Appeal Court decisions with administrative firm-level records covering all the universe of French firms. We find that the differentiated treatment of judges has a potential important impact on firm survival and employment for weak firms, whose return on assets is below the median. There is only few marginally significant effects for other firms. Moreover, the relation between judge bias and firm survival is not linear: variations in negative pro-worker bias, or in other words, pro-employer bias,[6] have no statistically significant impact on firms performance, because the amount of compensation set by pro-employer judges is small. Insofar as pro-worker judges set higher compensations, variations in their bias has significant effects on firms performance. This non-linear impact of judge bias implies that mean preserving contractions of judge bias may improve firm survival and employment.

Our counter-factual exercises show that reducing the dispersion of judges bias by setting all biases at the mean would increase the employment growth at 3-year horizon of low performing firms by 14% (*i.e.* 2.2 percentage points). The liquidation probability of low performing firms would decrease by 5% (*i.e.* 0.3 percentage point) at 3-year horizon. These findings suggest that the dispersion of judges bias has a significant impact on the survival and employment of low performing firms. An open question that our study cannot address, however, is the possibility that all judges are biased, meaning that setting all

[6]By construction the average bias is equal to zero.

biases to the mean does not ensure the absence of bias of all judges in the interpretation of labor laws (see: Ash et al. (2018)).

This paper is related to several strands of research. First, there is a large strand of research on the consequences of judges disparities. Posner (2005) and Gennaioli and Shleifer (2008) show how the judicial policy preferences and judges' aversion for reversal of their decisions by superior courts can influence judge biases from a theoretical perspective. The empirical literature provides evidence about differentiated treatment by judges in a wide spectrum of domains, covering criminal sentencing (Scott (2010), Dobbie et al. (2018), Yang (2015)), bankruptcies (Bernstein et al. (2018a), Bernstein et al. (2018b)), decisions related to disability benefits (Autor et al. (2015), Dahl et al. (2014), French and Song (2014), Kostol et al. (2017), Maestas et al. (2013)). Relying on the quasi-random or random allocation of judges to cases, these contributions generally find that differentiated treatment by judges is significant, but that it can be mitigated by sentencing guidelines (Scott (2010), Yang (2015), Cohen and Yang (2019)). To the best of our knowledge, only Bamieh (2016) uses this approach to document the behavior of judges in labor courts. Using random assignment of judges to cases in Italy, he shows that some judges are systematically slower, which leads to random variation in the trial length. We add to this literature by documenting for the first time the differentiated treatment by judges on the qualification of dismissals and on the amount of compensation when the dismissal is deemed wrongful.

Another strand of research deals with the impact of extraneous factors on the qualification of unfair dismissals by judges. Ichino et al. (2003), Marinescu (2011) and Jimeno et al. (2018) show that the local unemployment and bankruptcy rates influence the probability that judges deem dismissals unfair. Our findings are coherent with these contributions, which shows that the interpretation of labor law by judges is quite flexible. They are also in line with Jimeno et al. (2018) who show that despite the reforms of 2010 and 2012, which widened the definition of fair economic dismissals in Spain, the proportion of economic redundancies being ruled as fair by labor courts has not substantially increased. This discrepancy between the evolution of the legal rules and the "effective" (after resolution) rules is interpreted as the consequences of the opposition of judges to the change in the legal definition of fair dismissals, suggesting that judges have significant margin for interpreting legal rules.

Our contribution is also related to the very large literature which analyzes the labor market impact of dismissal costs (see Cahuc et al. (2014) for a survey). We add to the part of this literature which analyze the effects of court decisions regarding unfair dismissals on firms' outcomes (Autor (2003), Autor et al. (2006), Autor et al. (2007), Bamieh (2016), Boeri and Garibaldi (2018), Fraisse et al. (2015), Gianfreda and Vallanti

(2017), Martins (2009)). Those papers typically use the implementation of reforms of Employment Protection Legislation to assess the effects on dismissal costs on employment or productivity. Autor et al. (2007) use the adoption of wrongful discharge protections by U.S. State courts and find that higher employment protection leads to lower employment flows, firm entry rates and total factor productivity. In France, Fraisse et al. (2015) use an instrumental strategy and estimate that an increase in dismissal costs lead to a decline in employment fluctuations. In Italy, Bamieh (2016) shows that longer trials induced by judges specific differences randomly assigned to firms reduce the labor turnover and increase employment. Our paper differs from previous studies in several crucial aspects. First, we analyze the impact of the differentiated treatment by judges concerning the qualification of dismissals and the compensation for wrongful dismissal on firms performance. This is the first contribution exploiting such information at the firm level. Second, we identify the causal impact of dismissal costs exploiting the quasi-random allocation of judges to cases. Third, our contribution looks at the impact of dismissal costs on the survival of small firms, an issue which has been overlooked by the literature so far. From this perspective, it is related to the finance literature that assesses the effect of exogenous cash shocks, positive or negative, on firms (Blanchard et al. (1994), Giroud and Mueller (2017), Rauh (2006)).

The paper is organized as follows. Section 2 describes the French institutional setting and the data. Section 3 presents evidence about judges' bias. Section 4 documents the impact of judges' bias on firm survival and employment. Section 5 concludes.

2 Institutional background and data

2.1 Legal framework

Following the termination of an open-ended contract, employees with a tenure longer than one year and who did not commit any serious or gross misconduct (*faute grave* or *faute lourde*) are granted a minimum legal severance payment calculated as one fifth of monthly salary per year of tenure, plus an additional two fifteenths after ten-year tenure. These amounts can be topped up if the professional branch to which the firm belongs has signed a collective agreement setting higher payments.

Under French law, terminations of open-ended employment contracts are lawful if they are justified by a "real and serious cause", either economic or personal. Dismissals for economic reasons are lawful only to "safeguard" firms, but not to improve their profitability. Dismissals for personal reasons are lawful only in case of misconduct or lack of adaptation to the job. For both types of dismissal, the burden of the proof is on the side of employers. Furthermore, employers have to prove that there is no other position available in the firm (worldwide in the period we are studying) for dismissed employees when the dismissal is motivated by economic reasons or by lack of adaptation to the job.

When the employee deems her dismissal wrongful, she can file a complaint before the *Prud'hommes* councils, which are first hearing courts. While most European countries have specialized labor tribunals to deal with dismissal cases (OECD Employment Outlook (2013)), in France judges in *Prud'hommes* councils are employees and employers representatives, with an exact equality between the numbers of councilors representing employers and those representing employees. Serverin and Valentin (2009) calculate that for economic dismissals in 2006, the employee's rate of recourse to *Prud'hommes* in case of dismissal is between 1% and 2% while for disciplinary dismissals it is between 17% and 25%.[7] According to Desrieux and Espinosa (2016), among claims that reached the judicial stage at *Prud'hommes* council from 1998 to 2012, 62% resulted in the acceptation of the employee's claims. Similarly, Fraisse, Kramarz and Prost (2014) estimate that in the 1996-2003 period, "60% of cases end up with a trial, among which 75% lead to a worker's victory".

The decisions of the *Prud'hommes* council are appealed in most of the cases: the

[7]Economic dismissals are therefore very rarely challenged, one reason being that their conditions are usually negotiated between social partners at the firm level. Another reason is that these layoffs only account for 2% of all separations, since employers prefer to recourse to personal motive given the complexity of their procedure (when more than one person is laid off) and the absence of legal or conventional definition of a lawful separation for economic reason (until at least a 2016 law which clarified this notion).

appeal rates are, according to Guilloneau and Serverin (2015), between 60% and 67% in the 2004-2013 period. From 2006 to 2016, we find that only 53% of *Prud'hommes* councils decisions about compensations for wrongful dismissal were confirmed by Appeal courts. Appeal courts increased compensations in 36% of cases and decreased them in 12% of cases. Insofar as appeal rates are very high and the appeal suspends the application of the decisions of *Prud'hommes* councils which are frequently not fully confirmed, the compensation for wrongful dismissals decided at the Appeal court level is a better measure of the compensation to be paid by the firm than that decided by *Prud'hommes* councils. Therefore, in what follows, we use the compensation for wrongful dismissal decided by Appeal courts.

2.2 Overview of Appeal Court's activity

There are 36 Appeal courts and 210 *Prud'hommes* councils. Each French Appeal court has different chambers, among which at least one social chamber treats cases coming from the *Prud'hommes* council. Some Appeal courts have several social chambers, such as the Paris court which has fourteen of them. There is one president for each social chamber. This chamber president has administrative responsibilities within the court, and is in charge of presiding all the chamber's trails. She can nevertheless be replaced whenever needed, for instance during holidays. For each judgment, the chamber president is assisted by two councillor-judges.

The composition of the court cannot be changed by plaintiffs and judges cannot select their case, except for conflict of interest. The status of judges and their mobility is determined by the *Ordonnance Organique* of 22 December 1958. This regulation states that judges in Appeal Courts are "placed judges", *i.e.* assigned to a given Court or a given Chamber in a specific position according to decisions made every year by the First President of the Court of Cassation (the highest civil jurisdiction) and the First President of the Appeal Court. Promotions are based on merits and decided every year by a National Commission of Advancement. The First President of the Appeal Court herself is placed by a decree signed by the President of the Republic following the recommendation of the independent National Council of the Judiciary. Besides, mobility requirements are enforced through several regulations, such as promotions awarded only to judges in a given position for less than 5 years in a same jurisdiction (7 years from 2017), the prohibition to stay in the same specialized function in the same juridiction more that ten years altogether, or geographical mobility requirements to pass the first grade of the remuneration schedule (organic law 2001-539 of June 25th, 2001). The turnover that follows is substantial: every year 20% of positions are re-dispatched among judges (Conseil de la Magistrature, rapport d'activité 2016). Besides, every year, within a given court,

the distribution of sitting judges in the different chambers and services is decided by order of the First president of the Appeal Court. This order may be amended during the course of the year, to take into account changes in the composition of the court or to provide for a lighter service during annual leave periods. Importantly, the First President also sets objective criteria driving the distribution of the cases between the various chambers of the Appeal Court. The assembly of judges of the Appeal Court issues every year an opinion on these criteria and the distribution of judges across services and chambers (articles R312-42 and R312-42-1 of the Judiciary Organisation Code). This opinion is only advisory.

2.3 Data

2.3.1 Severance pay data

The empirical analysis draws on a newly created dataset on French Appeal Court's rulings from 2006 to 2016: for the first time, information on both the amount to be paid at Court and the firm identifier are available. The data include a wide array of variables related to the case (compensations for wrongful dismissals, worker seniority, wage, Appeal Court, city of the *Prud'hommes* council, whether it was the worker who appealed, etc.), as well as the firm's name and address. Using the firm's name and address we are able to retrieve the firm identifier (*SIREN*), and then link the severance pay dataset to matched employer-employee data as well as financial variables. The stages for the construction of this dataset are the following.

First, we gather Appeal Courts rulings from French judicial databases (source: Dalloz). An Appeal Court ruling contains a lot of information, but the available information may differ greatly from a ruling to the next. We give an example in Figure 2. Court rulings usually first describe the history of the contractual relationship between the employee and the employer, and displays the dismissal letter. This presentation of facts also includes the claims of the parties and the decision of the *Prud'hommes* council. Court rulings then describe the reasons for the Appeal Court decision, and end with the compensation for dismissal if the dismissal is deemed wrongful.[8]

[8]Besides compensation for wrongful dismissal (*indemnité pour licenciement sans cause réelle et sérieuse*), compensations that may be decided by Appeal Court judges, in case of dismissal contestation, include: compensation for non-respect of the dismissal procedure; minimal legal dismissal compensation (*indemnité légale de licenciement*) when not paid at the time of dismissal; compensation for moral damages (*indemnité pour préjudice moral*); compensation in lieu of notice period (*indemnité compensatrice de préavis*) when the notice period was not respected; compensation in the name of the article 700 of the French

Second, we extract the relevant variables of interest from the Appeal Courts rulings using Python programming. We check the accuracy of the created database with a manually-filled dataset for a subsample of the observations, selected at random, and we estimate the accuracy of the severance pay amount extracted automatically by the programme to be around 90-95%. However, for some Court rulings the information could not be fully extracted,[9] thus creating missing observations.

Third, thanks to the firm's name and address, we retrieve the firm identifiers (*SIREN*) thanks to websites such as *societe.com* and *bodacc.fr*. This *SIREN* is crucial in order to merge the severance pay data to French administrative social security and tax data.

2.3.2 Judicial redress and liquidation data

We use public data from the *Bulletin Officiel des Annonces Civiles et Commerciales* in order to retrieve all the judicial redress and liquidation events from 2008 to 2016. These measures are the most reliable ones to assess the financial difficulty of firms, because they avoid problems inherent to administrative data. Indeed, computing firms' survival rates with French matched employer-employee dataset creates measurement error insofar as firm identifiers can disappear from the data because firms changed administrative numbers (which happens whenever the firms' headquarters relocate). The drawback of BODACC data is that it only starts in 2008, which reduces the number of observations in our subsequent analysis.

2.3.3 Social security and tax data

Matched employer-employee data. We merge the severance pay data with social security data thanks to the firm identifier. We use the matched employer-employee dataset called DADS Postes *Déclarations Administratives de Données Sociales* from 2002 to 2015, which reports information about all workers in French private firms.

Tax data. We also recourse to tax data, FICUS-FARE, that contain the full company

Code of Civil Procedure, which covers the legal costs of the wining party; compensation for paid leave (*indemnité compensatrice de congés payés*) ; allowance for overtime hours (*heures supplémentaires*). An employee may receive concurrently those different compensations. We exploit the amounts of compensation for wrongful dismissal because other compensations are related to other issues than wrongful contract break.

[9] Due to the large heterogeneity of Court rulings formats.

accounts, including for instance sales, net income, ebitda. From these files we are able to construct a wide number of the firm's financial health such as the firm' leverage ratio, current ratio, return on assets. This data is available from 2002 to 2015.

Sample restriction. We restrict the sample to firms in the for-profit private sector. We also drop the agricultural sector. We select firms going to Court from 2009 to 2012. We indeed select firms going to Court no later than 2012 in order to analyze outcome variables up to three years after the judgment,[10] and firms going to Court after 2008 because of BODACC data availability. We drop firms going to Courts several times during the period in order to drop collective dismissals. Table 1 displays the several steps leading to the number of observations in our final estimation sample.

3 Judges specific differences

This section is devoted to the analysis of judges specific differences. We start by reporting descriptive statistics about judgments before presenting the empirical strategy used to identify the potential judges bias and showing the results.

3.1 Descriptive statistics

Table 2 presents descriptive statistics of judgments at the case-level. The average amount of compensation for wrongful dimissal granted by Appeal Courts is equivalent of 4.6 months of salary over the period 2006-2016. In 66% of cases the worker wins, *ie* obtains a positive compensation for wrongful dismissal. The worker appeals in 59% of cases.

Figure 3 displays the histogram of the compensation for wrongful dismissal in monthly wages, conditional on being positive. The distribution is highly positively skewed. There is a mass around six months of salary: this stems from French legislation that institutes a minimal threshold of six months of salary for workers with more than 24 months of seniority employed in firms with more than 11 workers, when the dismissal is deemed wrongful.

Table 2 also provides information about differences between decisions of Appeal Courts and *Prud'hommes*. The amount given at Appeal Court is the same as the amount decided at *Prud'hommes* in 53% of cases, while it is higher in 36% of cases. The average compensations set by Appeal courts is much higher (14.743€) than that of *Prud'hommes*

[10] DADS Postes data are available until 2015.

(8333 €).[11] All in all, Appeal Courts are more favorable to workers than *Prud'hommes*. Figure 4 shows the scatter plot of the amount of compensation in monthly wages depending on seniority set by Appeal Courts (right panel) and by *Prud'hommes* (left panel). It is clear that there is an important dispersion of the amount of compensation conditional on seniority in both tribunals. Table 2 shows that the variance of the compensations of Appeal Courts is larger than that of *Prud'hommes*. Obviously, the variance of compensations conditional on seniority originates from the diversity of situations specific to each case. Nevertheless, the difference between the judgments of *Prud'hommes* and Appeal Courts, which is significant at all amounts of compensation, as illustrated by Figure 5, suggests that the subjective interpretation of judges might exert an important influence. Only a small share of the variance of compensations is explained by observable case characteristics: for instance, only 13.6% of the variance is explained by the salary and seniority. Adding many other covariates[12] makes this share jump to 32.9%. In other words, 67% of the variance of dismissal compensation is still left unexplained when controlling for a wide range of covariates.

Our data comprise 1040 presidents of social chambers of Appeal Courts[13] over the period 2006-2016. Each of them judges on average 134 cases. 250 of them judge more than 50 cases. The presidents who judge very few cases are usually judges (generally president of other chambers) who occasionally replace the president of the social chamber in charge of the judgment, for instance when the president is absent for personal reasons. The 250 presidents who judged more than 20 cases cover 97.8% of cases. Each of these presidents judged 546 cases on average with a median equal to 339. These presidents are quite mobile across courts: they stay 2.4 years in the same court on average.

The most natural measure of a judge's pro-worker bias is the frequency a judge qualifies the dismissal as unfair.[14] Figure 6 displays the histogram of this measure. A related measure is the average compensation granted by the judge, the histogram of which is exhibited in Figure 7. A caveat of such measures though is that judges may be given cases with different characteristics because they belong to different social chambers. The characteristics of cases may be different across social chambers because social chambers are

[11] Note that we consider here only *Prud'hommes* judgments which are appealed and reach the Appeal Court, as the information about *Prud'hommes* judgments is not available

[12] *i.e.* controlling for the amount granted at Prud'hommes, the amount claimed by the worker, the firm's number of workers, whether it was the worker who appealed, whether it is an economic dismissal and the time length between the dismissal and the appeal judgment

[13] Let us remind that the Court is composed of a president and two councillor-judges. The president, who is in charge of supervising the writing of the judgments, plays the key role in the judgment.

[14] Our measures of Appeal Courts judges bias do not rely on the difference between the outcome of the Appeal Court and the outcome of *Prud'hommes* insofar as *Prud'hommes*' decisions are influenced by the potential bias of *Prud'hommes* counselors.

located in different places, they also may be specialized within Appeal Courts according to the nature of the dismissal (economic versus personal, individual versus collective) or according to the type of the potential prejudice (harassment, discrimination, for instance). Thus, the characteristics of cases may be different across social chambers. Such specializations preclude us from computing an unbiased judge's pro-worker bias -*i.e.* a measure reflecting only the bias and not the composition of cases brought to the judge. In order to obtain an unbiased judge's bias measure, the allocation of cases to judges must be random. We devise in the following section an empirical strategy to correctly impute pure measures of judges' pro-worker bias.

3.2 Empirical strategy

To identify the effects of judges[15] specific differences on compensations for wrongful dismissals, we use the assignment of judges to cases described in section 2.2. The random allocation we use is the allocation of cases across different judges within Court, social chamber and year. In a given year, the president of a social chamber may move to another job, either to another Appeal Court or to another position within the same Court, and is then replaced by a new president. The initial judge and the new judge may have different interpretations of labor laws influencing the amount of compensation in case of dismissal. Figure 8 offers an example of such a situation : in year 2014 and social chamber 1 of the Paris Appeal Court, a case may be either allocated to president A in the first part of the year, or to president B in the second part of the year. Although unlikely, a non-random assignment of cases to judges is possible. For instance, it is possible that judge A is specialized in sexual harassment cases and that all those cases allocated this year are mechanically saved for this judge. However, such allocation of cases is highly implausible because each social chamber has a high stock of cases which implies that the average waiting time before judgments is equal to 667 days, and only 10% of cases are judged in less than 300 days. In this context, insofar as the cases are allocated to the social chambers at the start of the appeal procedure, it is very unlikely that cases can be specifically allocated to presidents whose seniority in the chamber is less than one year. Thus, since we rely on differences between decisions of presidents belonging to the same social chamber within the same year to identify judges specific differences, it is unlikely that this identification strategy is fraught by non-random allocation of cases to judges.

More precisely, for each social chamber $\times$ year pair (k, t) in which we observe judge j,

[15] As explained above, we focus on judges who are president of social chambers only. Therefore, in what follows, a "judge" is a president of social chamber.

we compute the difference between the average of judge j outcomes[16] in this chamber this year and the average of all outcomes in this chamber this year:

$$\bar{\varepsilon}_{jkt} = \left(\frac{1}{n_{jkt}} \sum_{i \in (j,k,t)} y_{ijkt}\right) - \left(\frac{1}{n_{kt}} \sum_{i \in (k,t)} y_{ijkt}\right) \tag{1}$$

where $i \in (j,k,t)$ means that case i is judged by judge j in chamber k and year t and $i \in (k,t)$ means that case i is judged in chamber k and year t ; y_{ijkt} is the outcome of case i set by judge j in chamber k in year t ; n_{jkt} the number of judgments of judge j in chamber k during year t and n_{kt} is the number of judgments in chamber k during year t.

Judges move across social chambers during the period. Our measure of the bias of judge j is thus the weighted average of $\bar{\varepsilon}_{jkt}$, where the weight of social chamber k in year t is the share of judgments of judge j in this chamber this year in all judgments of judge j:

$$\bar{\varepsilon}_j = \sum_{(k,t) \in (K,T)(j)} \frac{n_{jkt}}{n_j} \bar{\varepsilon}_{jkt} \tag{2}$$

where $(K,T)(j)$ is the set of all chamber $\times$ year pairs (k,t) observed for judge j ; $\bar{\varepsilon}_j$ is the bias of judge j.

When we analyze the correlation between judge j bias and the outcome of case i, one needs to compute the pro-worker bias of the assigned judge as the pro-worker bias of the judge in all of her other cases, but not the concerned one, in order to avoid reflection problems. Thus, the bias of judge j is measured by the leave-one-out mean of case i, meaning that it is judge specific and case specific. To put it differently, the bias of judge j for case i is[17]

$$\bar{\varepsilon}_{ij} = \sum_{(k,t) \in (K,T)(j)} \sum_{i', i' \neq i} \frac{n_{jkt}}{n_j - 1} \bar{\varepsilon}_{i'jkt} \tag{3}$$

where

$$\bar{\varepsilon}_{ijkt} = \left(\frac{1}{n_{jkt} - 1} \sum_{i' \in (j,k,t), i' \neq i} y_{i'jkt}\right) - \left(\frac{1}{n_{kt} - 1} \sum_{i' \in (k,t), i' \neq i} y_{i'jkt}\right) \tag{4}$$

Obviously, by definition: $\sum_{i \in j} \bar{\varepsilon}_{ij} = \bar{\varepsilon}_j$.

To explore the randomness of the allocation of cases to judges, we conduct randomization tests in which we regress our measure of judges specific differences on worker's and firm's characteristics of corresponding cases. The absence of correlation between observable characteristics of cases and judges specific differences indicates that there is no selection on observable variables. Though we obviously cannot test the correlation

[16] The outcome is either the amount of compensation or the indicator variable equal to one if the dismissal is deemed wrongful.

[17] Note that our definition of the bias can be obtained by regressing the outcome for all cases on chamber $\times$ year fixed effects as in the contributions of Dahl et al (2014) and Dobbie et al (2018). See appendix B.

between the judge's specific differences and unobserved variables, such randomization tests are reassuring for our identification strategy.

3.3 Results

Judges subjectivity can influence both the qualification of the dismissal - either wrongful or lawful - and the compensation amount granted by the judge to the worker. In what follows, we examine these two aspects of judges' decisions and we look how they are related.

3.3.1 Qualification of dismissals

We first construct a judge specific pro-worker bias with respect to the dismissal qualification. Figure 10 presents the histogram of the judges' pro-worker bias among the population of cases defined by equation (3). It sheds light on the large variability of biases. Table **??** shows nevertheless that this variability only explains a small share of the variance of the qualification of the dismissal: column (4) exhibits that the adjusted R^2 only increases from 6.7% to 7% when controlling for pro-worker bias. One can note that the qualification of the dismissal is barely predicted by fixed effects, case controls and judges bias, indicating that a large share of the variation of the qualification is left unexplained.

Our evaluation of the judge bias is relevant only if the qualification of dismissal in each specific case is significantly correlated with the judge's pro-worker - or pro-employer - bias. From this perspective, it is worth stressing that our measure of the judge bias does not yield direct information on the effects of the bias on the qualification of dismissal. This measure only allows us to rank judges according to their bias. To see this, suppose a simple situation with one period only and four judges, A, B, C, D, ranked from the least to the most (unknown) pro-worker bias. Suppose that A and D belong to the same social chamber and that C and B belong to another social chamber during all the period. Our measure of the bias relies on the difference in the share of dismissals deemed wrongful by different judges belonging to the same social chamber with respect to the average share of dismissals deemed wrongful in the social chamber. It allows us to conclude that D is more pro-worker than A and that C is more pro-worker than B. But it yields information neither about the comparison of B and A nor about the comparison of D and C because the average share of dismissals deemed wrongful in the social chamber is different, and depends, among other factors, on the true bias of judges allocated to the social chamber. Depending on the selection of judges in social chambers according to their bias, we may conclude that the ranking is (by increasing order of pro-worker bias) B, A, C, D, or B, C, A, D or A, D, B, C instead of the true ranking A, B, C, D. In our

approach, this problem is mitigated insofar as judges are mobile across social chambers. In the previous example, A might, during the period of interest, share the same social chamber as both D and B, which may enable us to rank A,B and A,D. Such judges mobility thus may help us to exclude the erroneous rankings B,A,C,D and B,C,A,D. The higher the degree of judges mobility, the higher the probability to achieve a perfect ranking. We document the extent of judges mobility in Figure 9, where each dot represents a judge, and where a line connects two dots if the two judges shared the same social chamber at least once. As is apparent, the judges network seems relatively dense, thus indicating a high mobility of judges across social chambers.[18]

To check whether our measure of judge bias is indeed related to the actual qualification of dismissals, Figure 10 displays the local polynomial fit of the probability that dismissals are deemed wrongful explained by the judge pro-worker bias. The judge pro-worker bias is indeed positively related to the probability that dismissals are deemed wrongful. The bias is significantly correlated to the qualification of dismissals. Being assigned to the 10% most pro-worker judge as compared to the median-biased judge increases the probability that the dismissal is deemed wrongful from 67% to 72%.[19]

Table 4 documents further the relation between the judge pro-worker bias and the qualification of dismissals. This table displays the OLS estimator of the regression of the indicator variable equal to one if the dismissal is deemed wrongful on the judge's pro-worker bias. All standard errors are clustered at the judge level. Column (1) includes Appeal Court and year fixed effects. Column (2) adds control variables comprising the worker's salary, seniority and whether the dismissal is economic or for personal reasons. If judges are randomly assigned, the addition of these control variables should not significantly change the estimates, as cases characteristics should be uncorrelated with judge bias. The coefficients are significant at 1% level of confidence and are not significantly different (p-value = 0.63) across specifications. More precisely, going from the 10% most pro-worker judges towards the median bias judge decreases the probability of the dismissal to be judged wrongful by 3.0 percentage points.

The results reported in Table 4 are consistent with those obtained from the polynomial fit without any control, displayed on Figure 10. Indeed, according to Table 4, being assigned to the 10% most pro-worker judges as compared to the 10% least pro-worker judges increases the probability that the dismissal is deemed wrongful by 7.5 percentage points[20] which is very close to the prediction of the polynomial fit.

[18]If judges were not mobile whatsoever, one would observe perfectly distinct judges clusters, each cluster representing one social chamber.

[19]The median of the judge bias is equal to 0.004 and the 9th decile to 0.06.

[20]The computation is performed as follows: we multiply the point estimate given in column (3) of Table 4 by the difference of pro-worker bias when going from the 1st to the 9th decile of the pro-worker

To check that the measure of judge bias is not the consequence of a non-random allocation of judges to cases, we look whether judges fixed effects are correlated to the observable characteristics of cases. Tables 5 and 6 display such tests. The main finding is that no variable is correlated to the judges bias. Table 5, first column displays the regression of the qualification of the dismissal on several characteristics of the case, with Appeal Court and year fixed effects and standard errors clustered at the judge level. The amount granted by *Prud'hommes* and the fact that the dismissal is economic have a positive and significant impact on the probability for the dismissal to be deemed wrongful, while the seniority and the fact that the worker appealed have a negative effect. The second column of Table 5 thus offers a stark contrast to its first column: when regressing the judge's fixed effect on the same characteristics, one finds no significant relationship whatsoever. Furthermore, the p-value of the F-test of joint significance is 0.6616. We replicate the exact same methodology for the characteristics of the firm. The second column of Table 6 displays the regression of the judge's severity on the firm's characteristics the year before the judgment, ie in *t-1*, as well as the growth rate of these characteristics between *t-2* and *t-1*. The p-value of the test for joint significance is high - 0.356. Because of the large number of tests performed, we find one significant relationship, namely between the number of workers in *t-1*: the number of workers is positively related to the judge's worker bias.

3.3.2 Compensation for wrongful dismissals

The compensation granted by the judge provides another natural measure along which to analyze judges' heterogeneity. In the following, we perform the same exercise as before by computing the pro-worker bias thanks to the amount granted by the judge in monthly wages. Figure 11 presents the histogram of the judges' pro-worker bias among the population of cases. The pro-worker bias displays a large heterogeneity. However, Table **??** displays that such variability only explains a small share of the variance of compensations for wrongful dismissals: column (8) exhibits that the adjusted R^2 only increases from 32.5% to 32.6% when controlling for pro-worker bias.

The judges pro-worker bias computed with the amount of compensation is highly correlated to the compensation granted by the judges. This correlation is illustrated by Figure 11 which displays the polynomial fit of the compensation explained by judges pro-worker bias. Being assigned to the 10% most pro-worker judges as compared to the median biased judge increases this amount of compensation from 5.6 to 6.1 months of salary.[21]

bias.

[21] The median of the judge bias is equal to 0.028 and the 9^{th} decile to 0.65.

Table 7 provides further evidence about the relation between the judges pro-worker bias computed with the amount of compensation and the compensation granted by the judges. Table 7 displays the OLS estimators of the regression of the compensation for wrongful dismissal in monthly wages on the judge's pro-worker bias. Column (1) reports the result with Appeal Court and sector × year fixed effects. Column (2) adds control variables comprising the worker's salary, seniority and whether the dismissal is economic or for personal reasons. The coefficient reported in the two columns are not significantly different (p-value = 0.36). Controlling for case characteristics, an increase in the judge's pro-worker bias by one point increases the amount of compensation in months of salary by 0.5 points. This implies that being assigned to the 10% most pro-worker biased judge as compared to the 10% least pro-worker biased increases the compensation amount by 0.9 months of salary. This prediction is slightly lower than that obtained from the polynomial fit, displayed on Figure 11 because this Figure shows that the relation between the judge bias and the amount of compensation is not linear. Being assigned to the 10% most pro-worker judge rather than the median biased worker increases the amount by 0.4 months of salary.

As before, we check that the judges biases are not correlated to the observable characteristics of cases or firms. Tables 8 and 9 display respectively the correlation between pro-worker biases and the characteristics of the case, and the correlations between pro-worker biases and the characteristics of the firm. The amount claimed by the worker, the amount received at *Prud'hommes*, the seniority of the worker, the fact that the dismissal is economic and that it was the worker who appealed all are positively correlated to the severance pay granted at Appeal Court. The second column of Table 8 therefore offers a sharp contrast to its first column: when regressing the pro-worker bias on the same characteristics, one finds no significant relationship whatsoever. Furthermore, the p-value of the F-test of joint significance is 0.5057. The second column of Table 9 displays the regression of the judge's severity on the firm's characteristics the year before the judgment, ie in *t-1*, as well as the growth rate of these characteristics between *t-2* and *t-1*. No significant relationship is found, and the p-value of the test for joint significance is very high - 0.849.

It should be noted that judges who often qualify the dismissal as wrongful are also those who, conditional on granting a positive compensation, give the highest compensations. In other words, our two indices of pro-worker bias are highly and positively correlated. We display this correlation in Figure 12, which presents the scatter plot of the pro-worker bias with respect to the compensation granted, conditional on being positive,[22] and the

[22]Note that Figure 11 reports judges biases for the average compensation unconditional on being positive.

pro-worker bias with respect to the dismissal qualification.

4 The effects of judge specific differences on firm performance and firm survival

This section is devoted to the analysis of the impact of judge pro-worker bias on firm performance. We start by providing some descriptive statistics on firms before proceeding to the presentation of the empirical strategy and the results. Eventually, we exploit the results to explore the consequences of capping the judge bias at several percentiles of the distribution of bias to quantify the effects of bias dispersion on firms.

4.1 Descriptive statistics

Our sample comprises only firms that are judged in Appeal Courts. In order to avoid situations where firms and workers could anticipate the identity of the president of the social chamber of the Appeal Court that will judge their case at the date of the start of the Appeal procedure, we remove the cases where the president of the Appeal Court at *prud'hommes* judgment date is the same as the Appeal judgment date.

The analysis is focused on firms with less than 100 employees the year before the Appeal judgment. We consider for-profit firms in the private sector, excluding the agricultural sector. Table 10 provides descriptive statistics at the firm-level level, *i.e.* the level of analysis for our sample. Because we restrict the analysis to firms under 100 employees, the average number of workers is about 22 employees. The firms are relatively young as 30% are less than 10 years old. 64% of firms end up paying a positive compensation for wrongful dismissal. For firms paying a positive compensation amount, it corresponds on average to 6% of firms' total payroll, the median being equal to 1.5% and the 9^{th} decile to 13%. Their probability to have a liquidation within one year after the judgment is 1.6%, and within three years 4.7%.

4.2 Empirical strategy

We aim at studying the causal impact of judge pro-worker bias on firm survival, employment growth, new hires, job separations and hours of work. To that end, we regress the outcome of interest of each firm on the pro-worker bias of the judge in charge of its case. The benchmark equation of interest is the following:

$$Y_{ij(i)t} = \alpha_0 + \alpha_1 bias_{ij(i)} + \alpha_2 X_{it} + \eta_{ij(i)t} \tag{5}$$

where $Y_{ij(i)t}$ is the outcome of interest for firm i assigned to judge j $t \geq 0$ years after the judgment; $bias_{ij(i)}$ is the pro-worker judge j bias measured by the leave-one-out mean of the residuals for all the other cases judged by the corresponding judge j (i.e. $\bar{\varepsilon}_{ij}$ defined in section 3.2). X_{it} includes Appeal court fixed effects, year fixed effects, the leave-one-out average industry annual growth rate of sales and an indicator variable for economic dismissals. Insofar as the construction of judge bias relies on the random assignment of cases to judges, the result of which is not anticipated by firms and workers when they start the Appeal procedure, the error term $\eta_{ij(i)t}$ has no reason to be correlated with the pro-worker judge bias, meaning that α_1 can be estimated with OLS.

Equation (5) allows us to analyze the average impact of the bias of judges on all firms. However, it is probable that firms which do not perform well are more impacted by the high compensations set by pro-worker judges. To deal with this issue, we examine how the impact of judge bias depends on the return on assets or the leverage of firms. More precisely, we estimate the following equation:

$$Y_{ij(i)t} = \beta_0 + \beta_1 bias_{ij(i)} \times low_i + \beta_2 bias_{ij(i)} \times high_i + \beta_3 X_{it} + \nu_{ij(i)t} \tag{6}$$

where low_i is an indicator variable equal to 1 if the financial variable (i.e. the return on assets or the leverage) of firm i the year before the judgment is below the median; $high_i$ is an indicator variable equal to 1 if the financial variable of firm i the year before the judgment is above the median. X_{it} includes the same variables as before plus the indicator variables low_i and $high_i$.

Our dependent variables include indicator variables equal to one for firms which are liquidated within $t = 1, 2, 3$ years after the judgment and Haltiwanger growth rates for a set of variables, namely employment, hours, sales, number of entrants and number of exiters.[23]

All standard errors are clustered at the judge level, following Abadie et al. (2017) who state that the standard errors clustering must be decided according to the level at which either the sampling or the randomization is performed. In our case, the randomization occurs primarily at the judge-level.

[23]For instance, the growth rate between t-1 and t+1 is computed as follows:

$$\Delta Y_{ij(i)t} = 2\frac{Y_{ij(i)t+1} - Y_{ij(i)t-1}}{Y_{ij(i)t-1} + Y_{ij(i)t+1}} \tag{7}$$

It ensures that growth rates range from -2 to 2, thus preventing outliers to complicate the analysis. It also allows us to account for observations corresponding to firms with zero employment at some points in time, which cannot be done with log employment.

4.3 Results

Tables 11, 12 and 13 present the results of the estimation of equations (5) and (6) for the firm's outcomes respectively 1 year, 2 years and 3 years after the Appeal Court judgment.

Table 11 shows that the first outcome to react to judge's pro-worker biases is the growth of the number of entrants, which drops. The effect is significant for the overall sample but is driven by firms with low return on assets. This decrease in the growth of the number of entrants is driven by permanent contracts - rather than fixed-term contracts.

Table 12, which shows the results within two years after the judgment, exhibits an almost similar picture. However, at this time horizon the pro-worker bias also has a negative and significant effect on the growth of employment. This effect is, as for the number of entrants, driven by firms with low return on assets, and by permanent contracts.

Table 13 shows that the effects are much stringent at three-year horizon, which may come from the fact that liquidation procedures are very long in France; they last two and a half years on average. When the whole sample of firms is considered, there is a significant impact of the judge pro-worker bias on the liquidation probability, on employment and in particular on the number of permanent workers. The overall effect stems from firms with low return on assets insofar as the outcome variables of firms whose return on assets is above the median are only marginally affected by the judge bias. Negative employment effects are driven by a drop in hires without significant impact on job separations. The absence of significant impact on job separations may come for counteracting effects of compensations for wrongful dismissals. On one hand, employers condemned to pay high compensations may revise their anticipations and expect higher separation costs in the future, implying a negative effect on dismissals. On the other hand, high compensations degrade the financial capacities of firms, and then their ability to sustain employment.

Overall, it is clear from Tables 11, 12 and 13, that high-performance firms, with return on assets above the median the year before the judgment, are only very marginally impacted by the pro-worker bias they face. This is suggestive evidence that judges biases are mainly detrimental to the survival and the employment of the most fragile firms.

Interestingly, the employment effects within a 3-year horizon are not solely driven by firms' deaths. In Table 14 we analyze the effect of pro-worker bias on surviving firms. Though the selection of this sub-sample is endogenous, it is yet informative about the channels at play. Pro-worker bias also impacts the growth in the number of entrants for surviving firms.

It is possible that the relation between judge bias and firm performance is non-linear, because pro-employer judges (*i.e.* those with negative bias) consider more frequently that dismissals are lawful and set lower compensation for dismissals deemed wrongful. Since changes in small compensations may have different impact of firms than changes in large

compensations, variations in negative bias may be less harmful for firms than variations in positive bias. To explore this possibility, we estimate the following equation

$$Y_{ij(i)t} = \gamma_0 + \gamma_1 \min(bias_{ij(i)}, 0) + \gamma_2 \max(bias_{ij(i)}, 0) + \gamma_3 X_{it} + \eta_{ij(i)t} \tag{8}$$

where variables are defined as in equation (5).

We investigate the non-linearity of the effects of judges bias in Table 15. The top panel of Table 15 reports the result for the estimation of equation (8). The judge pro-worker bias has a significant positive effect on the liquidation probability (at 10% confidence level), the employment growth and the number of hires growth only when the judge is more severe than the average judge - *i.e.* when the bias is positive. The bottom panel of Table 15, shows that this effect is driven by low-performing firms, for whom the impact of positive judge bias is strong and significant at 5% confidence level. Judges bias, whether negative or positive, has no significant impact on high performing firms. Only low performing firms are impacted by judges bias, provided that the bias is positive. To the extent that their liquidation probability at 3-year horizon is equal to 6.8%, being assigned to the 10% most pro-worker judge, whose bias equals 0.6, instead of the median judge, whose bias is close to zero, increases their probability of liquidation by 43% -*i.e.* the probability of liquidation is increased by 2.5 percentage points. The employment effects are also significant: being assigned to the 10% most pro-worker judge instead of the median judge, decreases employment growth by 47% -*i.e.* the employment growth rate is decreased by 7.6 percentage points.

One could arguably wonder whether the pro-worker biases could have cleansing effects by destroying the structurally weakest firms which would survive otherwise as well as more profitable firms. To see whether this interpretation is plausible, we compare the liquidation probability of firms with return on assets above and below the median, before the year of the judgment, which have not been condemned to pay compensations for wrongful dismissal by Appeal Courts. We find that their probability of liquidation 3 years after the judgment is almost identical (4.8% for firms with low return on asset versus 4.6% for firms with high return on assets, the p-value for the t-test on the equality of means is equal to 0.94), meaning that the survival of low performing and high performing firms before the year of the judgment is similar three years after the judgment when they do not have to pay compensations for wrongful dismissal. This finding is consistent with a situation where pro-worker judges destroy firms with low profitability whose probability of survival is similar to that of firms with high profitability. From this perspective, they have a cleansing effect, which contributes to destroy low profitable firms that would have survived otherwise. Therefore, it cannot be excluded that judges bias improves overall efficiency, since the jobs destroyed by pro-workers judges in low performing firms might

be reallocated at low cost in high performing firms. Addressing this question is left for future research.

4.4 Robustness checks

We conduct a range of checks both to test the robustness of the previous results and to investigate the mechanisms at play.

First, we conduct placebo tests for the significance of the effect of the pro-worker bias on firm performance before the judgment. By definition, we cannot proceed to placebo tests on firm survival since all firms which are judged by Appeal Courts necessarily survive until the date of the judgment. In this context, placebo tests are similar to regressions run on surviving firms, presented in Table 14, which reports negative significant correlations between the judge pro-worker bias and the growth rates of employment and hires after the judgment year for firms whose return on assets is below the median. Table 16 documents the absence of significant correlation between the judge bias and the growth rates of these variables before the judgment year for firms whose returns on assets is below the median. We display to this mean the effect of the pro-worker bias on Haltiwanger growth rates of employment, entrants and exiters between $t-4$ and $t-1$, between $t-3$ and $t-1$ and between $t-2$ and $t-1$. This means that the effects of the judge pro-worker bias on firm performance after the judgment year which are identified by our empirical strategy are not driven by selection of firms due to the anticipation of judge pro-worker bias.

Second, the effects of pro-worker bias we find are significant only for low-performance firms - defined as firms with a below-median return on assets. One may wonder whether this result hold for different measures of the financial situation of firms. In order to investigate this issue, Table 17 contrasts the effect of pro-worker biases between lowly and highly levered firms.[24] Pro-worker bias has a significant effect for highly-levered firms. This is suggestive evidence that pro-worker bias is indeed detrimental to the most financially fragile firms.

4.5 Discussion

So far, we have uncovered the detrimental effects that judges biases can have on firms survival and employment. A natural question that arises is what would the outcomes be if the dispersion of pro-worker biases was reduced. To answer this question, we perform counter-factual exercises in which we cap judges biases at several percentiles of the distribution of biases. Another approach is to see what would happen in the absence of any dispersion of judge bias, i.e if we set all the biases to the mean bias. While capping

[24]We define leverage as the ratio of total debt over total assets net of depreciation.

biases amounts to reducing both the level and the variability of biases, setting biases to the mean enables to decrease only the variability of biases. Setting the biases to zero thus produces the effect of eliminating any judge-related dispersion in severance pay. One must note that in our framework, judges biases are calculated relatively to the other judges. Setting all of these biases to the mean bias would thus ensure that all judges would have the same bias but one cannot say whether all judges would then be neutral, pro-worker or pro-employer biases.

Table 18 exhibits the results of our counter-factual exercises. Capping pro-worker biases at the median would decrease the judicial liquidation probability within 3 years after the judgment from 5.10% - the average in the sample - to 4.66%, which corresponds to about a 9% decrease in the probability of liquidation. This effect is entirely driven by low performing firms, whose return on assets is below the median. Table 19 shows that capping the bias at the median reduces their probability of liquidation by 13% (i.e. one percentage point).

The pattern is similar when looking at employment and at the number of entrants: employment growth would be increased by 12% (i.e. 1 percentage points) for all firms and by 17% (i.e. 3 percentage points) for low performing firms; the growth in the number of entrants would be increased by 12% (i.e. 3 percentage point) for all firms and by 22% (ie 5 percentage points) for low performing firms.

There is smaller improvement in firm performance if all biases are set to the mean instead of capped at the median, because some pro-employer judges become more pro-worker when their bias is brought to the mean. Table 19 shows that the liquidation probability of low performing firms would decrease by 5% (i.e 0.3 percentage point) at 3-year horizon. The effects on employment are more substantial as the employment growth would increase by 14% for low performing firms.

These findings suggest that capping or reducing the dispersion of pro-worker judges biases may improve employment growth and the survival of small, low performing, firms. An open question that our study cannot address, however, is the possibility that all judges are biased, meaning that setting all biases to the mean does not ensure the absence of bias in the interpretation of labor laws (see: Ash et al. (2018)).

5 Conclusion

Using new data on Appeal court rulings about dismissals merged with firm data, this paper quantifies the impact of judges bias on dismissal compensation and on firm performance. It shows that pro-worker judges are detrimental to the survival and the employment growth of small, low performing firms. No effects of judges bias are detected for other

firms. All in all, it is clear that judges bias has a significant impact on the survival and employment of low performing firms.

It is worth stressing that our paper does no fully address the question of the impact of judges bias on overall employment. It may be that the mediatization of several extreme cases, with very high compensations, has a strong impact on the beliefs of employers and then on hiring behavior and firm entry. It is also possible that cases judged by Appeal courts are not representative of all cases. From this perspective, our paper must be completed by future research to better understand the effects of judges bias on employment, firm creation and destruction.

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Table 1 – Going from the initial to the final number of observations

	# of observations	# of distinct firms
Initial severance pay data	149,542	55,288
Obs with non-missing severance pay amount	73,910	32,009
Obs with non-missing firm identifier	48,952	32,009
Merge with admin data and restriction to private sector	14,952	12,345
Final sample restrictions	1,742	1,742

Final sample restrictions include: Firms with only one event in [2006,2016], with their event in [2010,2012], with less than 100 employees the year before the judgment, with non-missing judge's bias and with a different judge at Appeal Court than the one in place during the Prud'hommes case.

Table 2 – Summary main variables of case-level data

	mean	min	max	sd	count
Amount in euro	14743.3	0	1000000	27411.1	95186
Amount in months of salary	4.55	0	246.1	6.14	73910
Positive amount	0.66	0	1	0.47	95186
Prud'hommes amount	8332.6	0	964552	22475.7	106149
Amount demanded by worker	42424.1	0	999861.8	60341.6	72355
Higher amount than prud'hommes	0.36	0	1	0.48	80731
Lower amount than prud'hommes	0.11	0	1	0.32	80731
Same amount than prud'hommes	0.53	0	1	0.50	80731
Worker who appealed	0.59	0	1	0.49	134625
Economic dismissal	0.22	0	1	0.41	149542
Worker's seniority	7.11	0	48	8.06	105107
Nb cases per president | nb $>$ 10	397.1	10	4022	537.9	357

Table 3 – Share of the variation of compensations explained by pro-worker biases

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Qualification of dismissal				Compensation in months of salary			
Pro-worker bias	No	Yes	No	Yes	No	Yes	No	Yes
Case controls	No	No	Yes	Yes	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Court FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.021	0.026	0.073	0.076	0.032	0.035	0.329	0.331
Adj. R^2	0.016	0.021	0.067	0.070	0.027	0.030	0.325	0.326
# obs	7021	7021	7021	7021	7021	7021	7021	7021

Court and year fixed effects are included in all regressions. Columns (1) to (4) present the R^2 and adjusted R^2 of the regression of the qualification of the dismissal - ie dummy indicating whether the dismissal was deemed wrongful - on some case controls and judges bias, while columns (5) to (8) display similar results for the regression of the compensation in monthly salaries. Columns (1) and (5) display the R^2 when only adding fixed effects, columns (2) and (6) when controlling for the judge's pro-worker bias, columns (3) and (7) when controlling for some case characteristics (dummy indicating whether the firm has more than 11 workers at the time of the dismissal, *Prud'hommes* compensation, salary, seniority), column (4) and (8) when controlling for both case characteristics and the judge's pro-worker bias.

Table 4 – Effect of judge's pro-worker bias with respect to dismissal qualification

	dismissal qualification	dismissal qualification
	(1)	(2)
Judge's pro-worker bias	0.757 ***	0.750***
wrt dismissal qualification	(0.204)	(0.203)
Year FE	Yes	Yes
Court FE	Yes	Yes
Case controls	No	Yes
F test	13.69	13.63
# obs	13920	13920

Note: Each cell corresponds to oneregression. Standard errors, displayed in parentheses, are clustered at the judge level. Court and year fixed effects are used. Control variables included in column (2): indicator variable for economic dismissal, worker's wage, worker's seniority. The top fifth percentiles of judges pro-worker bias are trimmed to account for the non-linearity of the relation between the pro-worker bias and the qualification of dismissal displayed on Figure 10

Table 5 – Randomization test for the pro-worker bias with respect to dismissal qualification: case-level characteristics

	Dismissal deemed wrongful	Judge's pro-worker bias
Amount claimed by worker (in months)	-0.001	0.000
	(-0.92)	(0.32)
Amount at Prud'hommes (in months)	0.0225***	0.000
	(13.19)	(1.02)
Number of workers in firm	-0.000	0.000
	(-0.50)	(1.38)
Seniority	-0.002**	-0.000
	(-2.37)	(-0.97)
Legislation threshold applied	-0.023*	0.001
	(-1.85)	(0.72)
Worker salary	0.000	0.000
	(0.91)	(0.26)
Economic dismissal	0.145***	0.003
	(7.50)	(1.16)
Worker who appealed	-0.103***	-0.002
	(-4.59)	(-1.23)
Time between dismissal and Appeal Court	0.000	-0.000
	(0.08)	(-0.86)
Joint F-Test	0.0000	0.6616
Observations	5290	5958

Note: t-statistics are displayed in parentheses. Court and year fixed effects are used. Standard errors clustered at the judge level. Standard errors are given in brackets.*, **, and *** denote statistical significance at 10, 5 and 1%

Table 6 – Randomization test for the pro-worker bias with respect to dismissal qualification: firm-level characteristics

	Dismissal deemed wrongful	Judge's pro-worker bias
Firms' age in t	0.000	-0.000
	(0.69)	(-0.35)
Number of workers in t-1	-0.000***	0.000**
	(-2.81)	(2.45)
Sales in t-1	-0.000*	-0.000
	(1.77)	(-0.11)
Total wages in t-1	0.000***	0.000
	(2.89)	(0.45)
Value added in t-1	-0.000	-0.000
	(-1.25)	(-1.02)
Net income in t-1	0.000	0.000
	(0.34)	(1.57)
Debt in t-1	0.000	0.000
	(1.64)	(1.28)
Cash in t-1	0.000*	0.000
	(1.87)	(0.38)
Growth of number of workers in t-1	0.009	-0.001
	(0.33)	(-0.51)
Growth of sales in t-1	-0.060	-0.001
	(-1.49)	(-0.41)
Growth of total wages in t-1	-0.037	-0.001
	(-0.89)	(-0.23)
Growth of value added in t-1	0.062**	0.001
	(2.02)	(0.48)
Growth of net income in t-1	-0.002*	-0.001
	(-1.82)	(-1.57)
Growth of debt in t-1	0.000	0.000
	(0.06)	(0.43)
Growth of cash in t-1	0.000	0.000
	(0.34)	(1.05)
Joint F-Test	0.005	0.356
Observations	8439	11430

Note: t-statistics are displayed in parentheses. Court and year fixed effects are used. Standard errors clustered at the judge level.

Table 7 – Effect of judge's pro-worker bias on compensation for wrongful dismissal

	compensation in monthly wages	compensation in monthly wages
	(1)	(2)
Judge's pro-worker bias	0.607 **	0.543**
wrt compensation amount	(0.305)	(0.264)
Year FE	Yes	Yes
Court FE	Yes	Yes
Case controls	No	Yes
F test	3.97	4.23
# obs	13535	13535

Note: Each cell corresponds to one regression. Standard errors, displayed in parentheses, are clustered at the judge level. Court and year x sector fixed effects are used. Control variables included in column (2): indicator variable for economic dismissal, worker's wage, worker's seniority. The bottom and top fifth percentiles of judges pro-worker bias are trimmed to account for the non-linearity of the relation between the pro-worker bias and the qualification of dismissal displayed on Figure 11

Table 8 – Randomization test for the judge's pro-worker bias on compensation for wrongful dismissal: case-level characteristics

	Compensation in monthly wages	Judge's pro-worker bias in monthly wages
Amount claimed by worker (in months)	0.0718***	0.000
	(4.82)	(1.54)
Amount at Prud'hommes (in months)	0.465***	0.000
	(17.14)	(-0.21)
Number of workers in firm	-0.000	0.000
	(-0.68)	(0.90)
Seniority	0.160***	-0.001
	(7.76)	(-0.61)
Legislation threshold applied	0.638***	0.010
	(3.85)	(0.71)
Worker salary	-0.000***	-0.000
	(-6.18)	(-1.32)
Economic dismissal	1.528***	0.011
	(6.98)	(0.55)
Worker who appealed	0.497**	-0.0184
	(2.52)	(-0.95)
Time between dismissal and Appeal Court	0.000	-0.000
	(5290)	(-0.09)
Joint F-Test	0.0000	0.5057
Observations	5290	5912

Note: The dependent variable in the first column is an indicator variable equal to one if the dismissal is deemed wrongful. The dependent variable in the second column is the judge pro-worker bias computed as defined in section 3.2. t-statistics are displayed in parentheses. Court and year fixed effects are used. Standard errors clustered at the judge level. Standard errors are given in brackets.*, **, and *** denote statistical significance at 10, 5 and 1%

Table 9 – Randomization test for the judge's pro-worker bias on compensation for wrongful dismissal: firm-level characteristics

	Compensation in monthly wages	Judge's pro-worker bias in monthly wages
Firms' age in t	0.023***	-0.000
	(4.11)	(-0.35)
Number of workers in t-1	-0.011***	0.000
	(-3.51)	(0.93)
Sales in t-1	0.000	-0.000
	(1.17)	(-0.48)
Total wages in t-1	0.001***	0.000
	(3.26)	(0.72)
Value added in t-1	-0.000	-0.000
	(-1.18)	(-0.71)
Net income in t-1	0.000	0.000
	(0.96)	(0.995)
Debt in t-1	0.000	0.000
	(0.02)	(0.42)
Cash in t-1	-0.000	-0.000
	(-1.22)	(-1.05)
Growth of number of workers in t-1	0.206	-0.0456
	(0.61)	(-1.55)
Growth of sales in t-1	-0.638	0.0110
	(-1.21)	(0.28)
Growth of total wages in t-1	-0.792*	0.0237
	(-1.81)	(0.62)
Growth of value added in t-1	0.188	0.0100
	(0.46)	(0.25)
Growth of net income in t-1	-0.0302*	-0.00122
	(-1.81)	(-0.587)
Growth of debt in t-1	0.012	-0.000
	(0.85)	(-0.32)
Growth of cash in t-1	0.0166	0.000
	(1.46)	(0.83)
Joint F-Test	0.000	0.849
Observations	6545	11301

Note: The dependent variable in the first column is an indicator variable equal to one if the dismissal is deemed wrongful. The dependent variable in the second column is the judge pro-worker bias computed as defined in section 3.2. t-statistics are displayed in parentheses. Court and year fixed effects are used. Standard errors clustered at the judge level. Standard errors are given in brackets.*, **, and *** denote statistical significance at 10, 5 and 1%.

Table 10 – Summary main variables of firm-level data

	mean	min	max	sd	count
Nb of workers	21.79	0	99	21.98	1,677
Nb of entrants	5.38	0	241	9.70	1,677
Nb of exiters	4.71	0	95	6.47	1,677
Sales (in K euros)	4423.84	0	552645.28	6982.81	1,676
Value added (in K euros)	1267.15	0	13823.06	1665.29	1,651
Share of firms in manufacturing	0.15	0	1	0.36	1,671
Share of firms in construction	0.11	0	1	0.32	1,671
Share of firms in merchant services	0.35	0	1	0.48	1,671
Share of firms $<$ 10 years	0.29	0	1	0.46	1,671
Liquidation at t+1	0.016	0	1	0.124	1,677
Liquidation at t+2	0.031	0	1	0.173	1,677
Liquidation at t+3	0.047	0	1	0.211	1,677
Positive amount in wage bill	0.638	0	1	0.481	1,665
Amount in wage bill (when >0)	0.059	0	2.50	0.180	1,665
Judge pro-worker bias	0.043	-2.37	2.21	0.63	1,677

Table 11 – Judge pro-worker bias and firm performance 1 year after the judgment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	liquidation within $[t, t+1]$	growth rate between t-1 and t+1					
		employment	employment *cdi*	entrants	entrants *cdi*	exiters	exiters *cdi*
Pro-worker bias	0.000	0.000	-0.021	-0.074*	-0.094*	0.061	0.062*
	(0.005)	(0.018)	(0.029)	(0.042)	(0.050)	(0.049)	(0.037)
R^2	0.021	0.028	0.030	0.022	0.026	0.029	0.029
Pro-worker bias	0.002	-0.051	-0.051	-0.197**	-0.180**	0.109*	0.076
× Low Roa	(0.007)	(0.043)	(0.045)	(0.064)	(0.067)	(0.058)	(0.051)
Pro-worker bias	-0.002	0.013	-0.028	-0.021	-0.059	-0.031	0.001
× High Roa	(0.007)	(0.029)	(0.028)	(0.058)	(0.082)	(0.063)	(0.053)
R^2	0.021	0.032	0.032	0.025	0.029	0.029	0.028
# obs	1628	1620	1620	1620	1620	1620	

Note: t denotes the year of the Appeal Court judgment. The dependent variable is in Column (1) an indicator variable equal to one if the firm faced a judicial liquidation within 1 year after the judgment, in Column (2) the Haltiwanger growth rate between $t-1$ and $t+1$ of firm's employment, in Column (3) the Haltiwanger growth rate between $t-1$ and $t+1$ of firm's employment in long-term contract - *cdi*, in Column (4) the Haltiwanger growth rate between $t-1$ and $t+1$ of the number of entrants, in Column (5) the Haltiwanger growth rate between $t-1$ and $t+1$ of the number of entrants in long-term contracts, in Column (6) the Haltiwanger growth rate between $t-1$ and $t+1$ of the number of exiters and in Column (7) the Haltiwanger growth rate between $t-1$ and $t+1$ of the number of exiters in long-term contracts. The variable of interest is the judge pro-worker bias computed as defined in section 3.2. Low roa firms denote firms with a return on assets below the median the year before the judgment. Court and year fixed effects are used. The upper part of the table displays coefficient α_2 of equation (5) and the bottom part coefficients β_2 and β_3 of equation (6). Standard errors, displayed in parentheses, are clustered at the judge level. *, **, and *** denote statistical significance at 10, 5 and 1%

Table 12 – Judge pro-worker bias and firm performance 2 years after the judgment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	liquidation within $[t, t+2]$	growth rate between t-1 and t+2					
		employment	employment *cdi*	entrants	entrants *cdi*	exiters	exiters *cdi*
Pro-worker bias	0.002	-0.054**	-0.077**	-0.070	-0.140**	0.047	0.050
	(0.006)	(0.025)	(0.030)	(0.047)	(0.047)	(0.047)	(0.046)
R^2	0.017	0.022	0.029	0.020	0.020	0.019	0.017
Pro-worker bias	0.010	-0.096**	-0.097**	-0.150**	-0.116*	0.023	0.046
× Low Roa	(0.009)	(0.044)	(0.048)	(0.062)	(0.065)	(0.064)	(0.064)
Pro-worker bias	-0.004	-0.019	-0.068**	0.016	-0.150**	0.061	0.064
× High Roa	(0.009)	(0.025)	(0.029)	(0.071)	(0.073)	(0.062)	(0.067)
R^2	0.019	0.027	0.032	0.023	0.020	0.024	0.028
# obs	1628	1563	1563	1594	1594	1594	1594

Note: t denotes the year of the Appeal Court judgment. The dependent variable is in Column (1) an indicator variable equal to one if the firm faced a judicial liquidation within 2 years after the judgment, in Column (2) the Haltiwanger growth rate between $t-1$ and $t+2$ of firm's employment, in Column (3) the Haltiwanger growth rate between $t-1$ and $t+2$ of firm's employment in long-term contract - *cdi*, in Column (4) the Haltiwanger growth rate between $t-1$ and $t+2$ of the number of entrants, in Column (5) the Haltiwanger growth rate between $t-1$ and $t+2$ of the number of entrants in long-term contracts, in Column (6) the Haltiwanger growth rate between $t-1$ and $t+2$ of the number of exiters and in Column (7) the Haltiwanger growth rate between $t-1$ and $t+2$ of the number of exiters in long-term contracts. The variable of interest is the judge pro-worker bias computed as defined in section 3.2. Low roa firms denote firms with a return on assets below the median the year before the judgment. Court and year fixed effects are used. The upper part of the table displays coefficient α_2 of equation (5) and the bottom part coefficients β_2 and β_3 of equation (6). Standard errors, displayed in parentheses, are clustered at the judge level. *, **, and *** denote statistical significance at 10, 5 and 1%

Table 13 – Judge pro-worker bias and firm performance 3 years after the judgment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	liquidation	growth rate between t-1 and t+3					
	within $[t, t+3]$	employment	employment *cdi*	entrants	entrants *cdi*	exiters	exiters *cdi*
Pro-worker bias	0.013**	-0.042**	-0.068**	-0.074	-0.10**	0.026	0.035
	(0.007)	(0.020)	(0.023)	(0.047)	(0.040)	(0.044)	(0.045)
R^2	0.022	0.021	0.022	0.017	0.024	0.019	0.018
Pro-worker bias ×	0.030**	-0.075***	-0.089***	-0.148**	-0.112	0.091	0.085
Low Roa	(0.011)	(0.022)	(0.025)	(0.065)	(0.069)	(0.069)	(0.061)
Pro-worker bias ×	-0.002	-0.024	-0.062*	-0.000	-0.094	-0.035	-0.013
High Roa	(0.009)	(0.029)	(0.036)	(0.072)	(0.068)	(0.053)	(0.063)
R^2	0.028	0.024	0.022	0.020	0.026	0.028	0.024
# obs	1628	1511	1511	1524	1524	1524	1524

Note: t denotes the year of the Appeal Court judgment. The dependent variable is in Column (1) an indicator variable equal to one if the firm faced a judicial liquidation within 3 years after the judgment, in Column (2) the Haltiwanger growth rate between $t-1$ and $t+3$ of firm's employment, in Column (3) the Haltiwanger growth rate between $t-1$ and $t+3$ of firm's employment in long-term contract - *cdi*, in Column (4) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of entrants, in Column (5) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of entrants in long-term contracts, in Column (6) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of exiters and in Column (7) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of exiters in long-term contracts. The variable of interest is the judge pro-worker bias computed as defined in section 3.2. Low roa firms denote firms with a return on assets below the median the year before the judgment. Court and year fixed effects are used. The upper part of the table displays coefficient α_2 of equation (5) and the bottom part coefficients β_2 and β_3 of equation (6). Standard errors, displayed in parentheses, are clustered at the judge level. *, **, and *** denote statistical significance at 10, 5 and 1%

Table 14 – Judge pro-worker bias and firm performance 3 years after the judgment - conditional on surviving

	(1)	(2)	(3)	(4)	(5)	(6)
	growth rate between t-1 and t+3					
	employment	employment *cdi*	entrants	entrants *cdi*	exiters	exiters *cdi*
Pro-worker bias × Low Roa	-0.043*	-0.052*	-0.140**	-0.090	0.087	0.071
	(0.024)	(0.028)	(0.069)	(0.073)	(0.068)	(0.060)
Pro-worker bias × High Roa	-0.017	-0.058	0.003	-0.084	-0.041	-0.002
	(0.027)	(0.035)	(0.071)	(0.068)	(0.053)	(0.061)
R^2	0.022	0.021	0.020	0.028	0.032	0.025
# obs	1447	1447	1451	1451	1451	1451

Note: t denotes the year of the Appeal Court judgment. The dependent variable is in Column (1) the Haltiwanger growth rate between $t-1$ and $t+3$ of firm's employment, in Column (2) the Haltiwanger growth rate between $t-1$ and $t+3$ of firm's employment in long-term contract - *cdi*, in Column (3) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of entrants, in Column (4) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of entrants in long-term contracts, in Column (5) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of exiters and in Column (6) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of exiters in long-term contracts. The variable of interest is the judge pro-worker bias computed as defined in section 3.2. Low roa firms denote firms with a return on assets below the median the year before the judgment. Standard errors, displayed in parentheses, are clustered at the judge level. *, **, and *** denote statistical significance at 10, 5 and 1%s, are clustered at the judge level. *, **, and *** denote statistical significance at 10, 5 and 1%

Table 15 – Judge pro-worker bias and firm performance 3 years after the judgment - interacted with judge bias sign

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	liquidation within $[t, t+3]$	growth rate between t-1 and t+3					
		employment	employment *cdi*	entrants	entrants *cdi*	exiters	exiters *cdi*
Pro-worker bias ×	0.009	-0.038	-0.052	-0.031	0.049	-0.053	-0.057
Negative bias	(0.012)	(0.041)	(0.046)	(0.106)	(0.071)	(0.082)	(0.084)
Pro-worker bias ×	0.019*	-0.058	-0.098*	-0.111	-0.248***	0.101	0.122
Positive bias	(0.011)	(0.048)	(0.057)	(0.107)	(0.068)	(0.118)	(0.101)
Pro-worker bias ×	0.018	-0.023	-0.039	-0.056	0.134	0.041	0.066
Low Roa × Neg bias	(0.016)	(0.049)	(0.054)	(0.136)	(0.120)	(0.134)	(0.115)
Pro-worker bias ×	-0.001	-0.047	-0.061	0.005	-0.030	-0.152	-0.181
High roa × Neg bias	(0.016)	(0.050)	(0.059)	(0.160)	(0.141)	(0.104)	(0.110)
Pro-worker bias ×	0.043**	-0.130**	-0.144**	-0.244*	-0.366**	0.137	0.100
Low roa × Pos bias	(0.020)	(0.051)	(0.060)	(0.134)	(0.120)	(0.139)	(0.124)
Pro-worker bias ×	-0.001	-0.006	-0.065	-0.007	-0.160*	0.071	0.135
High roa × Pos bias	(0.014)	(0.056)	(0.074)	(0.112)	(0.095)	(0.116)	(0.105)
R^2	0.029	0.025	0.023	0.020	0.029	0.028	0.024
# obs	1620	1511	1511	1524	1524	1524	1524

Note: t denotes the year of the Appeal Court judgment. The dependent variable is in Column (1) an indicator variable equal to one if the firm faced a judicial liquidation within 3 years after the judgment, in Column (2) the Haltiwanger growth rate between $t-1$ and $t+3$ of firm's employment, in Column (3) the Haltiwanger growth rate between $t-1$ and $t+3$ of firm's employment in long-term contract - *cdi*, in Column (4) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of entrants, in Column (5) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of entrants in long-term contracts, in Column (6) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of exiters and in Column (7) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of exiters in long-term contracts. The variable of interest is the judge pro-worker bias computed as defined in section 3.2. Low roa firms denote firms with a return on assets below the median the year before the judgment. Court and year fixed effects are used. The upper part of the table displays coefficients γ_2 and γ_3 of equation (8). The bottom part reports the estimates of the coefficients when interactions with the indicator variable equal to one if the return on assets is above the median are taken into account. Standard errors, displayed in parentheses, are clustered at the judge level. *, **, and *** denote statistical significance at 10, 5 and 1%

Table 16 – Placebo tests: Judge pro-worker bias and firm performance before the judgment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	growth rate from $t-4$ to $t-1$			growth rate from $t-3$ to $t-1$			growth rate from $t-2$ to $t-1$		
	employment	entrants	exiters	employment	entrants	exiters	employment	entrants	exiters
All firms	0.020	0.004	-0.061*	0.025	0.014	0.025	0.015	0.014	-0.003
	(0.015)	(0.033)	(0.034)	(0.015)	(0.041)	(0.030)	(0.009)	(0.041)	(0.038)
# obs	2284	2285	2285	2333	2334	2334	2344	2344	2344
Low roa firms	-0.004	0.004	-0.073	0.022	0.009	0.037	0.016	0.015	0.066
	(0.028)	(0.068)	(0.071)	(0.028)	(0.059)	(0.049)	(0.015)	(0.063)	(0.044)
# obs	1433	1433	1433	1720	1721	1721	1814	1814	1814

Note: t denotes the year of the Appeal Court judgment. The dependent variable is in Column (1) the Haltiwanger growth rate of firm's employment between $t-4$ and $t-1$, in Column (2) the Haltiwanger growth rate of the number of entrants between $t-4$ and $t-1$, in Column (3) the Haltiwanger growth rate of the number of exiters between $t-4$ and $t-1$, in Column (4) the Haltiwanger growth rate of firm's employment between $t-3$ and $t-1$, in Column (5) the Haltiwanger growth rate of the number of entrants between $t-3$ and $t-1$, in Column (6) the Haltiwanger growth rate of the number of exiters between $t-3$ and $t-1$, in Column (7) the Haltiwanger growth rate of firm's employment between $t-2$ and $t-1$, in Column (8) the Haltiwanger growth rate of the number of entrants between $t-2$ and $t-1$, in Column (9) the Haltiwanger growth rate of the number of exiters between $t-2$ and $t-1$. The first line of the table reports the α_1 OLS coefficients of equation5, i.e. the estimates for the sample of all firms. The second line reports the β_1 OLS coefficient (see equation 6) of the interaction term between the indicator variable equal to 1 if the return on assets of the firm is below the median the year before $t-i$, $i=2$ in the upper part and $i=3$ in the bottom part, and the judge pro-worker bias computed as defined in section 3.2. Court and year fixed effects are used. Standard errors, displayed in parentheses, are clustered at the judge and level. *, **, and *** denote statistical significance at 10, 5 and 1%

Table 17 – Judge pro-worker bias and firm performance 3 years after the judgment - according to leverage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	liquidation within $[t, t+3]$	growth rate between t-1 and t+3					
		employment	employment *cdi*	entrants	entrants *cdi*	exiters	exiters *cdi*
Pro-worker bias ×	0.007	-0.025	-0.043	-0.004	-0.056	0.045	0.061
Low leverage	(0.010)	(0.024)	(0.029)	(0.045)	(0.040)	(0.061)	(0.057)
Pro-worker bias ×	0.019*	-0.067**	-0.105**	-0.134*	-0.151**	0.020	0.020
High leverage	(0.010)	(0.032)	(0.036)	(0.068)	(0.064)	(0.056)	(0.064)
R^2	0.023	0.021	0.023	0.020	0.028	0.022	0.023
# obs	1628	1511	1511	1524	1524	1524	1524

Note: t denotes the year of the Appeal Court judgment. The dependent variable is in Column (1) an indicator variable equal to one if the firm faced a judicial liquidation within 3 years after the judgment, in Column (2) the Haltiwanger growth rate between $t-1$ and $t+3$ of firm's employment, in Column (3) the Haltiwanger growth rate between $t-1$ and $t+3$ of firm's total hours, in Column (4) the Haltiwanger growth rate between $t-1$ and $t+3$ of firm's sales, in Column (5) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of entrants and in Column (6) the Haltiwanger growth rate between $t-1$ and $t+3$ of the number of exiters. The variable of interest is the judge pro-worker bias computed as defined in section 3.2. Low leverage firms denote firms with a leverage (total debt/total net assets) below the median the year before the judgment. Court and year fixed effects are used. Standard errors, displayed in parentheses, are clustered at the judge level. *, **, and *** denote statistical significance at 10, 5 and 1%

Table 18 – Counter-factual firms outcomes when capping judges biases

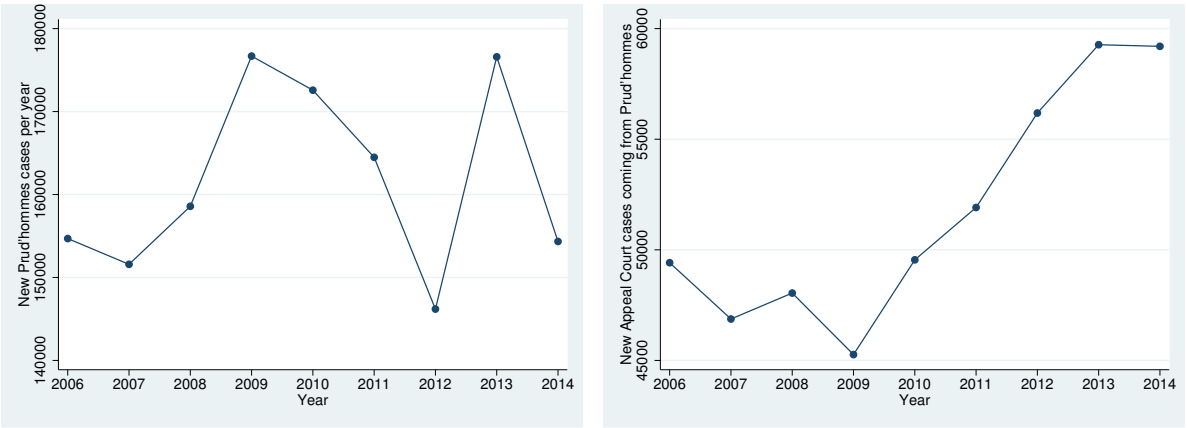
	(1) liquidation within [t,t+3]	(2) employment growth btw [t-1,t+3]	(3) nb of entrants growth btw [t-1,t+3]
Average all firms	0.0510	-0.124	-0.222
Counter-factuals when reducing judge bias level			
Capping at p10	0.0301	-0.026	-0.071
Capping at p50	0.0466	-0.110	-0.196
Capping at p90	0.0495	-0.121	-0.217
Counter-factual when reducing judge bias variation			
Zero bias	0.0490	-0.117	-0.202
# obs	1,470	1,511	1,524

Note: This table uses regressions performed in Table 13 to construct the counter-factual of firms liquidation, employment and entrants growth when capping judges pro-worker biases. The first line displays the actual averages in the estimation, , and the subsequent lines exhibit the capping judges pro-worker biases at the 10th, 25th, 50th, 75th and 90th percentiles. Column (1) indicates the counter-factual for firms judicial liquidation rate within 3 years after the judgment, column (2) the counter-factual Haltiwanger growth rate between $t-1$ and $t+3$ of firm's employment and column (3) the counter-factual Haltiwanger growth rate between $t-1$ and $t+3$ of firm's number of entrants. Accordingly, the number of the first line, fist column, equal to 0.0512, means that the probability of liquidation at 3-year horizon is equal to 0.0512, while the number of the second line, first column, equal to 0.0361, means that the probability of liquidation at 3-year horizon would be equal to 0.0361 if judges bias were capped at the tenth percentile.

Table 19 – Counter-factual firms outcomes when capping judges biases for firms whose return on assets is below the median and for firms above the median

	liquidation within [t,t+3]		employment growth btw [t-1,t+3]		entrants growth btw [t-1,t+3]	
	roa $<$ p50	roa $\geq$ p50	roa $<$ p50	roa $\geq$ p50	roa $<$ p50	roa $\geq$ p50
Average	0.0645	0.0378	-0.160	-0.089	-0.232	-0.214
Counter-factuals when reducing judge bias level						
Capping at p10	0.0236	0.0365	-0.004	-0.048	0.068	-0.205
Capping at p50	0.0561	0.0373	-0.133	-0.087	-0.181	-0.211
Capping at p90	0.0617	0.0376	-0.155	-0.089	-0.221	-0.213
Counter-factual when reducing judge bias variance						
Bias set to mean	0.0611	0.0372	-0.138	-0.097	-0.192	-0.211
# obs	728	742	740	771	749	775

Note: This table uses regressions performed in Table 13 to construct the counter-factual of firms liquidation, employment and entrants growth when capping judges pro-worker biases. The first line displays the actual averages in the estimation sample, and the subsequent lines exhibit the capping of judges pro-worker biases at the 10th, 25th, 50th, 75th and 90th percentiles. The last line exhibites the counter-factual when setting all judge biases to the mean bias (equal to 0). Column (1) indicates the counter-factual for firms judicial liquidation rate within 3 years after the judgment, column (2) the counter-factual Haltiwanger growth rate between $t-1$ and $t+3$ of firm's employment and column (3) the counter-factual Haltiwanger growth rate between $t-1$ and $t+3$ of firm's number of entrants. Accordingly, the number of the first line, fist column, equal to 0.0647, means that the probability of liquidation at 3-year horizon is equal to 0.0647, while the number of the second line, first column, equal to 0.0224, means that the probability of liquidation at 3-year horizon would be equal to 0.0224 if judges bias were capped at the tenth percentile.



(a) New *Prud'hommes* cases

(b) New Appeal Court cases coming from *Prud'hommes*

Figure 1 – Number of new *Prud'hommes* cases per year and new Appeal Court cases coming from Prud'hommes per year in France

Note: The figure (a) on the left displays the numbers of new cases opened per year for all French Employment Tribunals (including non-metropolitan France). The figure (b) on the right displays the numbers of new Appeal Court cases coming from *Prud'hommes* opened per year. Figures were constructed using datasets on *Prud'hommes* and Appeal Court activity available on the website of the French Ministry of Justice. Numbers displayed do not include requests for interim measures (*demande en référé*). Source: French ministry of Justice website.

Figure 2 – Example of end of Appeal Court ruling

PAR CES MOTIFS

LA COUR,

Statuant par arrêt contradictoire,

INFIRME PARTIELLEMENT le jugement déféré et statuant à nouveau,

CONDAMNE la Société Cilomate Transports à verser à Monsieur B. 30.000 € (TRENTE MILLE EUROS) à titre d'indemnité pour licenciement sans cause réelle et sérieuse ;

ORDONNE le remboursement par la Société Cilomate Transports à l'organisme concerné des indemnités de chômage effectivement versées à Monsieur B. par suite de son licenciement et ce dans la limite de trois mois ;

DÉBOUTE Monsieur B. de sa demande au titre de dommages et intérêts pour manquement aux obligations conventionnelles ;

CONFIRME pour le surplus le jugement déféré ;

Y ajoutant,

CONDAMNE la Société Cilomate Transports à verser à Monsieur B. la somme de 1.000 € (MILLE EUROS) au titre de l'article 700 du Code de Procédure Civile ;

DÉBOUTE la Société Cilomate Transports de sa demande au titre de l'article 700 du Code de Procédure Civile ;

CONDAMNE la Société Cilomate Transports aux entiers dépens.

Prononcé publiquement par mise à disposition de l'arrêt au greffe de la Cour, les parties en ayant été préalablement avisées dans les conditions prévues au deuxième alinéa de l'article 450 du Code de Procédure Civile,

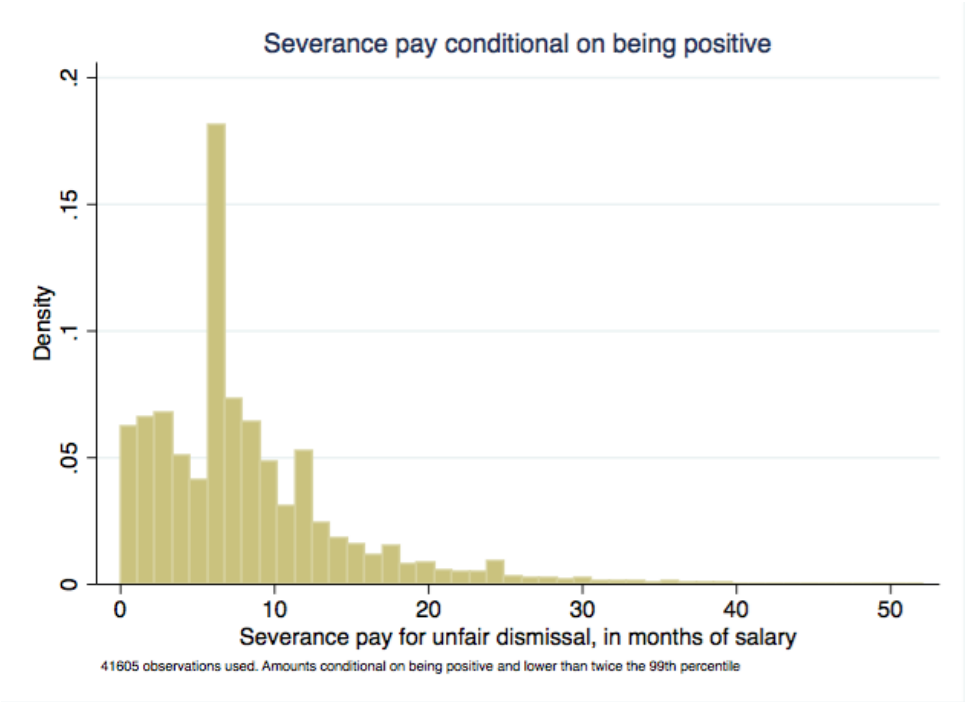
Et signé par Madame SCHMEITZKY, président, et par Madame BARBIER, greffier, auquel la minute de la décision a été remise par le magistrat signataire.

LE GREFFIER LE PRÉSIDENT

Minute en sept pages.

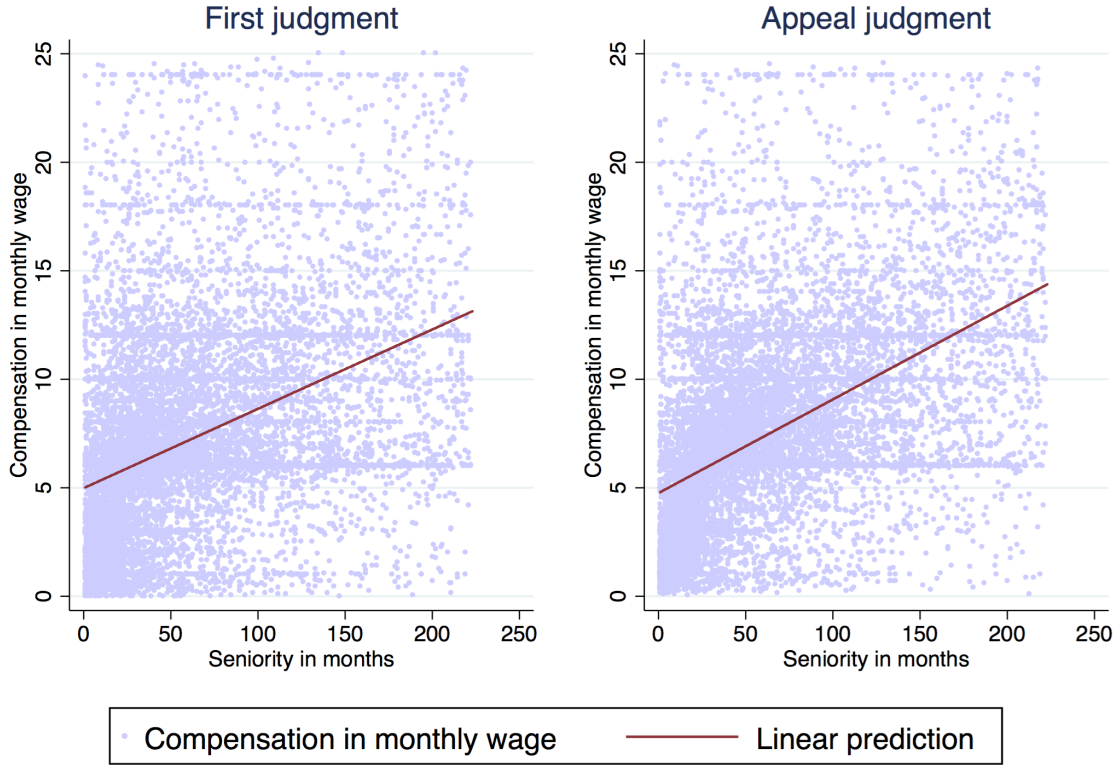
Composition de la juridiction : Madame GUIOT MLYNARCZYK, Siégeant,KREMSER (Me), Me CODAZZI
Décision attaquée : C. Prud. Longwy, Nancy 2011-02-25

Figure 3 – Histogram of severance pay amounts in monthly wage



Note: This graph is an histogram of severance pay amounts in monthly wages, conditional on this amount being positive. Only amounts lower than 50 months of salaries are displayed.

Figure 4 – Compensations for wrongful dismissals and seniority

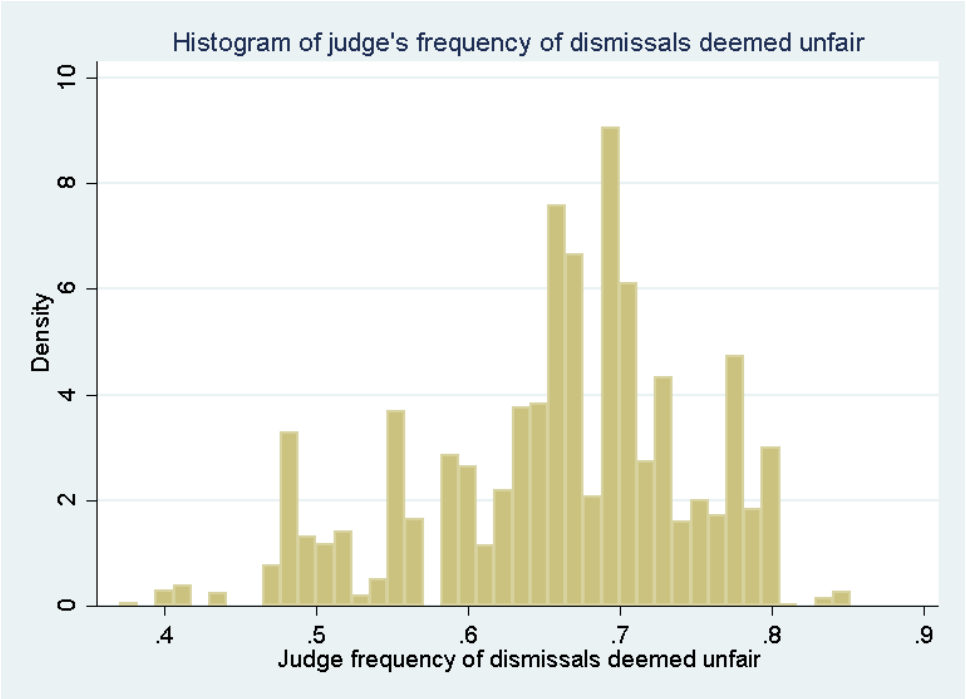


Note: These graphs are scatter plots of compensations for wrongful dismissals depending on seniority. Compensations are expressed in monthly wage. The left panel displays compensations set by *prud'hommes* and the right panel displays compensations set by Appeal Courts. Source: Ministry of Justice.

Figure 5 – Relation between compensations for wrongful dismissals set by Appeal Courts and by *prud'hommes*

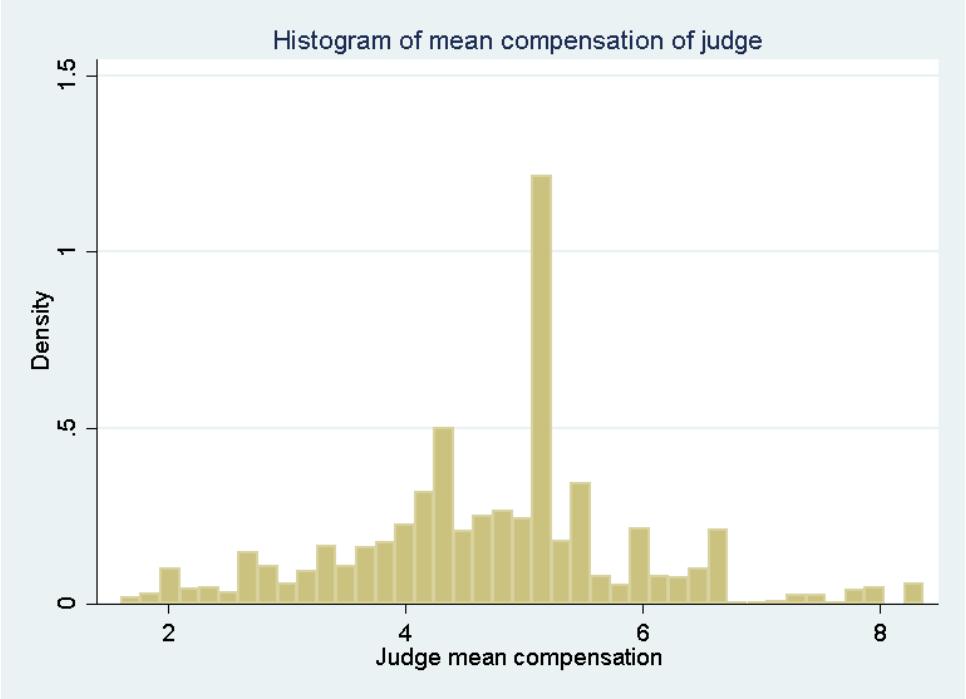
Note: This graph is a scatter plot of the compensations for wrongful dismissals set by Appeal Courts and by *prud'hommes*. Compensations are expressed in monthly wage. Source: Ministry of Justice.

Figure 6 – Histogram of frequency of dismissals deemed unfair per judge



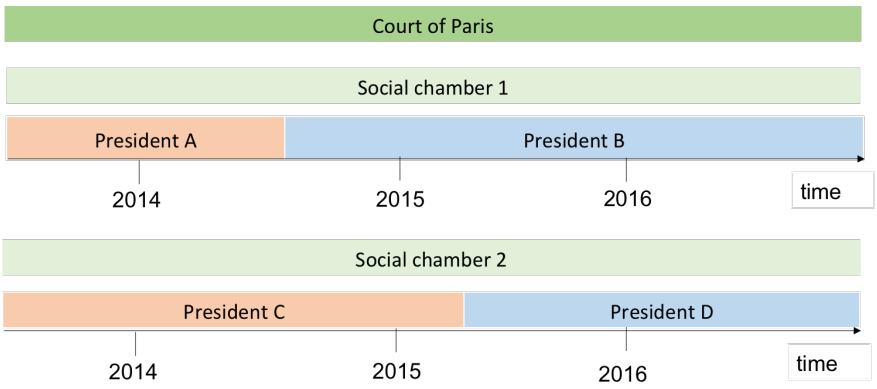
Note: This Figure exhibits the histogram of frequency of dismissals deemed unfair per judge. Case-level data are used, therefore the number of observations used is the number of different cases for which we are able to compute the pro-worker bias

Figure 7 – Histogram of mean compensation per judge



Note: This Figure exhibits the histogram of mean compensation per judge. Case-level data are used, therefore the number of observations used is the number of different cases for which we are able to compute the pro-worker bias

Figure 8 – Allocation of cases exploited for identification

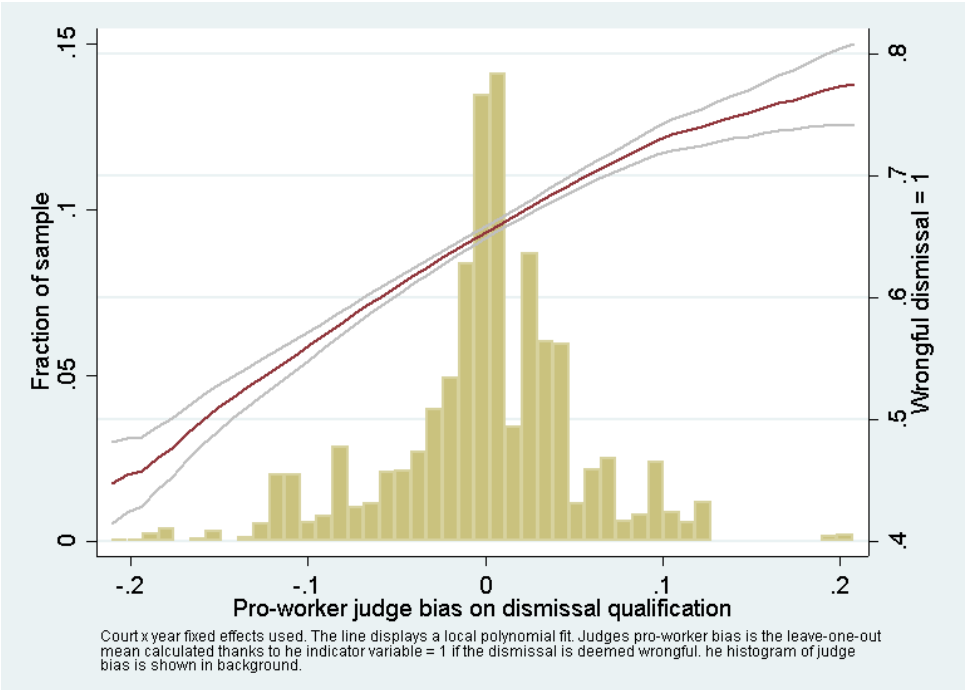


Note: This Figure displays the allocation of cases to judges we exploit for identification. Within an Appeal Court, there may be several social chambers. Within each social chamber, there is, at an instant t, one chamber president that judges the cases. When judges move jobs during the years, for instance in 2014, one can identify the allocation to president A or president B.

Figure 9 – Judges network

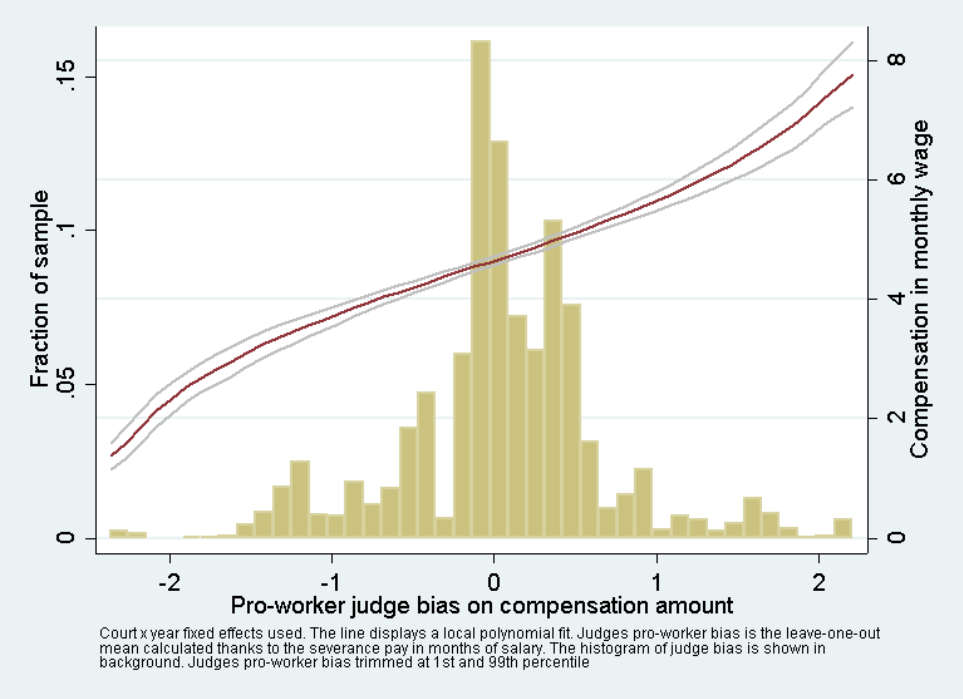
Note: Each dot represents a judge. Two dots are connected if the two judges shared the same social chamber at least once. The higher the network density, the higher the mobility of judges across social chambers. If judges were not mobile whatsoever, one would observe perfectly distinct judges clusters, each cluster representing one social chamber.

Figure 10 – Judges pro-worker bias with respect to the dismissal qualification



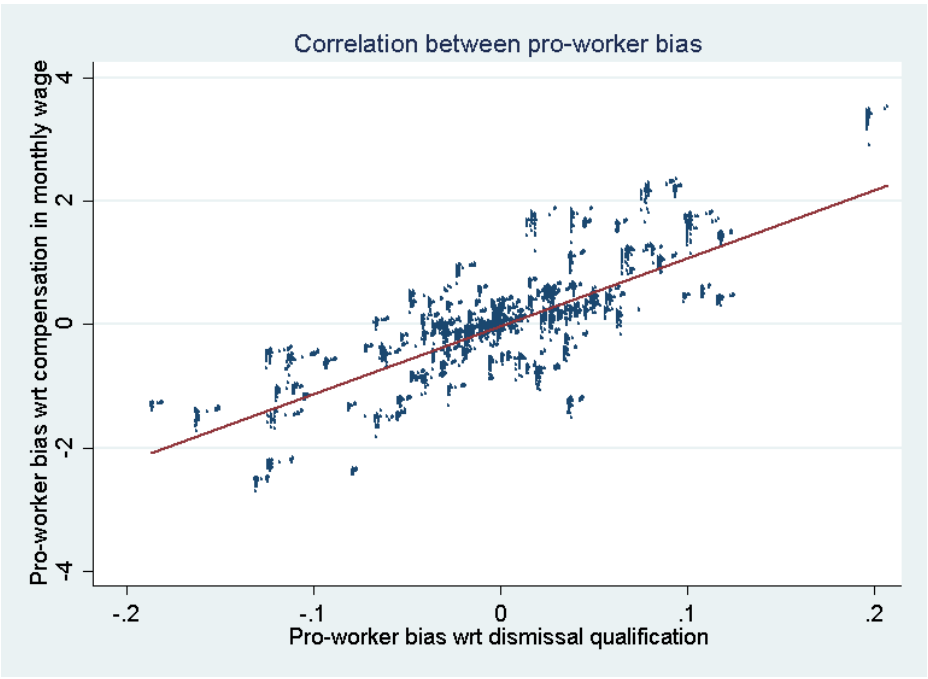
Note: This figure displays the histogram of pro-worker biases of judges about the qualification of dismissals in background and a local polynomial fit of the indicator variable equal to one if the dismissal is deemed wrongful. Case-level data are used, therefore the number of observations used is the number of different cases for which we are able to compute the pro-worker bias. Pro-worker bias is computed as defined in section 3.2.

Figure 11 – Judges pro-worker biases with respect to the compensation in months of salary



Note : This figure displays the histogram of pro-worker biases of judges about the amount of compensation for wrongful dismissal and a local polynomial fit of the amount of compensation. Case-level data are used, therefore the number of observations used is the number of different cases for which we are able to compute the pro-worker bias. Pro-worker bias is computed as defined in section 3.2

Figure 12 – Correlation between the two indices of pro-worker biases



Note: This figure is a scatter plot of the pro-worker bias measure computed thanks to the dismissal qualification and the pro-worker bias computed thanks to the compensation amount, conditional on being positive. Pro-worker biases are computed as defined in section 3.2

A Caps on dismissal compensation in European countries

A majority of European countries have set rules that limit the amounts granted by judges in case of unfair dismissal (excluding cases of discrimination or harassment):

- In Italy, a fixed amount compensating an unfair dismissal was introduced in 2014 by the so-called (***Jobs Act***) for the new indefinite-duration contract with progressive employment protection, which depends on seniority: from 4 months for less than 2 years of seniority to 24 months for 12 years of seniority. From these amounts one must deduce severance payments received at the time of dismissal. In 2018 the Italian Consitutionnal Court overrules this regulation, stating that the amount of compensation to the worker cannot be only based on her seniority.

- In Germany the schedule depends on seniority and reaches 12 months of salary (and even 15 months if the worker more than 50 years old with more than 15 years of seniority, and 18 months if more than 55 years olds with more than 20 years of service).

- In Austria, the schedule depends on seniority: for those with less than 2 years the amount is 6 weeks of salary; between 2 and 5 years it is 2 months; between 5 and 15 years, 3 months; between 15 and 25 months, 4 months; beyond that: 5 months of salary.

- In Belgium, the minimum compensation is 3 weeks and the maximum 17 weeks of salary.

- In Denmark, workers compensation is capped at 1 year of salary for blue-collar; for white-collar workers, compensation goes up to half of the wages received during the notice period, capped at 3 months for those under 30, at 4 months if more than 10 years of service and 6 months if more than 15 years of service.

- In Spain, the indemnity is set at 33 days per year of seniority with a maximum of 24 months of salary, for contracts signed since the 2012 labor market reform.

- In Finland, the allowance is between 3 (minimum) and 24 (maximum) months of salary, depending on several factors including seniority, the age of the employee, the length of unemployment period, or the loss of income.

- In the Netherlands, the schedule depends above all on the age of the employee (1/2 month of salary per year of seniority up to 35 years old, 1 month per year of seniority between 35 and 45 years old, 1.5 month per year of seniority between 45 and 55 old, 2 months per year of seniority beyond 55), to which a correction factor can be added depending on the exact situation. From these amounts one must deduce severance payments received at the time of dismissal.

- In Portugal, the court may grant between 15 (minimum) and 45 (maximum) days of salary per year of seniority with a minimum of 3 months.

- In the United Kingdom, for employees with more than two years of seniority the allowance consists of two components (i) a basic allowance which depends on seniority and capped at £ 14,250 and (ii) a compensatory allowance capped at one year salary in the limit £ 78,335.

- In Sweden, the allowance is 16 months of salary for employees with less than 5 years of seniority, 24 months between 5 and 10 years, and 32 months for more than 10 years.

- In France since 2017 (***Ordonnances***), compensation for unfair dismissal is capped by an amount that depends on seniority varying from 1 month to 20 months for employees with 30 year or more of tenure, and cannot be less that 3 months of salary for employees with at least 2 years of seniority (at least 11 years for those working in firms with less than 11 employees).

B Computation of judge bias

To compute the judge bias, we can estimate

$$y_{ijkt} = \eta_{kt} + \varepsilon_{ijkt} \tag{B1}$$

assuming $\mathbb{E}(\varepsilon_{ijkt}|\eta_{kt}) = 0$, meaning that the compensation of case i is assumed to be equal to a term common to all cases judged in the same chamber and year as case i plus a random term. This implies that the chamber $\times$ year fixed effect is defined by

$$\eta_{kt} = \mathbb{E}(y_{ijkt}|\eta_{kt}) \tag{B2}$$

the sample counterpart of which is

$$\hat{\eta}_{kt} = \frac{1}{n_{kt}} \sum_{i \in (k,t)} y_{ijkt} \tag{B3}$$

where $i \in (k,t)$ stands for all the cases judged in chamber k at date t and n_{kt} is the number of cases judged in chamber k in year t. The chamber k fixed effect in year t is equal to the average of all compensations in chamber k in year t.

By definition, the estimator of the judge fixed effect, conditional on the chamber $\times$ year fixed effect is

$$\hat{\varepsilon}_j = \frac{1}{n_j} \sum_{i \in j} \hat{\varepsilon}_{ijkt} \tag{B4}$$

Let us denote by $(K,T)(j)$ the set of all chamber $\times$ year pairs (k,t) observed for judge j.We can write

$$\hat{\varepsilon}_j = \frac{1}{n_j} \sum_{i \in j} \hat{\varepsilon}_{ijkt} = \frac{1}{n_j} \sum_{i \in j} y_{ijkt} - \frac{1}{n_j} \sum_{(k,t) \in (K,T)(j)} \frac{n_{jkt}}{n_{kt}} \hat{\eta}_{kt} \tag{B5}$$

Equation (B5) shows, together with equation (B3), that $\hat{\varepsilon}_j$ is equal to $\bar{\varepsilon}_j$ defined in equation (2).