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Labour Courts and Firing Costs: The Labour Market Effects of Trial Delays*

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Abstract

Employment protection is the result of labour laws as well as of institutional factors which are not encompassed in official legislation. Courts' delays in settling labour disputes are among those factors. Using individual data from the Italian Labour Force Survey for the period 2008-2010 and exploiting the territorial heterogeneity in the duration of labour trials across Italian regions, we investigate the effect of dismissal costs on the composition of employment. We find that labour courts' delays reduce the employment rate and increase inactivity of specific categories of workers, i.e. women, young and low skilled individuals. Furthermore, lengthy trials reduce the likelihood of accessing a permanent occupation and increase the incidence of long term unemployment for the same groups of workers. These results also imply that trials length and, more generally, courts activity have an impact on labour market outcomes which goes in the same direction as explicitly written rules.

Keywords: Labour courts, EPL, institutions, employment rate, inactivity rate, temporary jobs
JEL Classification: K31; K41; J21; J23; J63

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There are no fixed times for the administration of justice, or its execution, in this unaccountable country. (Pictures from Italy, Charles Dickens, 1846)

1 Introduction

A growing attention has recently been devoted to the economic consequences of courts' inefficiency. In this framework, it is widely recognized that the influence of the judiciary on the actual enforcement of laws – and hence on the quality of institutions - goes far beyond the aspects related to the outcome of trials. By shaping the contractual framework in which firms operate, the efficiency of judicial system affects several aspects of firms' decision-making process such as investment and employment decisions and, more generally, contractual relationships which ultimately influence the aggregate economic performance. In this respect, the length of trials per se is one aspect of judiciary which may undermine economic development, as also stressed by the OECD (2012).

This paper contributes to the effects of institutions on economic performance by looking at the interaction among institutions empowered with the settling and the enforcement of rules. We focus on the judiciary, and more specifically on the interplay between labour courts' delays and employment protection legislation (EPL), and investigate how and to what extent the speed of labour trials impacts workers' employment opportunities by affecting dismissal costs.

Most empirical studies on the impact of dismissal costs on job reallocation and employment are based on aggregate indexes of EPL which provide a measure of the strictness of the legislation on workers' dismissal at country level.[1] One important limitation of these aggregate indexes is that they only take into account formal law provisions and fail to capture the de facto impact of other institutional factors, which may nonetheless play a significant role on the implementation and enforcement of job protection. As a result, the actual cost of dismissal rules can be very different even across countries with similar employment protection legislation if law provisions are enforced in a completely different way.

[1] The OECD EPL index is one of the most widely used in the empirical studies on the economic effects of labour market regulation (OECD, 2004; Venn, 2009). Apart from the OECD index, other indicators of the stringency of labour regulation have been developed. Such indicators, which generally cover a larger set of countries than the OECD index or a longer period of time, have been constructed by either by the World Bank or by individual researchers (see for example Blanchard and Wolfers, 2000; Belot et al., 2004; Botero et al. 2004).

The length of labour trials is a key determinant of the actual amount of firing costs that firms are confronted with when they take their hiring and firing decisions. Differently from other judicial outcomes which cannot be immediately related to EPL, the length of labour trials has a clear interpretation in terms of firing costs.[2] First, courts' delays directly affect workers' compensations in case of unfair dismissals when such a compensation is proportional to the time elapsing from the firing decision to the Court ruling.[3] Second, the prolonged uncertainty about the result of the trial - induced by courts' delays – can hinder, at least temporarily, the adjustment process of the employment and investment at firm level with a negative effect on firms business opportunities and productivity.[4]

This paper studies the impact of labour trials length as a determinant of the strictness of EPL on demographic patterns of employment and, ultimately, on the labour market gap of individuals with different employability characteristics. We argue that labour courts' delays increase firms firing costs and therefore affect workers' employment opportunities by reducing inflows into unemployment and, at the same time, making it more difficult for job seekers to enter employment.[5] The overall net impact of dismissal costs induced by labour courts' delays on aggregate employment is theoretically undetermined because of the negative effect on both job creation and job destruction, nevertheless the increase of firing costs may hamper differently job opportunities of individuals with different characteristics. For example, youths, as new entrants into the labour markets, and prime age women with intermittent participation spells, are more likely to be affected by the reduction of job creation. Moreover, in presence of asymmetric information and high firing costs, firms increase the share of workers hired with temporary contracts in order to reduce the probability of a "bad" match. This will mostly affect less experienced (typically young) and less educated workers. In addition, firms tend to hire more from the employed seekers pool rather than among the unemployed workers, increasing

[2] See for a discussion Fraisse (2015).

[3] In many countries, when firing decision is ruled unfair, the employer is required to pay legal expenses and, on top of it, to compensate the unfairly dismissed employee with the full foregone wages and social contributions for the length of time between the dismissal and the final judge's decision.

[4] For instance, Bloom (2009) shows how higher uncertainty causes firms to temporarily pause their investment and employment decisions.

[5] There is a large theoretical and empirical literature which shows how firing costs affect firms' employment decisions and workers' employment opportunities, See Skedinger (2011) for a comphrensive survey.

the duration and persistence of unemployment (Kugler and Gilles-Saint Paul, 2004). Since stricter employment protection affects more individuals who have already a weak position in the labour market, higher dismissal costs due to courts'delays may exacerbate the labour market gap among workers with different characteristics.

The analytical framework of our work is close to Khan (2007). However his approach, as most studies on the effect of firing costs on job flows and employment based on aggregate EPL indexes, does not allow to distinguish between EPL provisions and EPL enforcement. Differently, we exploit the heterogeneity of the Italian judiciary districts in terms of trials' duration and, following Gianfreda and Vallanti (2017) and Fraisse et al (2015) ,[6] we propose an identification strategy based on a source of variation of dismissal costs related to legislation enforcement which varies across space and time: even when labour laws do not change, labour courts tend to operate differently across geographical jurisdictions and years.[7] This within-country variation in the enforcement allows us to make inference on the impact of EPL which goes beyond the usual cross-country approach. In this respect, focusing on the Italian case has an important advantage because of the dramatic heterogeneity in the duration of labour trials throughout the territory, with 1366 estimated days in Bari against 224 in Torino. Against this wide variation in judicial efficiency, the employment protection legislation and other labour market institutions are centralised and homogenous throughout the country.[8] As a result, the effect of EPL provisions can be isolated from that of other institutional factors such as wage compression and collective bargaining coverage which can interact with firing cost legislation in determining labour market outcomes (Bertola and Rogerson, 1997; Baranowska and Gebel, 2010;

[6] Fraisse et al (2015) focus on the variation of labour courts activity (i.e. the number of filed suits over the number of dismissed workers) and suit outcomes at local level as a determinant of firing costs while Gianfreda and Vallanti (2017) focus on trials length.

[7] Cross countries differences in the duration of suits have been shown to be influenced by the characteristics of the legal systems. In particular, judicial formalism, which is greater in civil then in common low countries, (Djanko et al., 2002) normative complexity (Di Vita, 2012) as well as normative decentralization (Di Vita, 2015) have been found to be correlated with longer proceedings and longer trials. Another strand of reseach focuses on non-formal aspects of the legal systems, thus capturing causes of inefficiency which are not simply accounted for by differences in the set of laws and procedures. Carmigiani and Giacomelli (2010) and Buonanno and Galizzi (2010) show that the number of lawyers significantly influences the litigation rate, while Marchesi (2007) highlights the role of the difference between the legal and the market interest rate in determining a "pathological" demand for justice. Finally, Coviello et al (2014) show that the choice of work scheduling has quantitatively important effects on judges' performance and therefore on trial length.

[8] Boeri and Jimeno (2005) and Rubery (2011) stress the importance of using institutional data referred to the same country and exploiting any time-series available for regulations, in order to avoid the well-known identification problems of reverse causality and omitted variables.

Kahn, 2007).

There are a number of issues concerning the identification of the causal effect of labour trial delays on employment outcomes. First and foremost, both the duration of labour trials and employment opportunities of different groups of workers may be driven by some unobserved factors such as, for example, the degree of local economic development and the quality of (local) institutions. Second, the risk of reverse causality should not be overlooked as a limited access to the labour market may affect the litigation rate among workers and by this way the length of legal disputes.

To cope with the potential endogeneity of our indicator of judicial efficiency, we use a set of instruments which are shown to be disconnected from the adjustment of the local labour market as well as from the functioning of other courts in the same judicial district. These include the number of judges who moves from/to a given labour court districts and the number of judges' decisions concerning labour disputes of civil servants that are appealed before the Court of Appeal, as in Gianfreda and Vallanti (2017). Moreover, the time series dimension of our data also allows to control for the unobserved heterogeneity among judicial districts via district fixed effects. Therefore, our main results are not driven by cross-sectional differences among districts, such as cultural, economic and social characteristics that may impact simultaneously on labour market adjustments, employment opportunities and the efficiency of courts. Furthermore, in order to identify the effect of long duration of labour trials - as a component of firing costs - from the effect of civil justice inefficiency at large, which can affect the labour market outcome through channels other than firing costs, we also include among the regressors the length of civil trials as a proxy for the quality of judicial institutions. Finally, our results are also robust to the inclusion of district-specific and industry-specific time dummies, which captures any (time and district variant) omitted factors - such as local economic development and informal institutions - which could influence both productivity and judicial efficiency.

We show that lengthy labour trials discourage the access to labour market of women, youths and low skilled individuals, as they lower the relative incidence of employment and increases the inactivity rate for these groups. They also reduce the likelihood of a permanent job and increase

the likelihood of being long term unemployed for these workers.

The rest of the paper is organized as follows. Section 2 discusses the background literature. Section 3 and Section 4 describe the institutional setting and the main characteristics of the data respectively. Section 5 presents the estimation framework and the results and Section 6 concludes.

2 Related literature

2.1 Judicial activity and economic performance

The interaction among institutions empowered with the settling and the enforcement of rules has been studied in relation to various aspects of firms' decision making process and economic performance. The literature has identified two main channels through which courts efficiency affect firms' productive decisions, i.e. the enforceability of contracts - hence the uncertainty over the value of future assets - and the possibility of opportunistic behaviour. In this respect, several studies have documented the impact of trial delays and the quality of courts' decisions on the efficiency of credit markets: delays and low quality of the judiciary (1) raise the cost of financing for firms by reducing the recovery value of collateral assets (Fabbri, 2010), (2) increase opportunistic behaviour on the part of borrowers thus reducing the ex ante willingness of creditors to extend loans (Bianco et al., 2005; Chemin 2009 and Shvets, 2013) and (3) affect firms' access to finance, firms' investment and size (Ponticelli and Alencar, 2016). Firms' opportunistic behaviour are also the channel through which the duration of trials affects the delay in delivering public works in a public procurement setting (Coviello et al., 2018). Also, by affecting the ability to enforce written contracts, lengthy trials reduce firms performance in industries which are more contract-intensive (Chakraborty, 2016) and are a determinant of a country's competitive advantage as they increase underinvestment in the production of goods requiring relationship-specific investments (Nunn, 2007; Chemin 2012).

A related strand of literature shows that better judicial systems are associated with larger average firm size, as they enable management to gain control over physical assets from legal devices other than ownership rights, thus favoring the increase in firms' size in industries that are not physical capital intensive (Kumar et al. 1999); the effect of judicial efficiency on firms's size has also been

documented in other studies (Giacomelli and Menon 2016, Fabbri 2010).

At a more aggregate level, Chemin (2009) shows the effects of trial delays on various indicators of growth and local economic development.

The role of the institutional background as a dimension of employment regulation implementation and actual EPL is a less explored issue. Recently, few studies have used indirect measures of enforcement, such as labour inspections, courts' activity and trials' length, to study whether within-country variation in enforcement affects firms employment decisions and productivity. Among the others, Almeida and Carniero (2009, 2012) for Brazil, Okudaira (2015) for Japan, Fraisse et al. (2015) for France and Gianfreda and Vallanti (2017) for Italy exploit geographical variations in labour inspections and labour courts' activity to identify the effects of labour regulation. They find that the enforcement of labour regulation (through inspections or labour court performance) affects the actual hiring and firing costs faced by firms, and through that, have a significant negative impact on firms' labour market adjustments and jobs reallocation, firms' size and productivity. To our knowledge, there is no empirical evidence on the effects of courts' delays on labour market demographic patterns.

2.2 Firing cost and employment

Theoretical models offer clear predictions of the effects of EPL on employment adjustments. In the standard Mortensen and Pissarides (1994) theoretical setting, the searching process is costly both for firms and workers. Firing costs protect existing jobs, thus reducing job destruction; however, they also undermine job creation as firms anticipate costly dismissals (Bentolila and Bertola, 1990; Hopenhayan and Rogerson 1993; Pissarides, 2000).[9] By decreasing both job creation and job destruction higher firing costs unambiguously reduce job reallocation; nevertheless, from a theoretical point of view, the effect on employment is less clear cut, depending on which effect - the decrease in job creation or destruction - prevails.[10]

[9] Iif wages are flexible, then the trasfer component of firing costs (i.e. severence payment component) translates into lower initial wages, with smaller or no effects on firms' hiring decision (Lazear, 1990). However, in the absence of full contractual flexibility in the wage setting process, severance payments still have real effects on employment (Garibaldi and Violante, 2005; Khan, 2007).

[10] On empirical grounds, firing costs have been shown to negatively affect job flows (Gomez-Salvador et al, 2004; Messina and Vallanti, 2007; Micco and Pages, 2004; Autor et al. 2007; Kugler and Pica, 2008, Haltiwanger et al.

A common feature of the standard search and matching models is that the labour force is homogeneous individuals. In reality, workers have different characteristics which affect their employability opportunities in presence of substantial firing costs. This raises the question of whether the costs and benefits of stricter employment protection are distributed evenly across different groups of individuals or, conversely, there are categories of workers that are more affected than others. Intuitively, new entrants (as young individuals) and women who have a more fragmented work patterns are disproportionately penalized by any reduction in hiring caused by firing costs. On the other hand, incumbent workers (typically prime-age male workers) benefit from more job stability through a reduction in job destruction.

A differential effect of firing costs on different groups of workers is also predicted by models with asymmetric information in which the productivity of new-hired workers is unknown either because it is imperfectly observed by firms (Kugler and Gilles-Saint Paul, 2004; Canziani and Petrongolo, 2001) or because it is fully revealed at a later stage of their working career (Blanchard and Landier, 2002; Tealdi, 2011). In this theoretical setting, when dismissal costs are high, firms will be more reluctant to hire individuals on a permanent basis and more prone to increase the share of workers hired with temporary contracts in order to reduce the probability of a "bad" match. Again, this limited information will mostly affect individuals with limited work experience (typically young workers) and with less verifiable qualifications and competencies (such as immigrants and low skilled individuals). In addition, firms concerned about firing costs will generally prefer to recruit new workers primarily from the pool of those already employed rather than among unemployed workers, because employers infer that dismissed workers have a low productivity. In presence of high firing costs, the so called unemployment stigma leads to an increase of the duration and persistence of unemployment (Kugler and Gilles-Saint Paul, 2004, Canziani and Petrongolo, 2001).

There is a large empirical literature which documents that the effect of EPL varies across demographic groups. Using an aggregate employment law index for 85 countries, Botero et al. (2004) find that employment laws negatively affect the unemployment rates of young individuals, both men

2014) while evidence on their impact on overall employment is mixed.

and women. Results in Kahn (2007), also based on an aggregate EPL index, show that stricter EPL raises the relative incidence of temporary employment for young workers, women as well as those with low cognitive ability and these effects are stronger the higher a country's level of collective bargaining coverage. Similarly, Jimeno and Rodriguez-Palenzuela (2002), and Bertola et al (2007) find that employment opportunities for women, young and older workers are relatively lower in high unionization and employment protection environments. Other studies related to Latin America find a negative effect of EPL on women and young workers employment rates (Heckman and Pages, 2004; Montenegro and Pages, 2007). A negative effect of EPL on women employment and activity rate has also been reported in Giavazzi et al.(2013) and Cipollone et al. (2014).

In line with previous research on the demographic effects of EPL, we study the impact of the length of labour trials as a determinant of firing costs on the labour market outcomes of workers with different characteristics. The current paper differs from other previous empirical works in three ways. First, we use a within-country analysis, i.e. Italy. By focusing on the same legislative framework, we are able to better identify the effect of employment protection independently from other labour market institutional features and other country-wide characteristics that cannot as convincingly be controlled for in cross-country macro data. Second, this paper overcomes this literature because it exploits a measure of dismissal costs (courts' inefficiency) derived directly from the enforcement of legislation rather than of legislative provisions. In this way, our results contribute to the shaping of a more encompassing measure of employment protection. Third, it generates clear policy implications regarding the economic effects of reforms which aim to increase labour courts' efficiency and reduce the length of labour trials.

3 Institutional background and IV strategy

3.1 Length of labour trials and firing costs in Italy

Lengthy labour trials influence labour markets by affecting firms' dismissal costs. Such an effect is not symmetric on firms and workers. In Italy, as in many other countries, the duration of trials affects directly the monetary compensation that firms have to pay to a fired worker in case of adverse

court's ruling. According to the Italian Statuto dei Lavoratori passed in 1970, an individual dismissal is legal only when it satisfies a just cause, e.g. it can be justified by an objective reason (concerning the production activity for example) or subjective reasons, which are mainly related to misconduct on the part of the worker. The worker has always the right to appeal the firm's decision and the final outcome ultimately depends on the court's ruling on the specific case. If the worker does not appeal the firing decision, or if the dismissal is ruled fair, the legislation does not impose any compensation to the firm. In the latter case, a common practice in Italy is that the labour union pays the legal costs if the layoff is ruled fair; therefore a fired worker has always an advantage to take the case to court unless the firm does not compensate her properly in a private settlement.

Conversely, when the dismissal is ruled unfair, the judge imposes a specific compensation on the firm. In particular, for firms with more than 15 employees, to which Article 18 of the Statuto dei Lavoratori applies, the worker is entitled to a compensation equal to forgone wages, social security and health insurance contributions for a period from the date of the dismissal to the judicial settlement of the case (with a minimum of 5 months and with no upper limits), implying that firing costs directly increase with the duration of trials.[11] Moreover in some cases the worker can choose either to be reinstated in the firm or to be paid an additional financial compensation of 15 months of salary.[12]

Furthermore, the parties' options as long as the suit is not settled are not symmetric either. Should a worker find a new job while a trial is under way, she does not lose any right to her claims before the Court. On the contrary, firms' decisions to hire new workers before the court's final ruling may result in misadjustments in case of worker reinstatement. Moreover, also postponing adjustment decisions for the whole duration of the trial may be costly for firms and undermine its

[11] In firms below the 15-employees threshold, the unfairly dismissed worker must be compensated with a fixed severance payment that varies between 2.5 and 6 months of salary regardless of the length of the judicial procedure and with no obligation of reinstatement of the dismissed worker. Therefore, for firms below the 15-employees threshold trials duration plays no role in determining the extent of dismissal costs. In our analysis we do not exploit the 15-employees threshold to identify the effect of trial duration, since the size of employer is not relevant for non-employed workers. Firms with more 15 employees account for more than 65% of total employed workers in Italy.

[12] The recent reform of the Italian labour market (the Fornero's reform and more recently the Jobs Act), in force since July 18, 2012, has changed some of the rules related to the termination of the employment relationship. In particular, it has been restricted reinstatement to certain specific cases of unfair or unjustified dismissal and introduced an upper limit up to 24 months' salary to the compensation a firm has to pay in case of unfair dismissal also for firms with more than 15 employees. The change in legislation does not affect our estimates, since our data covers the period 2008-2010.

business and investment opportunities. Therefore, independently of the action taken by the parties during the trial, courts delays increase firms' firing costs univocally.

This asymmetric position of the employer and dismissed employee during the trial and after the court's decision translates into an analogue asymmetry in case the parties choose to pursue an off-court agreement. Indeed the compensation that firm would pay in case of adverse ruling is the upper bound of the range of the possible acceptable payments within an alternative dispute resolution; as the dependence of compensation on the trail duration is well known to all parties, it will be incorporated in workers' claims in the negotiations (Galdon-Sanchez and Guell, 2003; Garibaldi and Violante, 2005; OECD, 2013).[13]

Focusing on monetary dismissal costs only, Garibaldi and Violante (2005) calculate the *ex post* firing costs of an Italian firm with more than 15 employees that fires a blue collar worker with 8 years tenure as follows:

$$FC = nw + (\tau^s + \tau^h + \phi)nw + sp + lc \tag{1}$$

where n is the number of months needed to reach a court decision, w is the monthly gross wage, τ^s and τ^h are the social and health insurance contribution respectively, ϕ is the penalty rate on forgone contributions, sp are the mandatory severance payments and lc are legal costs.

The relationship between actual firing costs and trials duration implies that firing costs can vary considerably within country as a result of differences in courts' delays. For example, focusing on *ex post* firing costs and using the formula suggested by Garibaldi and Violante, the computed *ex post* firing costs are 26 months wages in Torino (with an average length of labour trials of 224 days) versus 163 months wages in Bari (with an average length of labour trials of 1366 days).[14] Hence, the cost of dismissing a worker for a firm located in the least efficient judicial district of our sample

[13] In a private settlement the parties can save any court penalties that may eventually be imposed by a judge and all the legal costs related to the trial. This implies that the agreed compensation is smaller than the total cost that the firm would pay if the firing decision is taken to court and ruled unfair. The worker then receives a compensation that lies between the legal severance payment and the (expected) cost had the case taken to court. See Malo (2000) for a model where firing costs are bargained privately between employer and employee before going to court in order to avoid legal costs.

[14] As shown in Table 1, Bari and Torino are respectively the districts with the worst and the highest quality of enforcement in our sample.

is more than 5 times higher than in the most efficient one.

The *ex post* firing costs in this example are estimated in the worst possible scenario, that is once the case has been taken to court and the judge's verdict is favorable to the worker. In Italy for example more than half of dismissal disputes are settled before going to court. However, trial delays play an important role in determining the extent of dismissal costs also when firms and workers find a satisfactory settlement out of court since the agreed compensation is related to the extent of the *ex post* firing costs as reported in formula 1. Using Garibaldi and Violante's computation,[15] it is possible to show that the agreed settlement varies significantly across judicial districts depending on the length of labour trial, with a off-court compensation of 47 months wages in Bari and 8 months wages in Torino. Taking into account the probability of off-court agreements and the fact that not all the individual layoffs are ruled unfair by the judge, the overall *ex ante* firing costs fall to 11 months wages in Torino and 68 months wages in Bari.[16] Although the overall *ex-ante* compensation is obviously lower than the *ex-post* compensation, the difference in costs between Torino and Bari remains unchanged in relative terms. This example shows that, quantitatively, labour trial length represents a large component of the total firing costs and therefore any employer who starts a firing procedure faces an expected dismissal cost that can be as high as 68 months of wages, depending on the judicial district where the firm is located.

3.2 Italian labour courts

In the Italian Judicial System, labour disputes are sued before the Labour Court, a division of the Civil Court specialized in dealing with labour suits. Labour courts' decision (first instance) can always be appealed before the Court of Appeal. While ordinary civil courts have a seat in the main towns of each province[17] in areas called "circondario" (167 in the Italian territory), the courts of appeal are located in the judiciary district. There are 26 districts in Italy, each grouping

[15] The off-court compensation is calculated by assuming that the employer and the dismissed worker bargain in a symmetric Nash fashion on the settlement and workers do not pay any legal cost if the firing is ruled fair by the court.

[16] In Italy the probability of reaching an off-court agreement is about 0.5. Among the cases brought to court, half of them is ruled unfair by the judge, requiring the firm to pay compensation (Galdon-Sanchez and Guell, 2003).

[17] In Italy, a province (provincia) is an administrative territorial unit at an intermediate level between a municipality (comune) and a region (regione).

several courts areas (circondari).[18] Court districts are generally located in the regions' main town (administrative centre) with the exception of four regions which are Lombardia (two districts), Puglia (two districts), Calabria (two districts) and Sicily (four districts).[19]

Until 1998, labour courts presided over disputes involving private sector workers only, while labour trials involving workers in the public sector took place before the administrative courts, according to the traditional view of "public administration supremacy".[20] In the late 90s a series of reforms aimed at bringing public sector employment under private law rules have passed. As a part of this legislation, the 1998 law established that labour suits concerning civil servants had to be settled within the ordinary labour courts.

Despite this process of alignment with private sector practices, there are still important differences between public and private employment protection regimes which can impact on labour trials. Although in principle the law concerning the termination of labour relations apply to both sectors, there are formal and *de facto* features which make dismissals in the public sector a much more complex and unlikely outcome. First, in case of dismissals for economic causes, while private sector workers terminate their labour relationships, civil servants usually enter in a procedure ("mobilità") aimed at placing them in a new public office[21]; this procedure aims both at improving the labour organization and curbing costs. Second, dismissals in public employment are also hindered by law provisions which impose a special responsibility on the public sector manager who, in case of unfair dismissal of a worker, can be personally liable for the economic damage caused by the dismissal. Moreover, the public sector manager himself has a different status as compared to the private sector manager. The latter can be fired if he has not been able to achieve the targets set by the firm or in case of loss of trust; on the contrary, the public manager has the same juridical status as the

[18] Although the labour trial takes place within the civil trial, there are important differences between the two procedures: the labour trial is faster and the judge has more inquiring powers as compared to the civil judge. The first instance and the appeal take place within the same district both for civil and labour trials: a case issued in the first instance by an ordinary Court may be appealed to the Court of Appeal of the same district to which the originating Court belongs. The last instance takes place before the Corte di Cassazione, which is based in Rome.

[19] Lombardia has the judicial districs of Milano and Brescia; Puglia has Bari and Lecce; Calabria has Reggio Calabria and Cosenza; Sicilia has Palermo, Catania, Caltanisetta and Messina (see Table A1, in the Appendix)

[20] Only since 1993 public sector employees have been appointed on a contractual basis and no longer as the result of an administrative deed of appointment.

[21] The labour relation can terminate only after after two years of "mobilità", if the prodedure has been unsuccesful or the worker has refused to move to the office.

employee and hence cannot be dismissed for poor performance or lack of trust. This provision abides by the concept of the "stability" of employment in the public sector, which is a major feature of Italian public administration.

3.3 The IV strategy

In the empirical analysis, we want to assess the causal effect of our indicator of labour courts inefficiency on labour market outcomes of individuals with different employability characteristics. In order to control for the potential endogeneity of the indicator of judicial inefficiency, we use two instruments for the duration of labour trials: (1) the number of ingoing suits in the appeal stage regarding labour disputes of civil servants (normalized to the number of judges in each district); (2) the turnover rate of judges in each judiciary district.[22]

The number of appeals of courts' decisions concerning civil servants' labour disputes is correlated with the length of legal disputes concerning private sector workers as it contributes to the overall bulk of disputes which are to be settled by (labour) courts: higher numbers of appeals both from private employees and civil servants imply more cases to be handled by courts and thus more congestion. At the same time, it does not suffer from reverse causality issues (e.g. poor labour outcomes in the private sector is not related to the incidence of labour disputes and to the distribution of the quality of trials concerning public sector employees), nor it is a factor that matters for firms' adjustment decisions since the litigation rates of public employees are disconnected to the (local) labour market dynamics of the private sector. On the contrary, due to higher degree of job security enjoyed by civil servants, the risk of termination for economic reasons and/or for workers' low productivity and misconduct is dramatically reduced in the public sector, which makes the characteristics and determinants of labour trials wholly different in the two cases.[23]

A possible source of bias could still arise if the appeal rate of courts' decisions on to civil servants' labour disputes were driven by district-level (unobserved) variables which also affect our dependent variables. This could happen, for example, if the appeal rates reflect the quality of courts' decisions

[22] See Gianfreda and Vallanti (2017) for a discussion and application of a similar IV identification strategy.

[23] The segmentation between private and public sector employment due to the high degree of job security in the latter also implies that jobs in the private sector cannot be considered as an outside option for civil servants.

and therefore is correlated with the quality of (local) institutions. However, in this case we should also expect a significant degree of correlation between the rate of appeal for civil servants suits and that for private sector workers since both types of trials are handled by the same court at district level. However, this does not seem the case. Figure 1 shows that the both the appeal rates of courts' decisions for private and public workers disputes and the number of appealed cases are unrelated across court districts, the correlation rate between the two variables being not statistical significant.[24]

FIG.1 AROUND HERE

Our second instrument is the judge turnover rate at district level, that is the voluntary or mandatory transfer of a judge to another court district (and his replacement). In each court district, a transfer involves the movement of two judges: the judge who leaves his current position (outbond flow) and the judge who fills a vacancy (inbound flow). Both the inbound transfer of a new judge and the outbound transfer of an incumbent judge represent an (exogenous) shock for the internal organization and therefore affect the organizational performance of the court. First, the outbound and inbound flows may not occur simultaneously as some positions may remain vacant. Second, delays in the process managing the backlog of outbound judges and the existence of asynchrony between outbound and inbound transfers can produce delays to court activity. Therefore, judge turnover is likely to be correlated with the length of trials by affecting courts' congestion within that district.[25] This instrument also satisfies the exclusion restriction as the transfer of judges from one office to another is the result of a number of decisions taken by agents at different levels of the judiciary hierarchy who respond to different sets of incentives. In Italy, judges can voluntarily move from one office to another after three years of mandate, and, in order to guarantee their independence, the law prescribes their transfer after ten years. The transfer generally follows a

[24] In the empirical analysis we use the number of first istance judges' decisions concerning labour disputes of civil servants that are appealed before the court of appeal (normalised to the number of judges) as an instrument. Results are remarkably similar when we use the appeal rates, that is the percentage of trial courts' decisions for civil servants' disputes which are appealed before the court of appeal.

[25] There is a large empirical evidence on the detrimental effects of turnover on organizational performance (Arthur 1994; Koys 2001; McElroy, Morrow, and Rude 2001; Batt 2002; Detert et al. 2007; Hausknecht, Trevor, and Howard 2009; Hausknecht and Trevor 2011 Hancock et al., 2013). For a general discussion of on judge turnover and courts delays in Italy see Coviello et al. (2009). A more formal empirical evidence is provided by Guerra and Tagliapietra (2016) for Italy and Rosales-López (2008) for Spain.

three-step procedure: i) the publication of vacant positions to be filled ii) the request of the judge who is willing to be transferred and occupy the vacant position; iii) the approval by the self-governing body of the judiciary, the Consiglio Superiore della Magistatura (CSM). Vacancies within judicial districts primarily arise due to transfers of judges to others district or to other offices, for example career advancements, or to retirement. Once a vacant position is created in given district, the judge who is willing to be transferred has to apply to the CSM; as a general rule, judges cannot be transferred to a different assignment or district without their consent.[26] Once applications are received, the CSM decides on the basis of a competitive procedure among candidates. The criteria for the CSM collegial decision are the following: competence, which is assessed on the basis of the functions so far carried out and the judge's capacities; the judge's health status and his/her family members' (offsprings, spouse, parents and brothers/sisters if leaving with the judge, in some cases relatives and relatives-in-law); family ties; merit (which also depends on the fact that in the past the judge has occupied vacancies for which an urgent procedure had been set up or vacancies for which no application had been received); seniority.[27] Therefore, the complexity of the transfer procedure, to which the decisions taken by different agents with different incentive contribute, is such that the turnover rate within each district ends up to be independent from (local) factors that might also affect firm-level outcomes.

4 Data and descriptive statistics

4.0.1 Courts' data

We draw annual data on labour trials for private and public sector workers at district level from the Italian Ministry of Justice dataset.[28] In both cases, data are available on the flows of suits initiated

[26] An important feature of the Italian judicial system is the principle of "inamovibilità", according to which a judge can be transferred to a different Court or to a different assignment only upon his/her consent. The principle of "inamoviblità" is a constitutional provision aiming at assuring the independence of the judiciary, which could be undermined should a judge be compelled to quit his/her activity for suspension or transfer. There are some ecceptions namely the need to cover vacancies in cases established by law, as disciplinary actions or for reasons of "incompatibilità ambientale", i.e. the judge is considered incompatible with the workplace. The judge can appeal the CSM decision in all cases.

[27] See the Circolare 15098 of November 30, 1993 of Consiglio Superiore della Magistartura and subsequent amendments.

[28] Bianco et al. (2005), Gianfreda and Vallanti (2017) and Coviello et al. (2018) use similar data to estimate the effetcs of judicial inefficiency on credit markets, firms' productivity and on public work performance respectively.

during the year ("newly filed"), the flows which are closed every year ("closed") and the stock of pending suits every year ("pending") in first instance (FI) and in the appeal stage (A) for each of the 26 Italian judiciary districts. Following a formula used by the Ministry of Justice and the Italian National Institute of Statistics (ISTAT), the average number of days of trial can then be calculated as the ratio between the stock of cases (pending cases at the beginning plus pending cases at the end of the year) and the incoming plus outgoing flows (newly files plus closed).[29]

This formula allows us to estimate the days of trial within each stage of judgement. In order to take account of the overall days of trial for the first instance and the appeal stages using the same criterion, one should sum all the pending cases at the beginning and at the end of the year in the two stages and divide it by the sum of the inflows and outflows in the two stages. However, this procedure has the drawback that it does not take into account the sequentiality of the two trials, i.e. the fact that a suit which is closed before the courts of the first instance case can enter or not the appeal phase.

In order to account for the sequentiality of the two trials, we sum the average days of trial for the first instance and for the appeal (calculated using the Ministry formula), where the appeal days are weighted by the number of ingoing suits at the appeal stage relatively to the number of outgoing suits at the first stage:

$$IndexA = DLT_{dt}^{FI} + DLT_{dt}^{A} \times S_{dt} \tag{2}$$

where DLT are the days of labour trials in the first instance stage (FI) and in the appeal stage (A) in district d at time t and S is the ratio of newly filed suits before the appeal courts in district d at time t on the suits closed at first instance in district d at time $t-1$. S ranges from 0 to 1 and takes

[29] Since data on the actual duration of legal proceedings are not available, the Ministry of Justice uses information on caseflows to calculate an index for trial duration as follows:

$$DLT_t = \frac{P_{t-1} + P_t}{F_t + C_t} \times 360$$

where P_{t-1} and P_t are the number of cases pending at the beginning and at the end of the year, respectively; F_t is the number of new cases filed during the year; C_t is the number of cases that reached the final judgment during the year. This measure is widely used in the economic literature in cross-country and with-in country studies. See, for example, Djankov et al. (2003) for a cross-country study; Jappelli et al. (2005) and Giacomelli and Menon (2012) on the effect of Italian courts' efficiency on the performance of credit market and firm size respectively.

into account the fact that not all the suits which are decided upon by the Court of first instance reach the appeal courts. Therefore, S can be interpreted as a proxy for the probability that the first instance judgment is appealed.[30]

From the Ministry of Justice database we also draw annual data on the length of civil trials and on the rate of appeal in labour courts of trials involving civil servants, i.e. the ratio of incoming suits in the appeal stage on the outgoing suits in the first instance case.

We combine the data from the Ministry of Justice with the data provided by the Consiglio Superiore della Magistratura (CSM). The CSM database contains information on the actual and statutory number of judges and the number of inbound and outbound judges for the period 2008-2010. Judges turnover at district level is calculated as in Guerra and Tagliapietra (2015) according to the following formula[31]:

$$Turnover = \frac{100x(number\ of\ outbound\ judges + number\ of\ inbound\ judges)}{number\ of\ statutory\ judges}$$

Table 1 reports some descriptive statistics concerning the Labour Courts.

TABLE 1 AROUND HERE

Columns 1-2 report our indicator of judicial efficiency in relation to private sector labour trials for the 26 judicial districts, which are ranked from the most to the least efficient. The data show a great territorial heterogeneity in the duration of trials; for example, the length of trial in the least efficient district (Bari, 1366 days) is more than five time longer as compared to the most efficient district (Torino, 224 days). The time-series variation is also substantial. Within each district, the standard deviation normalized to the mean ranges from 0.04 (in Cagliari) to 0.26 (in Caltanisetta), and the average within standard deviation is around 0.11. This evidence suggests considerable

[30] Our index does not consider the additional days of trial (which add to the total length) due to the possibility that suits are discussed before the Supreme Court. This is because at this stage no heterogeneity could be observed at district level; hence days of trial calculated according to our index can understate the effective length of trial. Also, our index does not take into account the period between the first suit and the appeal. However, the time which elapses between the two stages also depends on the decision of the party who appeals, which is not related to the courts' efficiency.

[31] This measure has been widly used in the empirical literature to assess the consequences of workers replacement on firms' performance (sse among the others Burgess et al., 2000a,b; Baron et al., 2001; Park and Shaw, 2013; Murmann, 2017). We obtain similar results when we use alternative definition of turnover. Results are available upon request.

heterogeneity in law enforcement both cross-sectionally and in the time-series. In columns 3-4 we report the average turnover rate in the Italian judiciary districts. The turnover rate exceeds 30% on average in our sample. Again both the between-group and within-group standard deviations are not negligible (0.23 and 0.17 of the mean respectively), implying territorial heterogeneity in the inflows and outflows of judges and also some variation over time within each district. Finally, columns 5-6 show the number of appeals of labour suits involving public sector workers normalised by the number of judges; here the extreme values are recorded in Caltanisetta (30.7 appealed cases) and Catanzaro (28.3), while both Torino and Bari are just below the average with 7 and 9 appealed cases respectively.

4.0.2 Labour force data

We draw individual data on the Italian workforce from the EU Labour Force Survey, from which we have annual information on individuals aged between 15 and 64 years in 5-year age bands (15-19, 20–24, 26-30 etc.) at regional level.[32] The dataset contains individual data on a number variables such as sex, education, age, type of employment (industry and occupation), type of contract, etc. We restrict our sample to all individuals (with the exclusion of public sectors workers) aged 20-64 [33] and to the years 2008 to 2010.[34] The final dataset consists of around 1 million observations.

Table 2 and Table 3 report some descriptive statistics of our sample in relation to individuals' labour market status - i.e. the share of employed workers, active individuals, workers having a permanent job and long term unemployed workers - by sex, age, and education. We define three age groups, from 20 to 30 (young), from 30 to 54 (middle-aged) and from 55 to 64 (old). The education

[32] Because the labour force survey provides information by region, we aggregate the judicial data by region in order to match the legal variables with the individual variables. In the paper we will refer to judicial districts and regions interchangeably. The geographical distribution of judicial districts is reported in Table A1 in the Appendix. In regions with more than one judicial court we take the average duration of trials.

[33] We restrict the analysis to individuals who concluded compulsury education. In Italy education is compulsory until the age of 16. Therefore, we exclude from our sample those individuals in the age group 15-19. We also exclude public administration employees. Thought public sector contracts are regulated by private law, nevertheless dismissal procedures for public sector employees are quite different from those in the private sector.

[34] LFS industry classification of 2007 is not readily comparable with the classification provided for the next years given the change in NACE classification to Nace Rev 2. Since in allspecifications we want to exclude from the analysis Public administration employees and in some specifications we control for industry dummies, we restrict our analysis to the period 2008-2010. Our main results are unaffected when we include data from 2007 (and drop industry dummies).

levels are classified according to the 1998 ISCED codes – respectively low, medium and high educated workers. In our sample 65% of the men are employed, while for women the employment rate is 43%. Within the employed population, temporary jobs are more concentrated among youths and women. The incidence of temporary employment in the sample is around 13%, and it rises to 15% and 31% for women and young workers. Around 10% of the population is unemployed and unemployment tends to be lower and shorter (less than a year) for men and high educated workers. A well-known fact for Italy is the striking difference in the participation rate of men and women: more than half of the women (52%) is inactive, while inactivity concerns less than one third (29%) of the male population.[35]

TABLE 2 AND TABLE 3 AROUND HERE

5 Empirical model

5.1 Empirical specification

To investigate the effects of labour courts' delays on labour market outcomes we estimate a linear probability two-stage least squares model (IV-LPM).[36] Our dependent variables (*output*) are the following: *employed*, taking the value 1 for employed individuals;[37] *active*, taking the value 1 for individuals who are either employed or unemployed; *permanent*, taking the value 1 for individuals with a permanent job;[38] *long term unemployed*, taking the value 1 for individuals who are unemployed for more than a year (against being unemployed for less than a year). We interact the duration of labour trials (*Delay*) with some relevant individual characteristics (gender, age and education) in order to assess whether the increase in firing costs induced by courts' inefficiency affects

[35] This is in line with other descriptive results on temporary employment reported, among the others, in the OECD (2002), Petrongolo (2004) and Cipollone et al (2014).

[36] We choose to estimate a linear probability model because all covariates in Eq. (3), with the exclusion of civil trials length and regional income, are dummy variables so the model is almost fully saturated. It is well-known that in the extreme case of a fully saturated model, i.e. one where all independent variables are discrete variables for mutually exhaustive categories, the linear probability model is completely general and the fitted probabilities lie within the interval [0, 1]. In addition the linear probability model also has the advantage of allowing a straightforward interpretation of the regression coefficients. Moreover, to take into account the occurrence of repeated observations of regions-year, we allow standard errors to be clustered at the region-year level. In table A2 of the Appendix we also present results of a Probit model that are qualitatitare the same as those in the IV-LPM, while OLS results are shown in table A3.

[37] The effect of courts' delays on employment is estimated using both the whole sample of individuals and the restricted sample of active workers.

[38] The analysis on permanent jobs is carried out for the sample of active individuals and for the restricted sample of employed workers.

demographic groups differently.

Our model specification is as follows:

$$\begin{aligned} Y_{ijt} &= a_1 Delay_{jt} + a_2 Delay_{jt} \times Male_{ijt} + a_3 Delay_{jt} \times age30544 \\ &+ a_4 Delay_{jt} \times age5564 + a_5 Delay_{jt} \times e2_{ijt} + a_6 Delay_{jt} \times e3_{ijt} \\ &+ \boldsymbol{\beta}\prime \mathbf{X}_{ijt} + \delta_j + \lambda_t + \varepsilon_{ijt} \end{aligned} \tag{3}$$

where, for each individual i aged between 20 and 64 in diistrict j at time t, $Delay$ refers to the length of labour trials (in log) in district j at time t, $Male$ is a dummy taking the value of 1 for male individuals, $age3054$ and $age5564$ are dummies which take the value 1 for ages in the ranges 30-54 and 55-64 respectively (20-34 is the base group), $e2$ and $e3$ captures the education level – classified according to the 1998 ISCED codes – respectively medium and high level of education (low level of education is the base group). The reference individual is therefore a women aged 20-30 with a low level of education. Finally, the vector X includes the (non interacted) demographic dummies as well as additional controls, i.e. the log of the region per capita GDP (gdp) and the log of the length of civil trial at district level ($Civil$). δ_j and λ_t are respectively district dummies and year dummies.[39]

The length of labour trial ($Delay$) is instrumented with the appeal rate of public sector employees ($appeal$) and the turnover rate of judges ($turnover$) and all the interaction terms in equation 3 are instrumented by interacting $appeal$ and $turnover$ with each group characteristics.[40]

5.2 Empirical results

Table 4 shows the impact of courts' delay on the individuals' labour market status using the set of instruments discussed in the previous section albeit without interactions with the demographic characteristics.

TABLE 4 AROUND HERE

[39] We also check the robusteness of our results to the inclusion of district-by-year dummies which allow to control for all district-specific time-varying factors (for example, the quality of local infrastructure). This set of dummies absorbs the main effect of trials' length ($Delay$), as this variable only varies by region and time. However, the coefficients on the interactions remain remarkably unchanged. Results are available upon request.

[40] Results from the OLS estimates (ignoring endogeneity) are reported in Table A3 in the Appendix.

As predicted by the theory, the sign is negative for the employment rate (columns 1 and 2), the activity rate (columns 3), and the incidence of permanent workers (columns 4 and 5) while it is positive for the duration of unemployment (column 6); however it is never statically significant.

In the next set of regressions we test whether labour courts delays have different effects across worker types by interacting our variable of interest with the gender, the age and the education dummies. Results are reported in Table 5.

TABLE 5 AROUND HERE

Results in Column 1 suggest that the length of labour trials negatively affects the employment rate but the effect varies considerable with the characteristics of individuals. Consistently with the theoretical predictions, the negative effect is relatively stronger for women vs. men, young vs. middle-aged and elderly individuals and decreases with the level of education. The coefficients of the interactions are highly significant and the effects are robust to the inclusion of time, region dummies and other time varying controls at region level. The results on employment hold-up when we restrict the sample to active individuals (column 2). The relative negative effect of courts' delays on women is lower when we look at active workers; this finding is consistent with the fact that, in presence of high firing costs, employment opportunities for (prime age) women are significantly reduced because they are more likely than men to move between employment and inactivity due to the competing demands of work and family life (OECD 2004; Heckman and Pages 2000, Cipollone et al, 2024). Our findings on employment are reinforced by column 3, which shows that long trials decrease the activity rate of women, low skilled and younger individuals. Here again higher firing costs induced by courts inefficiency keep more skilled and elderly workers in activity relatively to the other groups.

In the last column (column 4), we investigate whether labour trial delays affect the duration of unemployment. The results refer to the likelihood of being long term (a year and more) against being a short term (less then a year) unemployed. According to theory, in presence of adverse selection, firing costs will lengthen jobless spells since firms will discriminate against unemployed job seekers. Our findings are consistent with these predictions. The positive effect of court delays

(and then firing costs) on long term unemployment is larger for less educated individuals. Moreover, while the effect of courts' delays on the share of long term unemployed is not statistically significant for young individuals, the impact is positive and significant for the other age groups, and the effect increases for those aged 55-64.[41] This result is in line with the theoretical predictions in Canziani and Petrongolo (2001) who show that, in presence of high firing costs, the unemployment stigma increases with age. This implies a lower re-employability for old unemployed workers and then a longer unemployment duration for these groups of workers.

We next look at the effects of courts' delays on permanent employment of different demographic groups. Results are reported in Table 6. In column (1) we consider the whole sample of active workers, while in columns (2) to (4) we restrict the sample to wage and salary workers and estimate the effect of trials length by controlling for a series of occupation and industry dummies. Industry and occupation dummies allows to take into account compositional effects across regions. If, for example, regions with longer labour trials also have a higher degree of specialization in sectors where temporary jobs are used more frequently (e.g. tourism and construction sectors), than failing in controlling for sector may produce a spurious negative relationship between permanent employment and courts' inefficiency. Moreover, it may be the case that some demographic groups are more observed in occupations where temporary jobs are more frequent for reasons other than firing costs. Of course a change in firing costs may also lead to a change of the relative size of an industry or occupation type, if some industries or occupations suffer more the change in the dismissal costs. In the case the compositional effect is part of the impact we want to estimate.[42] We therefore show the estimated coefficients for different combinations of industry and occupation dummies.

TABLE 6 AROUND HERE

Consistently with the results in Kahn (2007), table 6 shows that firing costs induced by trial delays reduce the incidence of permanent jobs. Moreover, the negative effect of accrued rigidity is

[41] The results on age interactions may reflect schooling opportunities for young workers. Therefore, we re-estimate the basic models by excluding those individuals aged 20-25. The results do not change substantially from those for the full sample. Results are available from the authors upon request.

[42] Several empirical studies show that dismissal costs have a lareger negative effect on industries that have a relatively high "natural" propensity to adjust their human resources through layoffs, due industry-idiosyncratic technological and market-driven factors (see among the others Bassanini et al, 2009; Cingano et al., 2010; Gianfreda and Vallanti, 2017).

stronger for women and decreases with the level of education. A less expected result is the estimated effect by age group. In line with theory, the interaction term is positive and significant for elderly workers, nevertheless the differential effect is negative and statistically significant for prime age workers (30-55 years old), suggesting that court delays lead to a larger substitution of temporary jobs for permanent jobs for middle-aged workers.

The coefficients on delays and its interactions decrease when we control for industries and occupations. This confirms the fact that a change in dismissal costs can affect some industries/occupations more than others, leading to a change of the relative size of sectors and to a misallocation of employment.

To further investigate the relationship between court delays and the incidence of permanent jobs by age groups, we re-estimate the differential effect of court delays on permanent employment in different age groups by using a more refined age classification. The empirical model includes seven age groups in the ranges 30-34, 35-39, 40-44, 45-49, 50-54, 55-59 and 60-64 (20-29 is the omitted age category as in the previous regressions). The results are reported in Table 7, which considers the same specifications as in Table 6 and for each specification we report the results for all wage and salary workers (columns 1-3) and for male workers only (columns 4-6).

TABLE 7 AROUND HERE

The interaction effects are now not significant in every age group except for the age group 30-34, suggesting that labour trial length is associated with a relatively greater incidence of temporary employment for this category of workers. Interestingly, this effect disappears when we restrict the sample to male workers. In this set of regressions (columns 4-6) the coefficient on the 30-34 group is halved and is never statistically significant. These last results confirm that firms are effectively being encouraged to use temporary contracts as a way to circumvent rigid dismissal rules on permanent contracts, with a stronger effect on women in the 30-34 age group who generally are more involved in family care and have a greater tendency to entry and exit the labour force.[43]

Overall these results reinforce the theoretical conclusion that an increase of employment adjust-

[43] See Cipollone at all (2014).

ment costs does not penalize all workers in the same way, but there are categories of individuals who pay more for labour market rigidities.

The statistics to test the validity (relevance) of the instrument, are given at the bottom of each tables and the coefficients of the instruments of the first-stage regressions are reported in Table 8.[44] The Kleibergen-Paap Wald rk F statistic[45] and the Hansen J statistic easily rejects the null hypothesis of weak instrument(s) in all specifications suggesting that the instruments and their interactions with group dummies are adequate to identify our equations. Moreover, in the first stage equation the two instruments turns to be positively and significantly correlated with the duration of labour trials.

TABLE 8 AROUND HERE

The fact that courts' activity has an immediate causal effect on firms' decisions and workers' labour market status might seem surprising at first sight. Nevertheless, it is important to consider that the actual duration of trials in a given year is not independent from the bulk of pending suits (and their characteristics) that have been initiated and not concluded in the preceding year(s). Firms can therefore easily infer the expected duration of trials on the basis of the number and characteristics of outstanding disputes (inherited from the previous years) at local (district) level and on other publicly available information, such as, for example, courts' scheduling of comparable suits. We also address this issue empirically by using the out of sample value of trials length in 2007 and regressing it on individuals' labour market status after two and three years, therefore restricting the time spam of our sample to 2009-2010. Table 9 reports the results. We find that the trial length in 2007 interacted with the demographic characteristics keeps the same sign and magnitude as in the baseline specifications.[46] Moreover, the tests on instruments are still valid, reassuring on the validity of our identification strategy.

TABLE 9 AROUND HERE

[44] Table 8 reports the first stage regressions obtained using the full sample of individual in the regressions. First stage results and statistics on the restricted samples (wage and salary workers as in column 5 of Table 6 and unemployed workers as in Table 7) are very similar and available from the authors upon request.

[45] Kleibergen-Paap Wald rk F statistic is a generalization of Cragg-Donald weak instruments test to the case of non-i.i.d. errors.

[46] In this set of regressions courts' delays in 2007 is time invariant, therefore the non-interacted effect is absorbed by the district fixed effects.

5.3 Some quantifications

We finally assess the magnitude of the estimated effects by computing the change in the differences of labour market outcomes of workers that would result from increasing the (average) efficiency of the Italian labour courts of 1 (between-districts) standard deviation, which corresponds to a decrease of the average trials length of around 37%. Figure 2 reports the impact of such a change (along the 95 percent confidence interval) on employment and activity rates, permanent employment and long term unemployment for different types of workers by using the results in Tables 5 and 6.

FIGURE 2 AROUND HERE

Beginning with the differential effects by gender, a reduction of courts' delays by 37% has a positive effect on the employment rate of women which is 3.3 percent points higher than on men, implying a corresponding reduction of the employment gap between women and men which accounts for almost 15% of the gender employment gap in Italy. According to our estimates, the reduction in the employment translates into a similar increase in women activity rate and thus a decrease in the corresponding gender gap. This result suggests that lower firing costs for individuals with a weaker attachment to work (typically women) have a positive effect on employment rates because they increase job creation by firms and, at the same time, enhances participation to the labour market. Consistently, the gender gap in unemployment and permanent employment is reduced by 1 percentage point and 1.5 percentage points, respectively. Finally, reducing the length of labour trials by 37% would lead to a reduction of long term unemployment of women relatively to men of more than one percentage point.

Similar results are found when we compare the labour market gap between young and middle aged/elderly workers. Decreasing labour trials' duration has the effect of reducing youth employment and the participation gap by 1.7 percentage points and 0.7 percentage points respectively. The unemployment gap is reduced by more than 5 percentage points. As already discussed, faster labour trials (and then lower firing costs) decrease the incidence of long term unemployment for middle aged (3.6 percentage points) and elderly workers (9.8 percentage points) relatively to young individuals.

Turning to skill characteristics, the decrease of courts' delays significantly reduces the labour

market gap between low educated workers and those with higher levels of education. The employment gap of low skilled decreases by 1.4 percentage points relative to medium skilled and 5.8 percentage points relative to high skilled workers. The effect on the participation rate is of the same magnitude. The change in the incidence of permanent jobs of low skilled workers is 3 percentage points relative to medium skilled and more than 4 percentage points relative to high skilled workers. Finally, the likelihood of being a long-term unemployed for low skilled workers decreases by up to 6 percentage point relative to the other skilled groups.

6 Conclusions

We show that the labour market responds to firing costs which are imposed by lengthy labour trials. Our analysis exploits courts' delays as a source of cross-section and time variation of dismissal costs and shows that, focusing on different regions of the same country, i.e. where the same formal EPL rules hold, labour trial length hinders the employment rate for specific categories of workers, i.e. women, young and low skilled individuals, while increasing the inactivity rate of the same groups. Furthermore, long duration of trials reduces the likelihood of having a permanent occupation and induces a shift from short term to long term unemployment.

Our study confirms well established results on the effects of EPL on employment patterns as for example in Kahn (2007), implying that trials length and, more generally, courts activity has an impact on labour market outcomes which goes in the same direction as explicitly written rules.

Our findings can be explained by two factors, i.e. the dependence of firing costs on the time which elapses from the firing to he labour courts' final decision - which is on turn related to the structure of EPL rules - and the prolonged uncertainty produced by slow trials. As a result, the strictness of EPL should not be assessed only on the basis of legislative provisions but it should also be evaluated with regard to the institutional environment at large. Future studies on EPL should hence focus on the identification of non written institutional factors capable of influencing firing costs. Moreover, labour market reforms aimed at reducing dismissal costs should also consider the role played by courts in enforcing them as well as how these reforms interact with the complexity

and length of legal procedures, the latter being an important dimension of actual EPL.

Finally, our study highlights some important economic consequences of judicial inefficiency, thus contributing to the identification of the economic costs of long trials. Reforms aiming at streamlining trial procedures are to be considered also in their capacity to remove obstacles to the economic performance of a country.

Compliance with Ethical Standards: The authors declare that they have no relevant material or financial interests that relate to the research described in this paper.

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Table 1: Length of labour trials [(1)], Judges' turnover rate, number of appeals from the public sector workers, by judicial districts

	Courts' delays[(3)]		Judges' turnover[(4)]		Number of PA appeals[(5)] (normalized to judges)	
District[(2)]	mean	sd	mean	sd	mean	sd
Torino	223.90	23.51	0.30	0.02	7.48	1.08
Trento	293.24	36.63	0.17	0.05	7.25	1.94
Milano	357.94	16.87	0.30	0.03	6.68	0.51
Genova	434.98	8.67	0.29	0.04	5.20	0.05
Campobasso	507.24	100.02	0.45	0.15	-	-
Brescia	524.36	50.86	0.34	0.02	4.62	0.15
Firenze	619.38	60.26	0.33	0.08	8.60	2.35
Trieste	676.23	41.91	0.36	0.05	8.56	0.59
Catanzaro	753.95	84.16	0.42	0.07	28.32	3.04
Bologna	755.97	40.52	0.36	0.04	4.98	0.82
Palermo	768.87	41.76	0.39	0.10	19.73	5.41
Venezia	803.63	72.60	0.31	0.02	7.67	0.94
Roma	830.27	88.77	0.34	0.06	11.88	1.47
Reggio Calabria	847.52	6.36	0.49	0.08	13.74	0.96
L'Aquila	858.74	42.97	0.41	0.02	19.77	2.62
Ancona	861.63	49.85	0.39	0.08	15.02	4.05
Salerno	879.45	24.00	0.40	0.07	9.61	1.06
Napoli	911.25	45.85	0.35	0.03	11.50	1.16
Caltanissetta	1056.77	146.23	0.44	0.06	30.75	14.81
Perugia	1071.23	58.69	0.27	0.01	12.81	5.86
Cagliari	1096.97	52.44	0.15	0.04	9.91	1.41
Potenza	1135.91	110.68	0.43	0.08	17.67	8.32
Lecce	1168.42	229.80	0.22	0.07	8.31	2.14
Messina	1277.56	126.14	0.40	0.07	17.81	5.95
Catania	1328.29	59.46	0.32	0.09	9.18	1.62
Bari	1366.76	346.78	0.34	0.07	9.33	2.63
Average[(6)]	823.48	75.61	0.34	0.06	12.57	2.84
Overall sample[(6)]		307.06		0.08		8.02

Note. [(1)] Excluded the appeal stage before the Supreme Court. [(2)] Districts are ordered from most efficient to least efficient. [(6)] The row *Average* reports the sample mean and the within-district (average) standard deviation. The O*verall Sample* reports the between-district standard deviation.
Source: [(3)] [(5)] Source: Ministry of Justice website and authors' calculations. [(4)] CSM database and authors' calculations.

Table 2: Sample composition and labour market status within demographic groups (2008-2010)

		Sex		Age			Education			Total
		men	women	20-29	30-54	55-64	low	medium	high	
Labour market status										
employed		247,986	209,775	71,724	335,676	50,361	170,985	214,159	72,617	457,761
	%	*54.2*	*45.8*	*15.7*	*73.3*	*11.0*	*37.4*	*46.8*	*15.9*	-
permanent		219,443	177,692	49,294	301,148	46,693	147,658	187,416	62,061	397,135
	%	*55.3*	*44.7*	*12.4*	*75.8*	*11.8*	*37.2*	*47.2*	*15.6*	-
unemployed		26,023	26,085	18,073	31,024	3,011	24,138	21,855	6,115	52,108
	%	*49.9*	*50.1*	*34.7*	*59.5*	*5.8*	*46.3*	*41.9*	*11.7*	
long-term unempl.		12,108	13,215	8,203	15,510	1,610	12,394	10,404	2,525	25,323
	%	*47.8*	*52.2*	*32.4*	*61.2*	*6.4*	*48.9*	*41.1*	*10.0*	-
active		274,009	235,860	89,797	366,700	53,372	195,123	236,014	78,732	509,869
	%	*53.7*	*46.3*	*17.6*	*71.9*	*10.5*	*38.3*	*46.3*	*15.4*	-
Total sample		399,348	505,309	165,240	517,761	221,656	432,680	365,453	106,524	904,657
	%	*44.1*	*55.9*	*18.3*	*57.2*	*24.5*	*47.8*	*40.4*	*11.8*	-

Source: EU Labour Force Survey and authors' calculation

Table 3: Labour market status by demographic groups (2008-2010)

	Sex		Age			Education			Total
	men	women	20-34	35-54	55-64	low	medium	high	
Labour market status									
employed	247,986	209,775	71,724	335,676	50,361	170,985	214,159	72,617	457,761
employment rate (%)	62.1	41.5	43.4	64.8	22.7	39.5	58.6	68.2	50.6
permanent (%)	*88.5*	*84.7*	*68.7*	*89.7*	*92.7*	*86.4*	*87.5*	*85.5*	*86.8*
temporary (%)	*11.5*	*15.3*	*31.3*	*10.3*	*7.3*	*13.6*	*12.5*	*14.5*	*13.2*
unemployed	26,023	26,085	18,073	31,024	3,011	24,138	21,855	6,115	52,108
unemployment rate (%)	9.5	11.1	20.1	8.5	5.6	12.4	9.3	7.8	10.2
long term (%)	*46.5*	*50.7*	*45.4*	*50.0*	*53.5*	*51.3*	*47.6*	*41.3*	*48.6*
short term (%)	*53.5*	*49.3*	*54.6*	*50.0*	*46.5*	*48.7*	*52.4*	*58.7*	*51.4*
active	274,009	235,860	89,797	366,700	53,372	195,123	236,014	78,732	509,869
activity rate (%)	68.6	46.7	54.3	70.8	24.1	45.1	64.6	73.9	56.4
Total sample	399,348	505,309	165,240	517,761	221,656	432,680	365,453	106,524	904,657

Source: EU Labour Force Survey and authors' calculation

Table 4: The effect of labour trial delays on the labour market status (IV -LPM)

	employed vs. non-employed	**employed vs. unemployed**	**active vs. non-active**	**permanent vs. temp & unemp**	**permanent vs. temporary**	**long-term unempled**
	(1)	(2)	(3)	(4)	(5)	(6)
delay	-0.013	-0.031	-0.006	-0.005	-0.023	0.089
	(0.029)	(0.033)	(0.031)	(0.043)	(0.039)	(0.126)
male	0.214	0.03	0.226	0.066	0.046	0.067
	(0.001)***	(0.001)***	(0.01)***	(0.001)***	(0.001)***	(0.004)***
age3044	0.244	0.116	0.195	0.274	0.215	0.045
	(0.001)***	(0.001)***	(0.005)***	(0.002)***	(0.002)***	(0.005)***
age4564	-0.144	0.158	-0.242	0.347	0.255	0.091
	(0.002)***	(0.002)***	(0.022)***	(0.002)***	(0.002)***	(0.010)***
ed2	0.140	0.040	0.128	0.065	0.034	-0.028
	(0.001)***	(0.001)***	(0.005)***	(0.001)***	(0.001)***	(0.005)***
ed3	0.245	0.053	0.237	0.049	0.003	-0.100
	(0.002)***	(0.001)***	(0.013)***	(0.002)***	(0.002)***	(0.007)***
regional gdp (log)	0.149	0.303	-0.026	0.197	-0.058	-0.847
	(0.064)**	(0.073)***	(0.084)	(0.095)**	(0.088)	(0.271)***
civil justice delays	0.023	0.002	0.028	-0.012	-0.016	0.105
	(0.020)	(0.021)	(0.027)	(0.026)	(0.024)	(0.090)
obs.	904657	509869	904657	509869	457761	52108
region FE	yes	yes	yes	yes	yes	yes
year FE	yes	yes	yes	yes	yes	yes
Instruments						
Underid test [(1)]	23451.1	8544.5	11611.3	8544.6	7056.4	1569.7
p-value - chi2(2)	0.000	0.000	0.000	0.000	0.000	0.000
Overid test[(2)]	0.318	0.064	0.017	0.373	0.240	0.775
p-value - chi2(1)	0.572	0.800	0.884	0.541	0.624	0.379

Note: IV-LPM model with the number of appeals of PA sector and judges' turnover as instruments. Clustered (region year) standard errors in parenthesis. All specifications include district per capita income, civil trial length, district and year dummies. [(1)] Kleibergen-Paap rk LM stat. and [(2)] Hansen J stat. ** significant at 5%; *** significant at 1%.

Table 5. The effect of labour trial delays on the labour market status by demographic groups (IV -LPM)

	employed vs. non-employed	**employed vs. unemployed**	**active vs. non-active**	**long-term unempled**
	(1)	(2)	(3)	(4)
delay	-0.203	-0.157	-0.197	0.173
	(0.038)***	(0.047)***	(0.053)***	(0.203)
delay x male	0.090	0.023	0.128	-0.014
	(0.017)***	(0.007)***	(0.023)***	(0.034)
delay x age3055	0.045	0.140	0.020	0.097
	(0.018)**	(0.030)***	(0.017)	(0.029)***
delay x age5564	0.141	0.126	0.159	0.264
	(0.056)**	(0.047)**	(0.078)**	(0.063)***
delay x ed2	0.037	0.015	0.049	-0.142
	(0.007)***	(0.010)	(0.009)***	(0.048)***
delay x ed3	0.156	0.034	0.184	-0.170
	(0.029)***	(0.018)*	(0.032)***	(0.066)**
obs	904657	509869	904657	52108
region FE	yes	yes	yes	yes
year FE	yes	yes	yes	yes
Instruments				
Underid test [(1)]	1424.96	782.88	1161.41	456.23
p-value - chi2(7)	0.000	0.000	0.000	0.000
Overid test[(2)]	3.40	2.92	2.35	4.17
p-value - chi2(6)	0.757	0.818	0.884	0.653

Note: IV-LPM model with the number of appeals of PA sector and judges' turnover as instruments. Clustered standard errors in parenthesis. All specifications include district per capita income, civil trial length, gender, age and education dummies, district and year dummies. (1) Kleibergen-Paap rk LM stat. and (2) Hansen J stat. *significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6. The effect of labour trial delays on the incidence of permanent jobs (IV -LPM)

Variable	**Permanent vs. temporary**			
	(1)	(2)	(3)	(4)
delay	-0.134	-0.133	-0.116	-0.095
	(0.072)**	(0.079)*	(0.069)*	(0.065)
delay x male	0.040	0.031	0.034	0.023
	(0.015)**	(0.018)*	(0.018)**	(0.012)*
delay x age3055	0.005	-0.057	-0.06	-0.046
	(0.019)	(0.025)**	(0.025)**	(0.022)**
delay x age5564	0.124	0.007	0.017	0.006
	(0.032)***	(0.02)	(0.02)	(0.019)
delay x ed2	0.081	0.073	0.061	0.036
	(0.024)***	(0.024)***	(0.02)***	(0.011)***
delay x ed3	0.121	0.09	0.068	0.033
	(0.038)***	(0.035)**	(0.029)**	(0.017)**
obs	509869	457761	457761	457761
region FE	yes	yes	yes	yes
year FE	yes	yes	yes	yes
industry FE	no	no	yes	yes
occup. FE	no	no	no	yes
Instruments				
Underid test (1)	1424.96	811.00	811.152	811.354
p-value - chi2(7)	0.000	0.000	0.000	0.000
Overid test (2)	3.403	7.255	6.554	6.771
p-value - chi2(6)	0.757	0.279	0.256	0.263

Note: IV-LPM model with the number of appeals of PA sector and judges' turnover as instruments. Clustered standard errors in parenthesis. All specifications include district per capita income, civil trial length, district and year dummies. (1) Kleibergen-Paap rk LM stat. and (2) Hansen J stat. ** significant at 5%; ***

Table 7. The effect of labour trial delays on temporary jobs (7 age groups)

	Permanent vs. temporary			**Permanent vs. temporary** *Male workers*		
	(1)	(2)	(3)	(4)	(5)	(6)
delay	-0.072	-0.062	-0.021	-0.077	-0.059	-0.061
	(0.043)*	(0.035)*	(0.018)	(0.048)*	(0.036)*	(0.046)
delay x male	0.045	0.047	0.033			
	(0.021)**	(0.022)**	(0.013)**			
delay x age3034	-0.047	-0.052	-0.044	-0.023	-0.028	-0.019
	(0.02)**	(0.02)***	(0.018)***	(0.017)	(0.017)	(0.017)
delay x age3539	-0.019	-0.023	-0.014	-0.012	-0.017	-0.005
	(0.018)	(0.018)	(0.016)	(0.019)	(0.018)	(0.017)
delay x age4044	-0.027	-0.031	-0.016	-0.025	-0.029	-0.015
	(0.020)	(0.021)	(0.018)	(0.020)	(0.021)	(0.019)
delay x age4549	-0.023	-0.023	-0.006	-0.005	-0.004	0.012
	(0.019)	(0.018)	(0.017)	(0.020)	(0.021)	(0.022)
delay x age5054	-0.004	-0.006	0.014	0.005	0.005	0.02
	(0.018)	(0.017)	(0.017)	(0.022)	(0.021)	(0.022)
delay x age5564	0.038	0.029	0.052	0.031	0.031	0.05
	(0.021)*	(0.019)	(0.022)**	(0.025)	(0.025)	(0.028)*
delay_e2	0.088	0.073	0.044	0.06	0.046	0.031
	(0.028)***	(0.023)***	(0.013)***	(0.018)***	(0.014)***	(0.011)***
delay_e3	0.112	0.087	0.047	0.09	0.061	0.04
	(0.041)**	(0.034)**	(0.020)**	(0.032)***	(0.024)**	(0.019)**
	0.01	0.01	0.02	0	0.01	0.04
N	457761	457761	457761	247986	247986	247986
region dummy	yes	yes	yes	yes	yes	yes
year dummy	yes	yes	yes	yes	yes	yes
industry dummy	no	yes	yes	no	yes	yes
occup. dummy	no	no	yes	no	no	yes
Instruments						
Underid test [(1)]	880.47	880.85	881.45	814.14	814.41	814.37
p-value - chi2(11)	0.000	0.000	0.000	0.000	0.000	0.000
Overid test[(2)]	13.25	10.75	13.13	10.96	12.13	12.80
p-value - chi2(10)	0.210	0.377	0.216	0.278	0.206	0.170

Note: IV-LPM model with the number of appeals of PA sector and judges' turnover as instruments. Clustered standard errors in parenthesis. All specifications include district per capita income, civil trial length, gender, age and education dummies, district and year dummies. (1) Kleibergen-Paap rk LM stat. and (2) Hansen J stat. *significant at 10%; ** significant at 5%; *** significant at 1%.

Table 8: First Stage Regressions

Endogenous var:	delay	delay x male	delay x age3044	delay x age5564	delay x ed2	delay x ed3
	(1)	(2)	(3)	(4)	(5)	(6)
turnover	0.342	0.851	1.132	0.390	0.863	0.177
	(0.203)*	(0.684)	(0.658)*	(0.386)	(0.509)*	(0.173)
appeal	0.051	0.0251	0.032	0.013	0.025	0.006
	(0.031)*	(0.006)***	(0.007)***	(0.004)**	(0.006)***	(0.002)***
turnover x male	0.004	-1.578	-0.003	0.000	0.014	0.004
	(0.011)	(1.562)	(0.016)	(0.011)	(0.024)	(0.009)
appeal x male	0.000	0.0563	0.000	0.000	0.000	0.000
	(0.000)	(0.012)***	(0.000)	(0.000)	(0.000)***	(0.000)
turnover x age3055	0.001	-0.011	-1.570	0.051	-0.091	0.018
	(0.046)**	(0.027)	(0.968)*	(0.059)	(0.112)	(0.020)
turnover x age4564	0.029	0.0011	-0.018	-1.455	-0.036	0.060
	(0.066)	(0.033)	(0.780)	(1.585)	(0.088)	(0.038)
appeal x age3055	0.000	0.000	0.055	-0.001	0.002	0.000
	(0.000)	(0.000)	(0.012)***	(0.000)	(0.000)***	(0.000)
appeal x age4564	0.000	0.0000	-0.002	0.056	0.002	0.000
	(0.000)	(0.000)	(0.000)	(0.012)	(0.000)***	(0.000)*
turnover x ed2	0.041	0.030	-0.065	0.067	-1.606	0.072
	(0.063)	(0.039)	(0.070)	(0.034)	(1.556)	(0.034)**
turnover x ed3	0.055	0.042	-0.051	0.100	0.161	-1.618
	(0.053)	(0.023)*	(0.063)	(0.053)	(0.090)*	(1.533)
appeal x ed2	0.000	0.00	0.001	0.000	0.057	0.000
	(0.000)	(0.000)	(0.000)**	(0.000)	(0.012)***	(0.000)*
appeal x ed2	0.000	0.000	0.001	-0.001	0.000	0.055
	(0.000)	(0.000)	(0.000)**	(0.000)	(0.000)	(0.011)***
F(12, 53)	1.895	5.512	4.892	4.873	5.584	5.92
Prob >F	0.056	0.000	0.000	0.000	0.000	0.000
Shea partial R2	0.113	0.304	0.298	0.300	0.305	0.302

Note: results are based on the specification in Table 2, column 1. *significant at 10% ; ** significant at 5%; *** significant at 1%

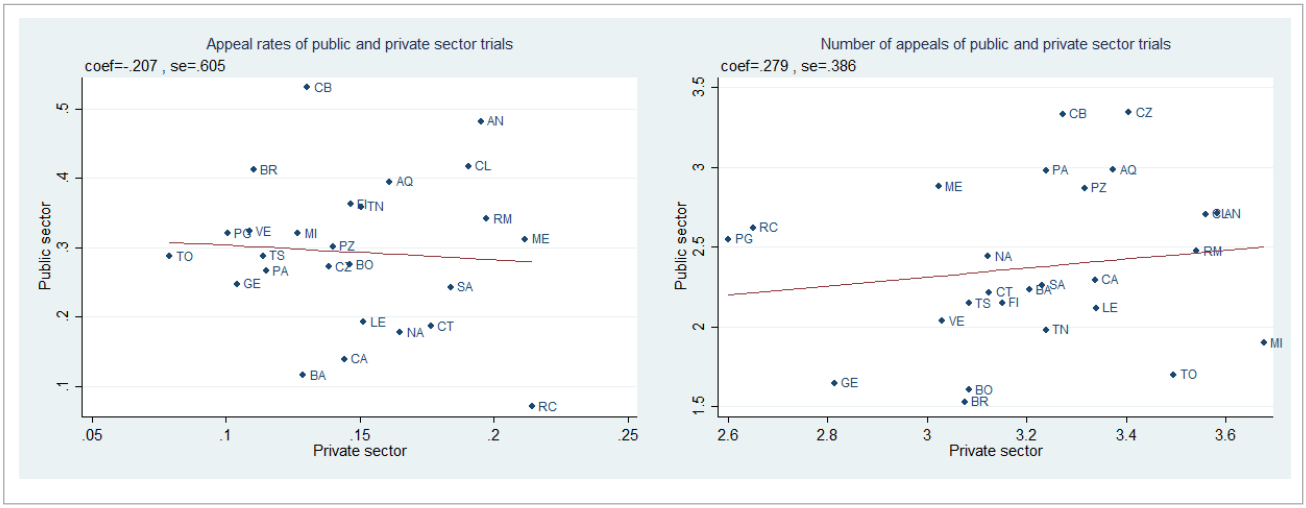
Table 9: The effect of past court delays (2007) on individuals' labour market status (IV -LPM)

	employed vs. non-employed (1)	**employed vs. unemployed** (2)	**active vs. non-active** (3)	**permanent vs. temp. and unemp** (5)	**long-term unemployed** (6)
delay x male	0.06	0.024	0.069	0.008	0.036
	(0.011)***	(0.006)***	(0.014)***	(0.011)	(0.018)**
delay x age3055	0.039	0.074	0.021	-0.007	0.06
	(0.02)**	(0.026)***	(0.014)	(0.022)	(0.023)**
delay x age5564	0.198	0.113	0.164	0.003	0.176
	(0.051)***	(0.033)***	(0.041)***	(0.020)	(0.064)**
delay x ed2	0.015	0.009	0.017	0.026	-0.108
	(0.006)**	(0.005)*	(0.007)**	(0.008)***	(0.039)**
delay x ed3	0.069	0.012	0.083	0.021	-0.088
	(0.021)***	(0.012)	(0.021)***	(0.011)**	(0.031)***
obs	599970	337517	599970	301468	36049
region FE	yes	yes	yes	yes	yes
year FE	yes	yes	yes	yes	yes
Instruments					
Underid test [(1)]	12.023	10.616	12.023	11.535	16.252
p-value - chi2(7)	0.061	0.101	0.0615	0.072	0.012
Overid test [(2)]	8.292	5.02	8.151	8.279	5.611
p-value - chi2(6)	0.141	0.413	0.151	0.141	0.345

Note: IV-LPM model with the number of appeals of PA sector and judges' turnover as instruments. Clustered standard errors in parenthesis. Delay is the average length of labour trials in 2007 by court district. The sample period is 2009-2010. All specifications include district per capita income, civil trial length, district and year dummies. [(1)] Kleibergen-Paap rk LM stat. and [(2)] Hansen J stat. ** significant at 5%; *** significant at 1%.

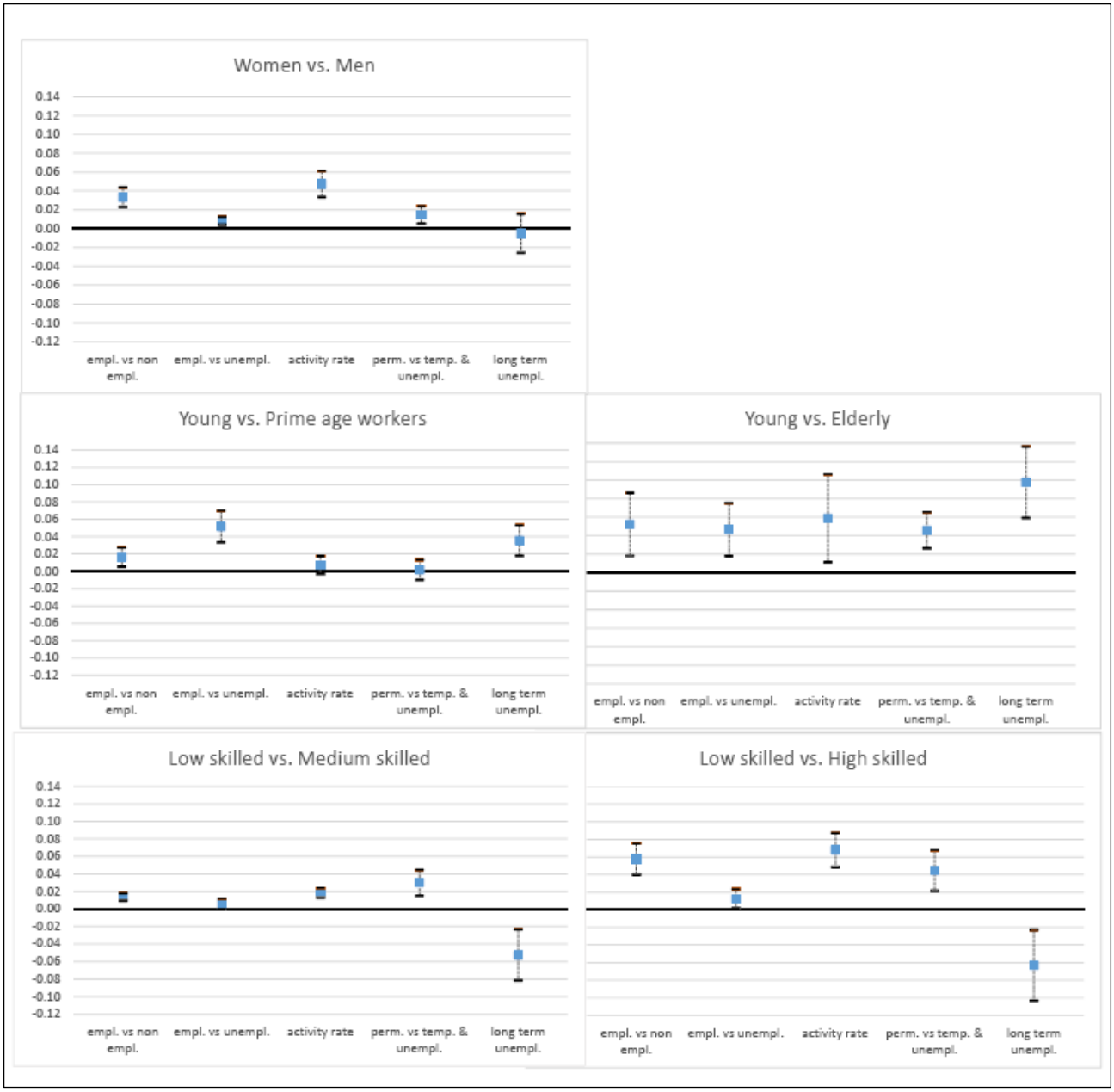
Figures

Figure 1: Appeals (number and rates) of public and private sector trials



Source: Ministry of Justice database and authors' calculations.

Figure 2: The effect of 1 s.d. decrease of labour courts delays on labour market outcome by demographic groups (reference group: female, young and low educated individuals)



APPENDIX

Table A1: Geographical distribution of court districts

Macro Region	Administrative region	Court District
North	Piemonte	Torino
	Valle d'Aosta	Torino
	Lombardia	Milano
		Brescia
	Trentino Alto Adige	Trento
	Veneto	Venezia
	Friuli-Venezia Giulia	Trieste
	Liguria	Genova
	Emilia-Romagna	Bologna
Center	Toscana	Firenze
	Umbria	Perugia
	Marche	Ancona
	Lazio	Roma
South	Abruzzo	L'Aquila
	Molise	Campobasso
	Campania	Napoli
		Salerno
	Puglia	Bari
		Lecce
	Basilicata	Potenza
	Calabria	Reggio Calabria
		Catanzaro
	Sicilia	Palermo
		Caltanisetta
		Messina
		Catania
	Sardegna	Cagliari

Source: Author's elaboration of data form the Ministry of Justice.

Table A2. The effect of labour trial delays on labour market status by demographic groups (IV -Probit)

	employed vs. non-employed	**employed vs. unemployed**	**active vs. non-active**	**Permanent vs. temp and unemp.**	**long-term unemployed**
	(1)	(2)	(3)	(4)	(5)
delay	-0.499	-0.289	-0.314	-0.391	1.221
	(0.250)**	(0.446)	(0.282)	(0.514)	(1.321)
delay x male	0.169	0.004	0.181	0.031	-0.028
	(0.046)***	(0.038)	(0.047)***	(0.042)	(0.091)
delay x age3055	0.074	0.214	0.078	0.151	0.281
	(0.043)*	(0.047)***	(0.045)*	(0.062)**	(0.088)***
delay x age5564	0.6846	0.651	0.863	0.178	0.708
	(0.211)***	(0.121)***	(0.182)***	(0.066)**	(0.169)***
delay x ed2	0.072	0.065	0.075	0.152	-0.342
	(0.020)***	(0.04)*	(0.02)***	(0.05)***	(0.125)**
delay x ed3	0.332	0.125	0.374	0.291	-0.436
	(0.065)***	(0.075)*	(0.059)***	(0.101)***	(0.174)**
obs.	904657	509869	904657	509869	52108
region dummy	yes	yes	yes	yes	yes
year dummy	yes	yes	yes	yes	yes

Note: IV-Probit model with the number of appeals of PA sector and judges' turnover as instruments. All specifications include district per capita income, civil trial length, gender, age and education dummies, district and year dummies. *significant at 10%; ** significant at 5%; *** significant at 1%.

Table A3. The effect of labour trial delays on labour market status by demographic groups (OLS)

	employed vs. non-employed	**employed vs. unemployed**	**active vs. non-active**	**Permanent vs. temp and unemp.**	**long-term unemployed**
	(1)	(2)	(3)	(4)	(5)
delay	-0.101	-0.078	-0.094	-0.059	0.008
	(0.014)***	(0.014)***	(0.014)***	(0.013)***	(0.025)
delay x male	0.058	0.017	0.076	0.015	0.019
	(0.008)***	(0.004)***	(0.010)***	(0.006)**	(0.011)*
delay x age3055	0.016	0.07	-0.002	0.011	0.049
	(0.011)	(0.013)***	(0.010)	(0.012)	(0.012)***
delay x age5564	0.206	0.115	0.171	0.066	0.144
	(0.027)***	(0.018)***	(0.021)***	(0.016)***	(0.025)***
delay x ed2	0.03	0.01	0.036	0.031	-0.062
	(0.005)***	(0.005)***	(0.005)***	(0.008)***	(0.010)***
delay x ed3	0.091	0.023	0.103	0.051	-0.068
	(0.013)***	(0.011)**	(0.011)***	(0.013)***	(0.021)***
r2	0.253	0.063	0.269	0.106	0.048
obs	925856	520349	925856	520349	53474
region dummy	yes	yes	yes	yes	yes
year dummy	yes	yes	yes	yes	yes

Note: Clustered standard errors in parenthesis. All specifications include district per capita income, civil trial length, gender, age and education dummies, district and year dummies. *significant at 10%; ** significant at 5%; *** significant at 1%.