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Escaping Social Pressure: Fixed-Term Contracts in Multi-Establishment Firms^{*}

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Abstract

We investigate the impact of local social pressure against dismissals on the choice of employment contracts made by firms using French linked employer-employee data. Taking into account the potential endogeneity of plant location, we show that establishments located closer to headquarters have higher shares of fixed-term contracts in hiring than those located further away whenever firms' headquarters are located in self-centered communities. We also show that this relationship is driven by firms that are highly visible in the community of the headquarters and whose CEOs not only work but also live there. In contrast, when firms' headquarters belong to communities that are not self-centered, the impact of distance to headquarters on the share of fixed-term contracts turns out to be positive. We show that these findings can only be explained by local social pressure. When the local community at the firm's headquarters is self-centered, CEOs are under pressure to avoid dismissing workers close to headquarters. By adding to the adjustment costs associated with open-ended contracts, this creates an incentive for CEOs to rely more on fixed-term contracts, in an attempt to escape social pressure.

Keywords: social pressure, employment contracts, adjustment costs, CEO reputation

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Introduction

Economists have become increasingly aware of the importance of social pressure in affecting agents' decisions (e.g. Benabou and Tirole, 2006). However, in most of the literature, individuals and firms are assumed to passively accommodate social pressure. Individuals tend to conform to attitudes that will gain social approval from their environment (e.g. Gächter and Fehr, 1999; Garicano, Palacios-Huerta and Prendergast, 2005). Firms try to comply with the expectations of their consumers – and more generally stakeholders – by adopting for example socially-responsible behaviors (e.g. Schmitz and Schrader, 2015; Crifo and Forget, 2015). In this paper, we show that beyond accommodating social pressure, firms also modify their human resource management practices to escape it.

We consider the social pressure that local communities put on CEOs to avoid dismissals in their immediate surroundings. Social pressure refers to the threat of social sanctions exerted by the local community of the CEO and taking the form of a reduction in her reputation. To the extent that dismissals are considered costly by local communities, the latter put CEOs under pressure to reduce firing in their immediate surroundings. There is evidence, in the literature, that firms passively react to this pressure by reducing the number of dismissals of workers employed on open-ended contracts (see e.g. Bassanini, Brunello and Caroli, 2017). In the present paper, we show that they also actively try to escape social pressure by hiring workers on fixed-term contracts. Termination of these contracts is indeed not subject to social pressure because they involve no implicit commitment to long-term employment (Rousseau and Anton, 1988; Charness and Levine, 2000). Moreover, hiring being hardly visible to observers,¹ CEOs are unlikely to feel pressure for hiring on open-ended rather than fixed-term contracts.

We first present a simple theoretical model in which employment decisions are taken by the CEO at the firm's headquarters. Whether CEOs decide to hire workers on open-ended or fixed-term contracts depends – for a given expected risk of job destruction – on the relative adjustment costs associated with each type of contract. The difference in adjustment costs between these contracts is primarily determined by labor law. However, adjustment costs, and especially the cost of firing workers on open-ended contracts, may also stem from social pressure exerted on CEOs by the local community at the firm's headquarters. The intensity of this pressure depends on the characteristics of the local community. When the community is

¹ Heinz and Swinnen (2015) provide evidence that job creations are hardly visible to observers. They review articles reporting on downsizing and upsizing in a leading German newspaper over 8 years. On a per-job basis, they find 20 times as many articles reporting on job destruction as articles reporting on job creation.

self-centered, it cares about dismissals only if they affect the community itself or individuals with whom it is closely connected. There might be two reasons for this: on the one hand, members of a community may feel highly concerned by the well-being of that community because it directly affects their utility (they are to some extent altruistic towards their co-members); on the other hand, self-centeredness may originate from the fact that individuals are selfish but the economic shocks undergone by their community co-members have an indirect effect on their utility, for example through the chain effects on their revenue. To the extent that social interactions decrease with distance, this generates a negative relationship between distance to headquarters and social pressure, and hence a negative relationship between distance and the incentive for firms to hire workers on fixed-term contracts in an attempt to circumvent social pressure. In contrast, when the local community at headquarters is outward-looking, it cares about dismissals wherever they take place, which implies that the social pressure perceived by the CEO is the same no matter at which distance firings occur.

Our empirical analysis relies on French data. These data indeed allow us to exploit the geography of employment contracts to identify the effect of social pressure. This is due to the fact that, in France, firing decisions in different plants have to be coordinated at the firm level since the threshold that triggers (more expensive) collective redundancy procedures is defined on the basis of the total number of dismissals undertaken in all establishments of the firm.² As a consequence, the choice between hiring on open-ended versus fixed-term contracts is also likely to be made at the firm level, since it affects the cost of future staff adjustments in all plants. We match two large datasets. The *Déclarations Annuelles des Données Sociales* (DADS) contains social security records for all plants and firms in the non-agricultural business sector, including the geographical location of the plants and firms' headquarters. The *Déclarations des Mouvements de Main d'Oeuvre* (DMMO-EMMO) has quarterly hiring by type of employment contract for all plants with more than 50 workers and a 25% random sample of those between 10 and 50 workers. By matching these datasets, we obtain information on the geographical dispersion of employment contracts for almost 5,000 multi-establishment firms and over 23,000 plants for the period 1998-2009.

Our empirical analysis takes into account the potential endogeneity of distance to headquarters by instrumenting actual distance with potential distance. The latter is defined as the distance from the headquarters at which the establishment would have been located had its

² This is the case in most OECD countries (see OECD, 2013). The United-States, where this threshold is defined at the establishment rather than the firm level, represents one of the exceptions.

location been chosen only to maximize its contribution to the market potential of the firm (measuring the capacity of the firm to serve large local markets while minimizing transport costs).

We provide evidence separately for firms with headquarters located in self-centered and outward-looking communities. To capture the two above-mentioned aspects³ of self-centeredness, we measure it alternatively by the difference in turnout rates between local and national elections, and by the inverse of the share of charitable giving in local GDP.⁴ We show that, whatever the measure we use, for firms with headquarters located in self-centered communities the impact of distance to headquarters on the share of fixed-term contracts in hiring is negative and statistically significant. We find no such evidence for firms with headquarters located in outward-looking communities. We then consider the impact of firm visibility at headquarters on the share of fixed-term contracts. The underlying assumption is that CEOs are subject to social pressure arising from their local community only if their firm is visible enough, i.e. represents a large-enough share of local employment in the area of the headquarters. We show that when firms' headquarters are located in self-centered communities, the negative impact of distance on the share of fixed-term contracts is concentrated on firms that are highly visible. We also investigate the role of the CEO's place of living. We expect CEOs to be more sensitive to the social pressure arising from the community at headquarters when they live and not only work in that community. We show that the negative impact of distance on the share of fixed-term contracts that we observe when firms' headquarters are located in self-centered communities is indeed driven by CEOs who live in that community. Finally, we consider an alternative measure of distance to headquarters based on social ties. An establishment is considered to be located close to headquarters when a high proportion of individuals living at headquarters were born in the geographical area of the establishment. When re-estimating our model with this measure of distance, we find similar results to those obtained when using physical distance.

In the light of our model, we interpret these findings as indicating that when social pressure against dismissals is strong, firms tend to hire workers on fixed-term contracts to escape it. We discuss alternative explanations of a negative relationship between distance and

³ As mentioned above, people might be self-centered for two different reasons: they may feel highly concerned by the well-being of their community because it directly enters as an argument in their utility function, while this is not the case for the well-being of other communities; or they may be selfish but concerned by economic shocks undergone by their community co-members because they may indirectly affect other arguments of their utility function through chain effects.

⁴ The share of charitable giving in local GDP is indeed a standard measure of unselfishness.

the share of fixed-term contracts and we show that none of them can account for the whole set of results that we obtain.

Our paper relates to several strands of literature. The first one is the literature on social pressure and image-motivated altruism. Research in this field suggests that individuals want to be liked and respected and that they seek to gain social approval of their behavior (see Benabou and Tirole, 2006). As a consequence, individuals tend to be more altruistic when their actions are known to others than when they remain private information (Freeman, 1997, Andreoni and Petrie, 2004, Ariely, Bracha and Meier, 2009, Lacetera and Macis, 2010, Soetevent, 2011, Filiz-Ozbay and Ozbay, 2014). Moreover, behaviors that may seem altruistic are often the result of attempts made by selfish individuals to escape the threat of social sanctions (Della Vigna, List and Malmendier, 2012). This suggests that apparent altruism is partly image-motivated and that individuals are sensitive to the social pressure arising from their immediate social environment. Beyond altruism, there is evidence that social pressure also affects other dimensions of individual behavior, such as civic attitude as regards voting (Gerber, Green and Larimer, 2008, Funk, 2010) or tax compliance (Battiston and Gamba, 2016).

Social pressure has also been shown to influence firm behavior. This pressure may arise from consumers. As underlined by Benabou and Tirole (2010), it may take the form of "delegated philanthropy" when consumers want firms to do good on their behalf. This has actually been one of the main driving forces of the development of corporate social responsibility in recent years. Hendel, Lach and Spiegel (2017) show that firms are also sensitive to stronger forms of social pressure, in particular consumer boycott. But social pressure may also arise from inside the firm. As shown in the literature on corporate governance – e.g. Bertrand and Mullainathan (2003), Giroud and Mueller (2010), and Bach and Serrano-Velarde (2015) – when managers are entrenched, they react to social pressure from employees by paying them higher wages than the profit-maximizing level. Cronqvist et al. (2009) show that this gap is particularly large for workers who are close to the CEO in the organizational hierarchy of the firm, thus suggesting that social pressure is especially strong in this case. Experimental evidence has shown that employers may also refrain from downsizing if they expect this to be disliked by remaining workers, who could retaliate by reducing their effort (Drzensky and Heinz, 2016). A last strand of literature shows that social pressure may also arise from the local community where the firm headquarters are located. As a reaction, firms tend to concentrate employment reductions – see Landier, Nair and Wulf (2009) and Abraham, Goesaert and Konings (2014) – and, in particular, dismissals (Bassanini et al., 2017) in plants

located further away from headquarters. In this paper, we show that firms not only put up with social pressure. They actually implement human resource strategies to escape it, in particular by hiring employees on fixed-term rather than on open-ended contracts.

Our paper also speaks to the literature on the choice of labor contracts at the time of hiring. The first generation of theoretical papers on this topic has much emphasized the role of hiring and firing regulations in determining differences in adjustment costs between open-ended and temporary contracts. These papers show that employers prefer to hire on temporary contracts whenever legal firing costs are higher than the sum of legal hiring and termination costs for fixed-term contracts (e.g. Blanchard and Landier, 2002; Cahuc and Postel-Vinay, 2002). The most recent literature emphasizes the role of other factors – such as differences across jobs in the risk of being hit by a negative shock or in the attractiveness of each type of contract – but these factors would not induce hiring on fixed-term contracts if there were no difference in legal adjustment costs across contracts (e.g. Cahuc, Charlot and Malherbet, 2016; Berton and Garibaldi, 2012, Faccini, 2014). Empirical evidence provides ample confirmation of the role of firing legislation – as well as of restrictions on hiring on fixed-term contracts – in determining the distribution of the different types of contract (e.g. Autor, 2003; Kahn, 2010; Centeno and Novo, 2012; Hijzen, Mondauto and Scarpetta, 2017).⁵ We contribute to this literature by showing that firms may resort to fixed-term contracts in order to escape social pressure against dismissals, which represents an independent explanation from the existence of differences in legal adjustment costs.⁶

The rest of the paper is structured as follows. Section I presents a simple model of social pressure and the choice of employment contracts. Section II lays out our empirical strategy. Section III describes the data and presents summary statistics. Section IV presents the empirical results. Alternative explanations are discussed in Section V and Section VI concludes.

I. Social Pressure and Labor Contracts: a Simple Model

We consider a multi-establishment company where employment decisions are taken at the headquarters. We focus on the choice of job contracts as the distance to the headquarters

⁵ Recent evidence has also shown that firms resort more to fixed-term contracts when they have a greater risk of job destruction (Dräger and Marx, 2017; Devicienti, Naticchioni and Ricci, 2018).

⁶ There is also evidence in the literature that hiring decisions may be arbitrary. Hoffman, Kahn and Li (2018) show that managers may discard relevant information about applicants when hiring, which leads to lower quality hires. They interpret this finding as the outcome of managerial biases or errors. Our results suggest that one possible explanation of these biases or apparent errors may be the sensitivity of CEOs (or top managers) to local social pressure.

increases. We assume, for the sake of simplicity, that in each secondary establishment j each new job i has the same productivity (normalized to 1) but a different level of risk⁷. Following Cahuc et al. (2016), job risk, denoted by $\gamma > 0$, is the probability that at each period the job becomes unproductive and is destroyed. It is drawn, upon recruitment, in a distribution with cumulative distribution function $F_j(\gamma)$. It is observed by the firm and is the basis of its contract decision. Finally, we assume that the distribution of risks is heterogeneous across jobs and establishments but is independent across jobs within the same establishment.

Management decisions, including hiring and termination of contracts, are taken by the CEO who works in the municipality where the headquarters are located. Establishments located further away from the headquarters are more difficult to monitor and CEOs have imperfect information on their local conditions. This heightens the risk of productivity shocks in distant establishments.⁸ As a consequence, we assume that job risk increases with the distance δ between the establishment and the firm's headquarters⁹ – i.e. the distribution of γ shifts upward:

$$\frac{\partial F_j(\gamma)}{\partial \delta_j} = \frac{\partial F(\gamma, \delta_j)}{\partial \delta_j} < 0 \quad [1.1]$$

When meeting with a worker, the CEO has to decide whether or not to hire her and the type of contract to be chosen between two alternatives: an open-ended contract and a fixed-term contract of duration D .¹⁰ Writing a contract induces a strictly positive cost, h^o or h^f , for open-ended or fixed-term contracts, respectively. Employees on open-ended contracts can be dismissed by paying a legal firing cost d^o . No legal cost is associated with termination of fixed-term contracts.¹¹ By law, however, it is impossible to fire a worker before the end of a fixed-term contract.¹²

Near each establishment and the headquarters lives a community. Following Akerlof (1980), we assume that the CEO cares about profits and her reputation. A community can

⁷ Taking into account productive heterogeneity would not change our predictions.

⁸ There is abundant evidence that monitoring problems and asymmetric information induce a positive relationship between the probability of downsizing and the distance to the headquarters (see e.g. Landier, Nair and Wulf, 2009, Giroud, 2013, Kalnins and Lafontaine, 2013, and Charnoz, Lelarge and Trevien, 2018).

⁹ We do not model here why a firm has at least one plant beyond the headquarters, and why plants may be located at different distances from headquarters.

¹⁰ We assume here that there is a unique possible duration D defined by the law. In many countries the maximum duration of fixed-term contracts, including possible renewals, is indeed fixed by the law (see e.g. OECD, 2014).

¹¹ This is only a simplifying assumption. Results would remain the same if termination costs at the end of a fixed-term contract were included as long as they remain smaller than firing costs on open-ended contracts.

¹² Cahuc et al. (2016) make the same assumption, which corresponds to the French legislation in which a fixed-term contract cannot be breached. However, lifting this assumption would not change the results provided that there are positive hiring costs at least for fixed-term contracts.

sanction the CEO when she is perceived as harming it. Sanctions take the form of a reduction in the CEO's reputation within the community. We also assume that CEOs are sensitive only to social sanctions taking place in their local environment, i.e. in the area of the headquarters.¹³

The CEO's intertemporal utility from a job i in establishment j is the sum of the expected instantaneous profits minus contracting and legal costs as well as social sanctions undergone in the case of dismissal. The latter type of sanction occurs if the dismissal is perceived as harmful by the community of the headquarters. Because this perception is not necessarily the same if a dismissal takes place within the community itself or at a more distant place, we allow the level of social sanction (denoted S_j) to depend on the distance to the firm's headquarters.

The relationship between distance and social sanctions by the headquarters' community is likely to vary with how much a community cares about dismissals of other people. In the model, we consider two types of communities, self-centered and outward-looking. Self-centered communities care only about dismissals of their members or dismissals occurring in other communities with which they interact. There may be two reasons for this pattern of preferences: either members of the community care about what happens to co-members because this directly enters their utility function as an argument (they are to some extent altruistic towards their co-members) or because this has an impact on a variable affecting their own utility (they are selfish but the fate of their co-members impacts one of the arguments of their utility function). Whatever the mechanism at work, the more intense the interactions between individuals living at headquarters and individuals living in another community, the greater the social sanctions imposed on the CEO in the case of dismissals of members of this other community. In other words, in self-centered communities, the social sanction implied by a dismissal in establishment j is an increasing function of the intensity of the interactions between the community where the job is destroyed and the community where the firm's headquarters are located. To the extent that social interactions decrease with physical distance,¹⁴ S_j will be a decreasing function of distance from headquarters δ_j :

$$S_j = s - m(\delta_j) \tag{1.2}$$

¹³ Bassanini et al. (2017) provide evidence that this assumption holds in French data.

¹⁴ Evidence that social relations decrease with geographical distance between individuals is provided by the *Contact entre les personnes* ("Contact between people") Survey, carried out by the French Statistical Institute (INSEE) in 1983. This survey has information on the frequency of encounters of an individual with her friends, children, parents and in-laws and the distance at which these relatives and friends live, for 17,797 couples of individuals. For distances higher than 5 km, the coefficient of correlation between distance and the frequency of encounters is -0.05 – significant at the 1% level.

where s is a constant and m is a monotonic increasing function. By contrast, outward-looking communities equally care about all dismissals, no matter where destroyed jobs are located, that is:

$$S_j = s \quad \forall j \quad [1.3]$$

In the baseline version of the model, we assume that there is no social sanction for hiring on fixed-term contracts. This assumption is motivated by the fact that, while dismissals (and especially mass dismissals) are widely covered by the media and hence easily observable by local communities, the type of work contracts on which employees are hired is not – see e.g. Heinz and Swinnen (2015). Therefore, local communities do not have the relevant information that would allow them exerting significant social pressure against hiring on fixed-term contracts. However, we show in Appendix A.1.4 that the main predictions of the model still hold if communities were to put pressure on CEOs to hire workers on open-ended rather than fixed-term contracts.

Firms are wage-takers and workers are paid wage w .¹⁵ Assuming away discounting for simplicity, the CEO's expected utility from hiring on an open-ended contract for a job with risk γ in establishment j is:

$$U_j^o(\gamma) = \sum_{k=0}^{\infty} (1-\gamma)^k (1-w) - h^o - \sum_{k=0}^{\infty} (1-\gamma)^k \gamma (S_j + d^o) \quad [1.4]$$

The first two terms on the right-hand side stand for expected profits over the duration of the job, that is the sum of expected instantaneous profits, multiplied by the probability of job survival at time k , minus the contract writing cost h^o . The last term stands for the cost of separation that is the legal costs and the social sanction.¹⁶ Re-arranging equation [1.4] yields:

$$U_j^o(\gamma) = \frac{(1-w)}{\gamma} - c_j^o \quad [1.5]$$

where $c_j^o = d^o + S_j + h^o$. Social sanctions can be seen, therefore, as an additional adjustment cost beyond hiring costs and legal firing costs. By contrast, as fixed-term contracts are expected to terminate after a time span D , their termination involves no social sanction. The CEO's expected utility from hiring on a fixed-term contract is:

¹⁵ For the sake of simplicity, we assume that wages and productivities do not depend on the type of contract. Because this would just create differences in per-period profits, it would not change the effect of distance on the choice of employment contract.

¹⁶ We thus assume that production is separable which is consistent with the fact that job risk on a given job is assumed to be independent from that of other jobs.

$$U_j^f(\gamma) = \sum_{k=0}^{D-1} (1-\gamma)^k - wD - h^f = \frac{1 - (1-\gamma)^D - \gamma wD}{\gamma} - h^f \quad [1.6]$$

In words, the expected utility that the CEO derives from a fixed-term contract is the difference between the expected output over the duration of the contract, and the sum of the wage bill paid during the whole contract (wD) and the contract writing cost h^f .

In the following, we drop the establishment subscript to simplify the notation. The firm chooses an open-ended contract if $U^o(\gamma) \geq U^f(\gamma)$ as long as $U^o(\gamma) \geq 0$, and a fixed-term contract if $U^o(\gamma) < U^f(\gamma)$ as long as $U^f(\gamma) \geq 0$. As shown in Appendix A.1.1, both expected utilities in equations [1.5] and [1.6] are decreasing and convex in γ . We assume that when $\gamma = 1$ (that is, the job ends with probability one at the end of the first period), the fixed-term contract is the one yielding the greatest utility, even if this can be negative.¹⁷ Under this assumption, the difference in intertemporal utility $U^o(\gamma) - U^f(\gamma)$ is decreasing with the job risk and there is a unique job risk threshold, denoted $\bar{\gamma}$ hereafter, such that the firm hires on open-ended contract if $\gamma < \bar{\gamma}$ (see Appendix A.1.2). Intuitively, when the job risk tends to 0, the value of an open-ended contract tends to infinity, while it goes to a finite value in the case of fixed-term contracts because job duration is fixed. On the contrary, both values decrease with job risk – but less so for fixed-term contracts since at the end date they can be terminated at no cost – see Figure 1.

We consider now how contract choices are affected by the adjustment costs. An increase in adjustment costs on open-ended contracts c^o reduces the contract-choice threshold $\bar{\gamma}$, that is:

$$\frac{d\bar{\gamma}}{dc^o} < 0.$$

The formal proof is provided in Appendix A.1.3 but it can be easily understood since an increase in adjustment costs for open-ended contracts makes these contracts more expensive for any job risk γ , thereby making them less convenient. Graphically, the expected-utility curve for open-ended contracts shifts downwards while changes in c^o do not affect the corresponding curve for fixed-term contracts, thereby resulting in a shift to the left of the cut-off point.

Assume that if $\gamma=1$ fixed-term contracts always yield a non-negative expected utility (we relax this assumption in Appendix A.1.5). In this case, the share of open-ended contracts in new hires is simply $L^o = F(\bar{\gamma}, \delta)$ and that of fixed-term contracts is $L^f = 1 - L^o$. If

¹⁷ This is equivalent to assuming $1 - wD - h^f > 1 - w - c^o$. If this were not the case, the choice problem would be trivial: open-ended contracts would be more attractive for the CEO for any value of γ , since – as shown in Appendix A.1.1 – expected utilities in equations [1.5] and [1.6] are decreasing and convex in γ and when $\gamma \rightarrow 0$, $U^o(\gamma) \rightarrow +\infty$, while this is not the case for $U^f(\gamma)$.

adjustment costs on open-ended contracts increase, the job-risk cut-off goes down and so does the probability of hiring on an open-ended contract. In turn, this raises the share of fixed-term contracts in new hires:

$$\frac{dL^f}{dc^o} = -f(\bar{\gamma}, \delta) \frac{d\bar{\gamma}}{dc^o} > 0$$

where f stands for the density function of job risk γ . Since $c^o = h^o + d^o + S$, we have that $d\bar{\gamma}/dS = d\bar{\gamma}/dc^o$, which implies that potential social sanctions, which would occur in the case of dismissals of workers on open-ended contracts, have an impact on hiring decisions in terms of contract choice:

$$\frac{dL^f}{dS} = -f(\bar{\gamma}, \delta) \frac{d\bar{\gamma}}{dc^o} > 0$$

In other words, the CEO tries to escape the threat of social sanctions – i.e. social pressure against dismissals – by reducing hiring on open-ended contracts and resorting to fixed-term contracts, instead.

Because of imperfect information and monitoring problems, distant jobs are riskier (see equation [1.1] above), which tends to increase the share of fixed-term contracts in establishments that are located far away from the headquarters. However, because social sanctions can also change with distance, the overall relationship between the share of fixed-term contracts L^f and distance to headquarters is complex. The total derivative of the share of fixed-term contracts with respect to distance reads:

$$\frac{dL^f}{d\delta} = -f(\bar{\gamma}, \delta) \frac{d\bar{\gamma}}{dS} \frac{dS}{d\delta} - \frac{\partial F(\gamma, \delta)}{\partial \delta} \quad [1.7]$$

When the headquarters are located in an outward-looking community, social sanctions are independent of distance ($dS/d\delta = 0$) and the first term on the right-hand side of eq [1.7] is zero: the only effect of distance is the one occurring through monitoring and imperfect information, that is (see equation [1.1] above):

$$\frac{dL^f}{d\delta} = - \frac{\partial F(\gamma, \delta)}{\partial \delta} > 0$$

which implies that the share of fixed-term contracts rises with distance when headquarters are located in outward-looking communities. In contrast, in self-centered communities, social sanctions induced by separations decrease with distance to the headquarters ($dS/d\delta < 0$). In this case, while the second term on the right-hand side is positive, the first one is negative,

which results in an ambiguous sign of $dL^f/d\delta$. In other words, when the headquarters are located in a self-centered community, the threat of social sanctions counteracts the effect of monitoring and imperfect information. If the effect of social pressure against dismissals is large enough, the share of fixed-term contracts may even decline with distance.

To sum up, our model shows that the threat of social sanctions by the local community – i.e. social pressure – may generate a negative relationship between distance to headquarters and the share of fixed-term contracts in new hires, when headquarters are located in areas characterized by self-centered communities. By contrast, when the headquarters are located in areas characterized by outward-looking communities, social pressure does not vary with distance, so that the share of fixed-term contracts in new hires is larger in distant establishments because they are more difficult to monitor and imperfect information on their local conditions increases the risk of negative shocks. The empirical validity of these predictions is investigated in the remainder of this paper.

II. The Econometric Model

II.A Distance to Headquarters, Self-centeredness and Short-term Contracts

To investigate the role of social pressure on firms' hiring behavior, we estimate the following equation:

$$L^f_{jFt} = \beta_0 + \beta_1 Dist_{jFt} + X_{jFt}\beta_2 + D_t + D_F + \varepsilon_{jFt} \quad [2.1]$$

where L^f_{jFt} denotes the share of fixed-term contracts in new hires in establishment j of firm F at year t , $Dist_{jFt}$ is the distance of establishment j to the firm's headquarters at year t and X_{jFt} is a vector of establishment-level controls. D_t and D_F are year and firm dummies, respectively, and ε_{jFt} is an error term.

We estimate this equation on our full sample of firms and separately for firms with headquarters located in self-centered and outward-looking communities. Based on our model, we expect distance to headquarters to have a positive impact on the share of fixed-term contracts when headquarters are located in outward-looking communities since the (positive) effect of monitoring and asymmetric information is not counterbalanced by the effect of social pressure. In contrast, when headquarters are located in areas where local communities are self-centered, the overall effect of distance on the share of fixed-term contracts may be negative if the impact of social pressure is strong enough. On the full sample of firms, we expect the effect of distance

to be close to zero if the composition of the sample in terms of self-centered and outward-looking communities is not too unbalanced.

We estimate equation [2.1] on secondary establishments only and hence exclude headquarters from our sample. The latter are indeed, by definition, at zero distance from themselves and are functionally different from secondary establishments so that they may have lower shares of fixed-term contracts.

Distance to headquarters, however, is likely to be endogenous. In particular, establishment location choice is unlikely to be random, so that the observed correlation between the share of fixed-term contracts in new hires and distance could be determined by the correlation between distance and unobserved establishment characteristics. For example, because monitoring establishments located further away from headquarters is more difficult, firms will open and keep such establishments only if they have productive advantages that compensate monitoring costs. If performance is, to some extent, correlated with the type of employment contracts, OLS estimates of [2.1] are likely to be biased. To address the potential endogeneity of distance, we rely on an instrumental variable (IV) strategy.

Following Bassanini et al. (2017), we instrument the distance between one establishment and its headquarters by the *potential distance* defined as the distance between the headquarters and the location where the establishment would have been located (its *potential location*) had this location been chosen only to maximize its contribution to the firm market potential (irrespective of other plant characteristics).

In economic geography, the market potential is a measure of the relative advantage of a location in terms of access to final demand (see Harris, 1954). It is defined as the sum of the purchasing capacities of surrounding local markets weighted by the inverse of their distance – which typically proxies transportation costs to customers. By analogy, we define the market potential of a multi-establishment firm F as:

$$MPF_F = \sum_k \frac{PC_k}{\min_{j \in F} \{Dist_{kj}\}}$$

where PC_k stands for the purchasing capacity of local market k and j indexes the establishments of the firm, including the headquarters. In other words, the market potential of firm F is the sum of the purchasing capacities of each local market weighted by the inverse of the distance ($Dist$) of these markets to the closest establishment of the firm. As is classical in economic geography,

we capture purchasing capacity by population¹⁸ and local markets by French employment areas.¹⁹

Let K_j denote the set of local markets for which j is the closest establishment among all establishments of firm F , i.e. for which $Dist_{kj} < \min_{i \in F \setminus \{j\}} (Dist_{ki})$ where $F \setminus \{j\}$ is the set of all establishments of firm F excluding j . Then, market potential MPF can be rewritten as:

$$MPF_F = \sum_{j \in F} \underbrace{\sum_{k \in K_j} \frac{POP_k}{Dist_{kj}}}_{CMPF_j}$$

where POP denotes population. $CMPF_j$ can be interpreted as the contribution of establishment j to the market potential of firm F . It can be seen as a proxy of the relative size of the local demand served by each establishment of F .

Once the contribution to the firm market potential is defined in this way, for each establishment of each firm in our sample, we identify the employment area where this establishment should have been located to maximize its contribution to the firm market potential. We call it the *potential location* of the establishment.²⁰ Formally, the *potential location* of establishment j (PL_j) is defined as:

$$PL_j = \operatorname{argmax}_h \{CMPF_h\} = \operatorname{argmax}_h \left\{ \sum_{k \in \left\{ Dist_{kh} < \min_{i \in F \setminus \{j\}} (Dist_{ki}) \right\}} \frac{POP_k}{Dist_{kh}} \right\} \quad [2.2]$$

where h indexes the employment areas. One concern here could be that the population we use to compute $CMPF$ is not pre-dated with respect to our sample. To overcome this problem, as suggested by the literature in economic geography, we use local terrain ruggedness as an

¹⁸ In the economic geography literature, purchasing capacity is proxied either with income-based measures (see e.g. Combes, Mayer and Thisse, 2008) or with population-based measures (see e.g. Bottazzi and Peri, 2003; Ioannides and Overman, 2004 and Briant, Combes and Lafourcade, 2010). We use a population-based measure insofar as information on aggregate income is not available at the level of employment areas. Population is measured as of 1999.

¹⁹ These are travel-to-work zones defined on the basis of daily commuting patterns as observed at the beginning of the 1990s. Employment areas correspond to local labor markets and usually contain a city and its catchment area. There are 341 such areas in mainland France with an average size of 1,570 km².

²⁰ In practice, for each firm in our sample, we pick up one of its secondary establishments and remove it. We then consider each employment area in France and consider what would be the contribution to the firm market potential if an additional plant were located there. We take the employment area that maximizes this contribution: this is the potential location. In doing so, we consider all the establishments of firm F in France (see col. (2) of Table A4) and not only the establishments belonging to our regression sample. For the computation, we assume that all establishments of F are located at the barycenter of their region. This simplifying assumption allows us to save substantial computational time, since some of our firms have hundreds of establishments.

exogenous predictor of local population.²¹ The underlying assumption is that more rugged locations are less inviting so that fewer individuals settle there. Taking the maximum value of ruggedness in our data minus the effective ruggedness of the area as an exogenous proxy of population,²² PL_j can be written as:

$$PL_j = \operatorname{argmax}_h \left\{ \sum_{k \in \{Dist_{kh} < \min_{i \in F \setminus \{j\}} (Dist_{ki})\}} \frac{RUG_{max} - RUG_k}{Dist_{kh}} \right\}$$

where RUG_k denotes ruggedness of the employment area k and RUG_{max} is the maximum ruggedness over all employment areas. We then compute the distance between the potential location and the location of the firm's headquarters, which we call *potential distance*.

To qualify as a valid instrument, potential distance must affect the share of fixed-term contracts in hiring only through actual distance, and should therefore be unrelated with any unobserved plant-specific characteristics that can affect fixed-term contracts after conditioning on actual distance. Given that the potential location has been constructed only using information on local demand, the only reasons why potential distance may affect the share of fixed-term contracts is either through actual distance or because it could be correlated with local demand. Yet, as shown in Table A1, potential distance is uncorrelated to local demand, as measured by the *CMPF*.²³ This suggests that the orthogonality condition required for instrument validity holds for the potential distance.²⁴

II.B Firm visibility and CEOs' place of living

The literature on social pressure suggests that it affects individuals' decisions only when they are visible (Della Vigna et al., 2012; Gerber et al., 2008; Funk, 2010). In our setup, this suggests that CEOs will be subject to social pressure against dismissals arising from the local

²¹ See Combes et al. (2010) and Nunn and Puga (2012).

²² Following Combes et al. (2010), local terrain ruggedness is defined here as the mode of maximum altitudes across all pixels in an employment area minus the mode of minimum altitudes, using pixels of 1 km by 1 km. The correlation between ruggedness and population across employment areas is significant at the 1% level in our data.

²³ In contrast, the actual distance to headquarters turns out to be positively correlated with *CMPF*: the coefficient of correlation is as high as 0.15 and significant at the 1% level – see Appendix Table A1. This suggests that establishments located far away from their headquarters are selected on their contribution to the firm's market potential. As a consequence, OLS estimates of equation [2.1] are likely to be biased.

²⁴ An alternative would be to construct potential distance replacing POP_k by an arbitrary constant in equation [2.2]. This instrument would be orthogonal by construction. When local demand is uniformly distributed, firms indeed maximize their market potential by locating establishments so that their contribution to the market potential is equal. This implies that potential distance is uncorrelated with the *CMPF* in the potential location and hence with the *CMPF* in the actual location. As shown in Appendix Table A6, our results are robust to using this instrument although it is not our preferred one since it contains less information.

community of their headquarters only when their firm is visible in that community. We test this prediction by estimating the following equation:

$$L^f_{jFt} = \beta_0 + \beta_1 Dist_{jFt} * HV_{Ft} + \beta_2 Dist_{jFt} * LV_{Ft} + X_{jFt} \beta_2 + D_t + D_F + \varepsilon_{jFt} \quad [2.3]$$

where HV_{Ft} is a dummy variable capturing the fact that firm F is highly visible in the employment area of its headquarters and LV_{Ft} is a dummy variable capturing low visibility of firm F at headquarters. We expect β_2 to be positive: the impact of distance to headquarters on the share of fixed-term contracts should be positive when the firm is hardly visible at headquarters since, in this case, the social pressure effect is expected to be negligible while the monitoring/asymmetric information effect should be positive. In contrast, when the firm is highly visible at headquarters, the impact of distance (i.e. β_1) is ambiguous since the positive impact due to monitoring or asymmetric information will be counterbalanced by the negative impact of social pressure.

We estimate equation [2.3] both on our full sample and separately on firms with headquarters located in self-centered and outward-looking communities. When the firms' headquarters are located in outward-looking communities, the effect of social pressure does not vary with distance, so we expect the impact of distance to headquarters on the share of fixed-term contracts in hiring to be positive and similar, whatever the degree of firm visibility. In contrast, this effect could be negative for firms that are highly visible at headquarters and with headquarters located in self-centered areas if the social pressure effect is strong enough.

CEOs are also likely to be more sensitive to the social pressure exerted by the local community at headquarters when they not only work but also live in that community. We have information on the CEO's place of living for a limited subsample of our data. We test this prediction by re-estimating equation [2.3] where the dummy variable for high/low firm visibility is replaced by a dummy variable capturing whether or not the CEO lives in the community of the firm's headquarters. We do so on the full sample and separately on firms with headquarters located in self-centered and outward-looking communities. On the full sample, we expect the impact of distance on the share of fixed-term contracts to be more positive if the CEO does not live in the community of the headquarters. In this case, the effect of monitoring and asymmetric information indeed dominates that of social pressure. When estimating our model on the sample of firms with headquarters located in outward-looking communities, we expect the impact of distance to be positive whatever the CEO's place of living, since the only effect varying with distance is that of monitoring and asymmetric information. In contrast, when

headquarters are located in self-centered communities, the impact of distance should be more negative when CEOs live in the community of the headquarters as compared to when they do not.

II.C Distance based on social ties

The concept of distance that we have used so far is geographical (physical). We have assumed that, when headquarters are located in self-centered communities, as the distance between the establishment and its headquarters increases, social pressure decreases. The underlying assumption is that, as physical distance increases, social ties become looser,²⁵ which tends to decrease social pressure and hence the adjustment cost associated with open-ended contracts. To implement a more direct test of our theory, we use a concept of distance based on the intensity of social ties among communities. When doing so, we still expect that, for headquarters located in self-centered communities, the share of fixed-term contracts in hiring will decrease with distance, i.e. when communities at headquarters and at plant are less strongly socially connected. Conversely, monitoring and asymmetric information problems should not vary with distance, except if trust decreases when social ties get looser. In this case, if trust reduces opportunistic behavior or makes workers more likely to share information with managers (see e.g. Bandiera, Barankay and Rasul, 2008), the share of fixed-term contracts in hiring should increase with distance, even when the latter is measured based on social ties.

We take these predictions to the data by considering that an establishment is located close to headquarters in terms of social ties when a high proportion of individuals living at headquarters were born in the geographical area of the establishment. We then estimate the following equation:

$$L^f_{jFt} = \beta_0 + \beta_1 SocDist_{iFt} + X_{iFt}\beta_2 + D_t + D_F + \varepsilon_{iFt} \quad [2.4]$$

where $SocDist_{iFt}$ is our proxy of the social distance of establishment j to the firm's headquarters. With this specification, we expect to find $\beta_1 \geq 0$ for firms with headquarters located in outward-looking communities, with $\beta_1 > 0$ if the lack of trust is an important determinant of monitoring and asymmetric information problems. In contrast, we expect to find $\beta_1 < 0$ for firms with headquarters located in self-centered communities if social pressure against dismissals is strong enough or if monitoring and asymmetric information problems do not depend much on the strength of social ties.

²⁵ See footnote 14.

III. The Data

The data that we use come from matching several data sources. The first one is the social security records – the DADS, *Déclarations Annuelles de Données Sociales* over the period 1997-2009. They cover the universe of establishments and firms in all industries except agriculture, part of the food-processing industry and rural financial institutions (e.g. Crédit Agricole). They have yearly information on the municipality (or *arrondissement*²⁶) where the establishment is located as well as its age and industry. They also provide the number of employees as well as the gender and (1-digit) occupational structure of the workforce.

For each establishment in the DADS, we know the identifier of its headquarters and the municipality/*arrondissement* where they are located. To the extent that a firm may change headquarters over years, the location of the headquarters will be time-varying in our data. The DADS also have information on the legal category of the firm to which the establishment belongs (business company, public administration, charity etc.).

The visibility of a firm in the employment area of its headquarters is assumed to be an increasing function of its share of local employment. As can be seen in Appendix Table A2, the distribution of the shares of firms' employment in the employment area of their headquarters is quite skewed. So, in our empirical analysis, we capture high visibility with a dummy variable equal to 1 when the firm belongs to the upper 25% of the distribution and 0 otherwise. Similarly, low visibility is captured by a dummy variable equal to 1 when the firm belongs to the lower 75% of the distribution and 0 otherwise.

The second source that we use is the DMMO/EMMO databases. The DMMO (*Déclarations sur les Mouvements de Main-d'Oeuvre*) has exhaustive quarterly data on gross worker flows for establishments with 50 employees or more. The EMMO (*Enquête sur les Mouvements de Main-d'Oeuvre*) has similar information on a representative sample of 25% of the establishments with 10 to 49 employees.²⁷ Both databases have information on hiring flows (excluding temporary agency workers) and the type of contract on which employees are hired.²⁸ We compute the shares of fixed-term contracts in hiring for each quarter over 1998-2009. Establishments are missing at one quarter either when absent that quarter or when hiring is 0.

²⁶ *Arrondissements* are subdivisions of municipalities. They exist only for the three largest French cities: Paris, Lyon and Marseille.

²⁷ We do not have any information on worker flows for establishments with less than 10 employees.

²⁸ The type of contract on which individuals are employed is not available for transfers. So, we cannot include them in our analysis.

Given that firms' headquarters only vary on a yearly basis, we then aggregate the share of fixed-term contracts in hiring at the year level.

The *Répertoire Géographique des Communes*²⁹ provides information on the latitude and longitude of municipalities. Similar information for the *arrondissements* of Paris, Lyon and Marseille has been gathered from the website *Carte de France*.³⁰ Great-circle distances between establishments are computed assuming that each establishment is placed at the barycenter of the municipality/*arrondissement* to which it belongs. This is, of course, a simplifying assumption. However, given that the largest cities are divided into *arrondissements* and that there are 36,570 municipalities in France – of which only 0.04% have a surface larger than 190 km² – the error we are making on the actual location is very small.³¹ Given our definition of distance, the distance between two establishments located in the same municipality/*arrondissement* is zero by construction. We also have information on the 94 *départements*³² to which municipalities belong and the *Base Communale des Zones d'Emploi* allows us to know in which employment area each municipality is located.³³

We build a second measure of distance across establishments and headquarters, based on social ties. To do so, we use information from the French Labor Force Surveys for pre-sample years 1988 to 1997. More specifically, we consider the proximity between headquarters located in municipality A and a given establishment located in municipality B to be an increasing function of the average share of individuals living in the *département* of A who were born in the *département* of B. The underlying assumption is that the greater this proportion, the more important the social and family ties across the populations of both *départements*. This suggests taking the inverse of proximity as a measure of distance. Yet, this is problematic since birthplace proximity is very concentrated around 0 (i.e. skewed) – see Figure A1. To overcome this problem, we rank all couples of *départements* from those with the highest (rank 1) to those with the lowest (rank 8,188) proximity. We define birthplace distance as the position in this ranking and use it as a measure of distance based on social ties. Unsurprisingly, birthplace distance turns out to be positively correlated with physical distance but this correlation is far from perfect (see Figure A2).

²⁹ This database is produced by the French *Institut National de l'Information Géographique et Forestière* (IGN).

³⁰ <http://www.cartesfrance.fr/>

³¹ All French municipalities but nine are no larger than a square of 14x14 km. Therefore, assuming that establishments are located at the barycenter implies that the maximum possible error for these 36,561 municipalities is less than 10 km.

³² *Départements* are administrative subdivisions larger than municipalities but smaller than regions.

³³ This database is provided by the French Statistical Institute (INSEE).

Information on the level of self-centeredness of the area where the firm's headquarters are located is obtained through two different proxies. The first one is based on the differential turnout rates at local versus national elections. Election turnout rates are provided by the French Ministry of Interiors for all French municipalities. We aggregate turnout rates at the level of *départements* and we proxy self-centeredness with the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and at the 2000 national referendum (on the 5-year – instead of 7-year – term for the President of the Republic). The underlying assumption behind this measure is that more self-centered individuals will be relatively more concerned by local stakes than by national ones, so that their participation to local elections (as compared to a national referendum) will be higher. We consider headquarters as located in outward-looking *départements* when the headquarters' *département* belongs to the bottom 25% of the distribution of differences in turnout rates at the municipal elections and national referendum. Symmetrically, we attribute headquarters to self-centered *départements* when the headquarters' *département* belongs to the top 75% of the distribution. This cutoff allows splitting our sample of firms into two subsamples of approximately equal size. Descriptive statistics for the difference between municipal and national elections' turnout rates and its geographical distribution are provided in Appendix Table A2 and Appendix Figure A3. The difference is positive all over the distribution, indicating that election turnout was systematically higher at the 2001 municipal elections than at the 2000 national referendum.

This measure of self-centeredness captures situations in which members of a community feel directly concerned by what occurs to that community. As mentioned in Section I, self-centeredness could alternatively originate from the fact that individuals are selfish but the economic shocks undergone by their community co-members have an indirect effect on their utility, for example through the chain effects on their revenue. To capture this possibility, we use a second measure of self-centeredness based on charity donations. The underlying assumption is that less selfish people will be more prone to make donations. Another advantage of this measure is that we have access to historical data on charity giving. This allows us to make sure that our results are not driven by a correlation between local economic conditions, self-centeredness and the share of fixed-term contracts in hiring. The data we use come from the 1890 *Annuaire Statistique de la France*, from which we compute the total *département*-level receipts of local secular charity centers as of 1887. We standardize these donations by

département GDP.³⁴ Similarly to what we do for election turnout, we consider that headquarters are located in self-centered *départements* when the latter belong to the bottom 75% of the donation-to-GDP distribution. Symmetrically, headquarters are considered to be located in outward-looking *départements* when they belong to the top 25% of the distribution. The distribution of charity donations to GDP by *département* is shown on Appendix Table A2 and Appendix Figure A4. Visual inspection of Figures A3 and A4 shows that a large part of the *départements* classified as outward looking on the basis of election turnout – i.e. featured as light blue in Figure A3 – are also classified as outward looking on the basis of charity donations – i.e. featured as dark blue in Figure A4.

We match these data sources and keep all business companies – excluding non-profit organizations (charities, foundations, etc.) and public administrations. We only keep firms with at least two secondary establishments in our dataset³⁵ since we compare the shares of fixed-term contracts across firms' secondary establishments. We drop establishments for which the proportion of fixed-term contracts in hiring or some of our establishment-level controls are missing. The distributions of headquarters and secondary establishments by employment area are presented in Appendix Figures A5 and A6, respectively. Our preferred sample excludes establishments with headquarters located in the Paris area and its close suburbs (the so-called "*Petite Couronne*") because these headquarters represent more than 30% of all headquarters in France. Moreover, Paris and its close suburbs turn out to be systematically outward-looking areas (whether measured on the basis of election turnout or charity donations). Our final sample contains 23,126 distinct establishments belonging to 4,954 different firms. However, as shown in Section IV, our results are robust to including Paris and its close suburbs or, conversely, excluding the whole Ile-de-France (i.e. the larger region of which Paris is the administrative capital).

Starting in 2003, the DADS dataset also allows us to determine where CEOs live to the extent that they are wage-and-salary employees of their firm. Unfortunately, in France, this is not always the case since CEOs may alternatively be *mandataires sociaux* who are assimilated to self-employed from the point of view of social security and are hence out of the scope of the DADS. So, we have information on the CEOs' place of living only for a fraction of the

³⁴ Note that the ratio of historical donations to GDP is correlated with the current (2003-2010) ratio of charity donations to taxable income (computed at the level of *départements*). The estimated correlation coefficient is 0.22, statistically significant at the 5% level of confidence. The source of current charity donations and taxable income is the French Ministry of Finance. Historical *département*-level GDP is provided by Delafortrie and Morice (1959). It is measured as of 1864, which is the year closest to 1887 for which such information is available.

³⁵ These establishments may not be observed the same year. For example, in the case of 2 establishments, one of them may be observed at one year and the other one at another year.

observations in our preferred sample, namely 2,169 firms covering 7,722 establishments.³⁶ We use these data to construct a dummy variable equal to 1 if the CEO lives within 50 km from the firm's headquarters and 0 otherwise. Moreover, we define a dummy variable equal to 1 if the CEO lives further away from the headquarters and 0 otherwise. In this subsample 67.7% of CEOs live and work at the firm's headquarters.

Descriptive statistics of our main regression sample are provided in Appendix Table A3. The unweighted average share of fixed-term contracts amounts to about 57.5% of hiring in our data. To get a more representative picture of aggregate hiring flows, we can compute the weighted sum of the number of hires on fixed-term contracts over all establishments for each quarter and divide it by the weighted sum of all hiring in all establishments.³⁷ The resulting aggregate figure is 73.2% which is very close to the one provided by the French Ministry of Labor for the period 1999-2009 for the whole of France, i.e. 71.8% – see DARES (2015). The gap between the aggregate and the unweighted figures suggests that large establishments (with large hiring volumes) are characterized by shares of fixed-term contracts that are larger than average. The distribution of these shares by employment area is shown in Appendix Figure A7.

The mean and median numbers of secondary establishments per firm and year in our sample are 3 and 1 respectively – see Appendix Table A4 – col (1). Over the period 1998-2009, the average number of headquarters per firm in our sample is 1.17, but 91.8% of our establishments do not change headquarters. The average physical distance between secondary establishments and headquarters is 239 km – see Appendix Table A5. The mean distance to the closest establishment is 97 km, and 263 km to the farthest establishment. The corresponding figures for birthplace distance are rank 2,088 for the mean distance between secondary establishments and headquarters, rank 641 for the distance from headquarters to the closest establishment and rank 2,243 for the distance to the farthest establishment – with respect to a ranking ranging between 1 and 8,188.

IV. Results

IV.1 Graphical Evidence

We first provide graphical evidence of the association of distance to headquarters with the share of fixed-term contracts in new hires. To do so, we rank all establishments in our

³⁶ For comparison, over the same period (2003-2009), the sample used in Table 1 covers 4,116 firms and 17,601 establishments.

³⁷ Using aggregation weights provided in the DMMO-EMMO.

dataset according to their distance to their firm's headquarters. We group these distances in 40 bins and compute the mean proportion of fixed-term contracts in new hires in each bin. Figure 2 plots this proportion as a function of the mean distance in each bin.

On our full sample, the correlation between distance to headquarters and the share of fixed-term contracts turns out to be slightly positive with a coefficient of correlation of 0.3, although insignificant at conventional levels. In the light of our model, this could result from the combination of a positive effect in firms with headquarters located in outward-looking communities and an ambiguous, but possibly negative, effect in firms with headquarters located in self-centered communities.

We then consider separately firms with headquarters located in outward-looking and self-centered *départements*. Whatever the measure of self-centeredness we use (either based on election turnout or on charity donations), we find that the share of fixed-term contracts increases with distance to headquarters for firms with headquarters in outward-looking communities, with coefficients of correlation ranging from 0.56 to 0.58 (significant at conventional levels). This is consistent with our theory which suggests that for such firms, the positive relation between distance to headquarters and the share of fixed-term contracts generated by monitoring and asymmetric information problems is not mitigated by local social pressure since local communities at headquarters equally oppose dismissals wherever they take place. In contrast, the correlation between distance to headquarters and the share of fixed-term contracts turns out to be negative for firms with headquarters located in self-centered communities (with coefficients of correlation ranging from -0.41 to -0.38 and significant at conventional levels): those firms hire more workers on fixed-term contracts in establishments located close to headquarters in order to escape adjustment costs associated with local social pressure opposing dismissals when they take place at short distance from the headquarters.

This evidence remains, of course, only suggestive since it is based on raw correlations. We now turn to regression analysis to confirm it.

IV.2 Main Results

Table 1 presents the IV estimates of the impact of physical distance to headquarters on the share of fixed-term contracts in hiring. Our specification includes year dummies, firm fixed effects as well as a number of establishments' characteristics: establishment age (6 classes) and size (7 classes), the occupational and gender structure of the workforce, the firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying

unemployment in the *département* where the establishment is located, employment-area fixed effects and 4 dummies for missing establishment in a given quarter. Controlling for establishment age is important since older establishments may offer more stable positions (see Haltiwanger, Jarmin and Miranda, 2013) while being located closer to headquarters – as evidenced by Neumark, Zhang and Ciccarella (2008) in the case of Wal-Mart supermarkets. Large plants may also be located closer to headquarters and we have observed above that they tend to have a greater share of fixed-term contracts amongst new hires. By contrast, firms with several establishments in the same employment area, and therefore a large overall size in that area, may employ a larger share of individuals on open-ended contracts to the extent that it may be easier for them to relocate employees to another plant in case of negative shock. This is why we control for both establishment size and firm size in the establishment's employment area. The occupational and gender structure of the workforce may also matter since women and unskilled employees may be more likely to be on fixed-term contracts. Combined with firm dummies, employment-area dummies capture the relative attractiveness of the establishment's location. Finally, we control for time varying unemployment because, beyond time-invariant characteristics of local labor markets, establishments located in more dynamic areas may be more likely to have larger shares of fixed-term contracts.

As indicated by the first-stage coefficients, whatever our specification, potential distance to headquarters is strongly correlated with actual distance so that our instrument is not weak – see Table 1.

Column 1 of Table 1 presents the second-stage estimates on our full sample of observations. The impact of distance to headquarters on the share of fixed-term contracts is very small and insignificant at conventional levels. This is consistent with our theory and with the graphical evidence provided in Subsection IV.1: to the extent that our sample is composed of firms with headquarters located in both self-centered and outward-looking communities, the average impact of distance to headquarters on fixed-term contracts results from two counteracting effects – i.e. monitoring/asymmetric information and local social pressure – which makes it likely to be close to zero. When considering separately establishments of firms with headquarters located in self-centered and outward-looking *départements*, we confirm that the pattern of impact of distance to headquarters on the share of fixed-term contracts in hiring is opposite across firm types. For establishments with headquarters located in outward-looking *départements* as measured on the basis of differential turnout at the local and national elections, distance to headquarters has a positive and significant impact on the share of fixed-term

contracts in hiring – see Table 1, col (2). Results are similar when outward-looking attitude is measured on the basis of charity donations – see Table 1, col (4). In the absence of social pressure aiming at protecting jobs located close to headquarters, the only effect that is at play is that of asymmetric information and monitoring: since establishments located further away from headquarters are harder to manage, they face more frequent shocks and hence rely more on fixed-term contracts when hiring. In contrast, for establishments with headquarters located in self-centered *départements*, local social pressure plays an important role, beyond monitoring problems. As a matter of fact, the impact of physical distance to headquarters on the share of fixed-term contracts turns out to be negative whatever the measure of self-centeredness we use – see Table 1, cols (3) and (5).³⁸ This suggests that the pressure exerted by the local communities at headquarters in order to avoid dismissals at short distances overcomes the effect of monitoring and asymmetric information. As a consequence, establishments located closer to headquarters hire more on fixed-term contracts. From a quantitative point of view, our results imply that when distance to headquarters increases by 100 km, the share of fixed-term contracts decreases by 2.84 percentage points – see col (3), i.e. by 4.9% as measured at the sample average (57.5%).³⁹

As mentioned in Section II.B, CEOs are likely to be subject to social pressure only if their firm is visible in the local community of their headquarters. To test for this prediction, we estimate equation [2.3] considering that a firm is highly visible when it accounts for a large share of employment in the employment area of its headquarters.⁴⁰ As shown in Table 2 col (1), when estimated on the full sample of establishments, the impact of physical distance on the share of fixed-term contracts in hiring is positive (significant at the 5% level) for establishments of firms with low visibility. This is consistent with our theoretical framework, since for firms that are hardly visible at headquarters, social pressure is likely to be inexistent so that the effect of monitoring and asymmetric information problems dominates. This generates a positive relationship between distance to headquarters and the share of fixed-term contracts. In contrast,

³⁸ As shown in Appendix Table A6, these findings are robust to using, as an instrument, a measure of potential distance constructed using an arbitrary constant instead of ruggedness – see footnote 24.

³⁹ OLS estimates of equation [2.1] are presented in Table A7 in the Appendix. For establishments of firms with headquarters in outward-looking *départements*, the impact of distance to headquarters on the share of fixed-term contracts in hiring is virtually zero – see Table A7 cols (2) and (4). This is due to the fact that, when estimated by OLS, this relation suffers from selection bias since establishments located far away from headquarters undergo the most serious monitoring problems so that they may not survive or may not even be created. This generates a downward bias in the estimates. In contrast, for establishments of firms with headquarters located in self-centered *départements*, the point estimate on distance remains negative and significant – see Table A7 cols (3) and (5).

⁴⁰ Since firm visibility is likely to be strongly correlated with local firm size, we control for the interactions between distance to headquarters and a set of dummies of firm size in the employment area of the headquarters. Results are however similar if these controls are not included.

for firms that are highly visible at headquarters, the effect of social pressure is much stronger which offsets that of monitoring and asymmetric information. As a consequence, the impact of distance to headquarters on the share of fixed-term contracts turns out to be negative although not significant at conventional levels.

Results obtained when estimating our model separately on establishments of firms with headquarters located in self-centered and outward-looking *départements* are consistent with this pattern of results. When firms' headquarters are located in outward-looking *départements*, social pressure arising from the local community does not vary with distance so that the effect of monitoring and asymmetric information dominates – see cols (2) and (4) of Table 2: the point estimates of distance to headquarters are positive, close to each other whatever the visibility of the firm at headquarters – and significant except in the case of charity donations and highly visible firms. In contrast, for firms with headquarters located in self-centered *départements*, social pressure plays an important role when the firm is highly visible at headquarters – see cols (3) and (5): in this case, the impact of distance on the share of fixed-term contracts is negative and significant at the 5% level. Establishments located close to headquarters tend to hire more on fixed-term contracts as a way to escape social pressure when their firm is highly visible at headquarters and the latter are located in a self-centered community. Conversely, whenever local communities at headquarters are self-centered but the firm is not visible, the impact of distance on the share of fixed-term contracts in hiring is positive although insignificant.

We also expect CEOs to be more sensitive to social pressure when they not only work but also live in the community of the firm's headquarters. To test for this prediction, we re-estimate equation [2.3], substituting dummy variables for CEOs living/not living at headquarters for firms' high/low visibility. When estimating our model on the full sample of establishments, the impact of physical distance on the share of fixed-term contracts in hiring is positive (significant at the 1% level) when CEOs do not live at headquarters – see Table 3, col (1). In this case, their sensitivity to social pressure is low so that the effect of monitoring and asymmetric information dominates, which generates a positive relationship between distance to headquarters and the share of fixed-term contracts. In contrast, when CEOs live at headquarters they are more sensitive to social pressure, which counterbalances the effect of monitoring and asymmetric information. In this case, the impact of distance to headquarters on the share of fixed-term contracts turns out to be insignificant at conventional levels.

We then estimate our model separately on establishments of firms with headquarters located in outward-looking and self-centered *départements*. As expected, for firms with

headquarters located in outward-looking *départements*, the impact of distance to headquarters on the share of fixed-term contracts is positive and significant whatever the place of living of the CEO – see Table 3, cols (2) and (4). This result holds whether we measure self-centeredness on the basis of election turnout or charity giving. Conversely, for firms with headquarters in self-centered *départements*, distance to headquarters has a negative and significant effect on the share of fixed-term contracts when CEOs live at headquarters, while the effect is insignificant for CEOs not living at the headquarters – see Table 3, cols (3) and (5). These findings yield support to the hypothesis that CEOs are more sensitive to social pressure in the community of the headquarters when they live in that community.

IV.3 Robustness Checks and Extensions

One could be concerned that our measure of self-centeredness based on election turnout dates back to year 2001 and therefore is not pre-dated with respect to our sample which spans from 1998 to 2009. This could be a problem if the difference in turnout rates between municipal and national elections is simultaneously correlated with local economic conditions and the share of fixed-term contracts in hiring. To overcome this problem, we re-estimate columns (2) and (3) of Table 1 on a reduced sample limited to years 2003-2009. The results are unchanged: the point estimate (resp. standard error) on distance is 0.0193 (0.0056) when headquarters are located in outward-looking communities and -0.0274 (0.0078) when headquarters are located in self-centered communities.

Our main findings suggest that, when firms are highly visible at headquarters or CEOs live in the community of the headquarters, local social pressure counterbalances monitoring and asymmetric information effects so that the impact of distance to headquarters on the share of fixed-term contracts is no longer clearly positive and significant. This is confirmed by the fact that this relation is negative when firm headquarters are located in a self-centered *département*. However, when splitting our sample across establishments with headquarters located in self-centered and outward-looking communities, one concern could be that the self-centeredness of a *département* could capture other local characteristics such as economic deprivation or specialization, openness, social composition, religiosity or criminality. If this were the case, the difference that we find in the impact of physical distance on the share of fixed-term contracts according to the degree of self-centeredness of the *département* of the headquarters could actually be due to the fact that more outward-looking (resp. self-centered) communities are so because they are richer, more (or less) educated, open or religious, or less affected by property and/or violent crimes. In order to tackle this issue, we estimate, on our full

sample of observations, a model in which the share of fixed-term contracts is regressed on physical distance to headquarters interacted with the dummy variables for self-centeredness and outward-looking attitude, controlling for additional interactions between physical distance and potential confounders – as measured in the *département* of the headquarters. As regards election turnout, the potential confounders we include are: GDP per capita in 2005, the employment share of the tertiary sector (excluding public administration) in 2000, the time-varying unemployment rate, the poverty rate in 2006, the share of youth (aged 25 and less) in the population in 1999, the share of individuals aged 25-34 without any diploma in 2011, a dummy variable for a high proportion of foreigners in the local population in 1982, a dummy variable for whether the *département* is mostly urban in 2000, property and violent crime rates in 2011 and the average proportion of Catholics in 2005-2009.⁴¹ Concerning charity giving, the potential confounders that we consider are *département* GDP per capita as of 1864, the share of agriculture in total employment in 1896, the birth and literacy rates in 1886, a dummy variable for a high proportion of foreigners in the local population in 1891, and property and violent crime rates in 1887.⁴²

By controlling for the interaction between physical distance and each of these variables,⁴³ we make sure that the differential impact that we find in low and high election-turnout (resp. high and low-donation) *départements* is due to the interplay of local social pressure and self-centeredness rather than to other economic or cultural local characteristics. The corresponding results are presented in Appendix Table A8. Columns (1) and (3) estimate a model which only includes the same baseline controls as in Table 1. As expected, the results of this specification are similar to those in columns (2) to (5) of Table 1:⁴⁴ whatever the measure

⁴¹ Sources for these potential confounders are as follows: the employment share of the tertiary sector and the dummy variable for mostly urban *département* come from the OECD Regional Economy database, the proportion of foreigners in the local population from Todd and Le Bras (2013), property and violent crime rates from the *Institut National des Hautes Etudes de la Sécurité et de la Justice*, the proportion of Catholics from IFOP, while all remaining variables come from INSEE.

⁴² This set of potential confounders is reduced as compared to the one used for election turnout due to limited availability of historical data. We also take into account the fact that the economy and society have evolved over the past century. This is why we use, for example, the employment share of agriculture as a measure of economic specialization in the late XIX century, while we use the employment share of the tertiary sector at the beginning of the XXI century. Sources for these confounders are: Delafortrie and Morice (1959) for GDP per capita, Combes et al. (2011) for the share of agriculture in total employment, Bignon and Garcia-Peñalosa (2018) for birth and literacy rates, Todd and Le Bras (2013) for the proportion of foreigners, and *Compte Général de l'Administration de la Justice Criminelle en France* for crime rates.

⁴³ Each interaction is instrumented by the interaction between potential distance and the corresponding potential confounder.

⁴⁴ In fact, the coefficients reported in Table 1 can be seen as the results of the estimation of a model in which each covariate has been interacted with dummies for self-centered and outward-looking *départements*. As such, the model underlying Columns (1) and (3) in Table A8 can be seen as a constrained version of the model underlying Columns (2)-(3) and (4)-(5) of Table 1, respectively.

we use, physical distance has a positive and significant impact on the share of fixed-term contracts in establishments with headquarters located in outward-looking *départements*, while its impact is negative and significant for establishments with headquarters located in self-centered communities. The results are virtually the same when adding controls for physical distance interacted with potential confounders – see cols (2) and (4). This suggests that our findings are not driven by differences in economic development or social characteristics across *départements*.⁴⁵

So far, we have classified *départements* as self-centered or outward-looking in a way that allows us having approximately the same number of firms in both groups. However this partition remains somewhat arbitrary. As a robustness check, we re-estimate the specification in Table A8 using outward-looking attitude as a continuous – rather than dichotomized – variable. Our findings are unchanged. The point estimate on the interaction between distance to headquarters and the intensity of self-centeredness as measured on the basis of election turnout is -0.739 with standard error 0.341, significant at the 5% level. Similarly, the point estimate on the interaction between distance to headquarters and self-centeredness as measured by 1 – *charity giving* is -18.38 with standard error 5.33, significant at the 1% level. This confirms that the negative relationship between distance and short-term contracts gets stronger when self-centeredness at headquarters is higher.

When estimating equation [2.1], our preferred sample excludes headquarters located in the Paris area since, as they represent more than 30% of all French headquarters, our results might be overwhelmingly affected by unobserved characteristics of the Paris area – which is by far the largest metropolitan area in France. However, we want to check that our estimates are robust to including these establishments back into our sample. The resulting estimates are presented in Appendix Table A9. When we do so, the number of observations with headquarters located in outward-looking *départements* is multiplied by more than 2 whereas the number of those in self-centered *départements* does not change. Despite this major difference, our results

⁴⁵ One could be concerned that our indicator of outward-looking attitude could actually capture the level of trust in the *département* of the headquarters. It has been shown that the greater the trust at headquarters, the higher the level of decentralization of multi-establishment companies since CEOs are more confident that problems in secondary plants are solved correctly by local employees (see e.g. Bloom, Sadun and Van Reenen, 2012). So, in our framework, CEOs in high-trust areas are likely to perceive a lower job risk in distant plants than CEOs in low-trust areas. If trust negatively correlates with self-centeredness at headquarters, we may expect that firms with headquarters in self-centered *départements* have higher shares of fixed-term contracts in plants located further away from headquarters since they perceive higher risk of negative shock in those plants. Omitting the interaction between distance and trust at headquarters should generate a bias towards zero in our estimates. Given that we find a negative and significant coefficient on the interaction between distance and self-centeredness at headquarters, this suggests that our findings cannot be explained by the omission of trust.

are similar – see Table A9, Panel A - cols (1) to (5). Estimates on the full sample yield a positive although insignificant impact of physical distance on the share of fixed-term contracts. For establishments of firms with headquarters in outward-looking *départements*, the impact of distance to headquarters on the share of fixed-term contracts in hiring is positive and significant at the 10% level. Alternatively, we may want to exclude the whole administrative region including Paris (the so-called *Ile de France*). When we do so, our results are unchanged – see Table A9, Panel B – cols (1) to (5): the impact of physical distance on the share of fixed-term contracts is positive but insignificant when estimated on the full sample of firms. It is positive and significant at the 1% level for establishments with headquarters located in outward-looking *départements*, while it is negative and significant for establishments with headquarters located in self-centered *départements*.

Our theory relies on the assumption that adjustment costs associated to dismissals decrease as social ties get looser. So, an additional test consists in re-estimating our main specification using a measure of distance based on social ties rather than mere physical distance – see equation [2.4]. The corresponding results are presented in Table 4. When estimations are run on the full sample of observations, the impact of birthplace distance on the share of fixed-term contracts in hiring is negative although insignificant – see col (1). This is consistent with what we obtain when estimating the model separately for firms with headquarters located in self-centered and outward-looking *départements*. Whatever the measure of self-centeredness we use, the impact of birthplace distance is still positive but insignificant for firms with headquarters in outward-looking *départements* – see col (2) and (4). This is not surprising since a measure of distance based on social ties is less relevant than physical distance as regards monitoring problems. By contrast, this relationship is still negative and significant for firms with headquarters in self-centered *départements* – see col (3) and (5).⁴⁶ These findings confirm that, as social pressure decreases with birthplace distance, adjustment costs on open-ended contracts tend to be higher for establishments located in areas that are more socially connected to the area of the headquarters. This translates into the fact that these establishments rely more on fixed-term contracts whenever their headquarters are located in a self-centered community.

⁴⁶ Point estimates are smaller than in Table 1. This reflects the fact that measurement units are different for birthplace and physical distances: the standard deviation of the former is ten times larger than that of the latter.

V. Alternative Explanations

Could factors other than local social pressure account for the negative relationship that we find between distance to headquarters and the share of fixed-term contracts in hiring when firms' headquarters are located in self-centered communities? This is what we investigate in this section.

One reason why firms could rely more on fixed-term contracts at short distance from headquarters is that there is no need to offer open-ended contracts to attract good employees since the proximity with the firm's management is enough to make jobs attractive. This would generate a negative relationship between distance to headquarters and the share of fixed-term contracts in hiring. However, this relation should hold whatever the degree of self-centeredness of the local community at headquarters while we observe that this is the case only for firms with headquarters located in self-centered communities. For firms with headquarters in outward-looking *départements*, this relation is indeed positive and significant at the 1% level.

The negative relationship we find between distance to headquarters and the share of fixed-term contracts in hiring could also originate from workers' screening. Firms may be more selective when hiring workers closer to headquarters because the jobs at stake involve more responsibility. If, as suggested by Faccini (2014), temporary contracts are used as screening devices allowing firms to learn about workers' productivity, these contracts will be more in use closer to the firms' headquarters. However, here again, this relationship should hold whatever the degree of self-centeredness of the local community at headquarters, which is not the case in our results. Moreover, there is no reason that this relationship varies with firm visibility or with the place of living of the CEO.

An alternative explanation could rely on unionization. Headquarters and surrounding areas might be more unionized because there is more scope for bargaining due to the proximity with the CEO. There is evidence that, in Europe, unionized plants are more likely to have temporary workers (Salvatori, 2009). The reason for this is twofold. First, unions support the use of fixed-term contracts because this protects insiders whenever staff adjustments have to be done. Second, employers have incentives to hire workers on fixed-term contracts because this makes staff adjustments easier in the presence of unions. If there is a positive correlation between unionization and self-centeredness, the former may also explain why we find a negative relationship between distance to headquarters and the proportion of fixed-term contracts in hiring only for firms with headquarters located in self-centered areas. In our data we actually observe that the turnout rate at the elections for lay judges in employment tribunals

(*Conseil des Prud'hommes*) is higher in self-centered than in outward-looking *départements* (34% as compared to 31%). In France, all candidates at these elections are union members. Given that union membership is very low (5% in the private sector) but that almost all workers are covered by collective agreements, participation to employment tribunal elections is considered a good proxy of unions' strength (Burgess, Corby and Latreille, 2014). This suggests that unions are indeed stronger in self-centered than in outward-looking *départements*. To make sure that this difference is not driving our results, we re-estimate the model in Table A8 – cols (2) and (4) adding an interaction term between distance to headquarters and the turnout rate at employment tribunal elections in the *département* of the headquarters in 2002. Our results are virtually unchanged.⁴⁷ This suggests that our results do capture the impact of local social pressure rather than local unionization.

Local employment subsidies may be another factor driving our results. They are typically given to firms (that are profit centers) and not establishments (that are not). If local authorities condition these subsidies on the fact that they are used for hiring workers locally, firms will hire more workers close to headquarters and, if they perceive the subsidies as temporary, the new hires will be on fixed-term contracts. This could account for the negative relationship between distance to headquarters and the share of fixed-term contracts in hiring. However, we do not find any impact of distance to headquarters on total hiring – see Table A10 –, even in establishments of firms with headquarters located in self-centered *départements*. This suggests that local subsidies are unlikely to explain our results.

Our results could also be driven by within-firm social pressure rather than by social pressure arising from the local community at headquarters. When the latter is self-centered, employees of establishments located in the same *département* as the headquarters are likely to be self-centered as well. In this case, they will care about dismissals to the extent that the latter represent a threat to them. So, they will put pressure on CEOs to avoid dismissals at short distances from the headquarters. The literature suggests that CEOs are sensitive to the social pressure arising from their employees, in particular when the latter are geographically close to them – see Cronqvist et al. (2009) and Drzensky and Heinz (2016). If so, CEOs could hire workers on short-term contracts close to headquarters in order to escape the social pressure arising from within their firm. However, if this were the case, the negative impact of distance

⁴⁷ The point estimate (resp. standard error) is 0.0187 (resp. 0.0077) on physical distance interacted with outward-looking headquarters and -0.0333 (resp. 0.0142) on physical distance interacted with self-centered headquarters for self-centeredness measured on the basis of local vs national election turnout and 0.0275 (resp. 0.0108) on physical distance interacted with outward-looking headquarters and -0.0380 (resp. 0.0126) on physical distance interacted with self-centered headquarters for self-centeredness measured on the basis of charity giving.

to headquarters on the share of fixed-term contracts should not vary with firm visibility at headquarters. Now, we have shown that for establishments of firms with headquarters in self-centered *départements*, this effect is significant only for firms with high visibility at headquarters. This suggests that social pressure arises, at least partially, from outside the firm since it is effective only when the actions of the firm are visible to the local community.

Finally, one may worry that our regressions could capture the effect of some characteristics of the headquarters' *département* that could be correlated both with self-centeredness and with the propensity to use fixed-term contracts in that *département*. This is not the case since all our specifications include very detailed employment-area fixed effects, thereby netting out our estimates from any geographical effect of this type.

VI. Conclusion

This paper has examined the impact of local social pressure on the choice of employment contracts. We have shown that for firms with headquarters located in self-centered communities, the share of fixed-term contracts in hiring is larger in establishments located closer to headquarters while the opposite holds for firms with headquarters located in outward-looking communities. These findings are the same whether we use a measure of self-centeredness based on election turnout or on charity giving. They are also robust to using a measure of distance to headquarters based on social ties rather than geography. We have also shown that the negative impact of distance to headquarters on the share of fixed-term contracts when headquarters are located in self-centered communities is concentrated on firms that are highly visible at headquarters and whose CEOs not only work but also live in the community of the headquarters. This suggests that when CEOs are subject to local social pressure against dismissals, they try to escape it by hiring workers on fixed-term contracts. We have shown that these findings are consistent with an adjustment-cost model of employment-contract decisions made by CEOs under the threat of local social sanctions. In contrast, they cannot be accounted for by alternative mechanisms involving workers sorting or screening, unionization, local employment subsidies or within-firm social pressure.

Beyond local social pressure, firms' employment decisions may also react to the threat of social sanctions on a larger scale, typically national or international. The campaign against the use of child labor by Nike in 1996 indeed turned out to have substantially changed the

human resource practices of the company since then.⁴⁸ The growing development of social networks should, if anything, strengthen the impact of the national and/or international reputation of firms on their sales and ultimately on their profits. How this changing face of social pressure may affect firms' human resource management strategies is a fascinating avenue for future research.

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⁴⁸ See for example John H. Cushman Jr., “Nike Pledges to End Child Labor and Apply U.S. Rules Abroad”, The New York Times, May 13, 1998.

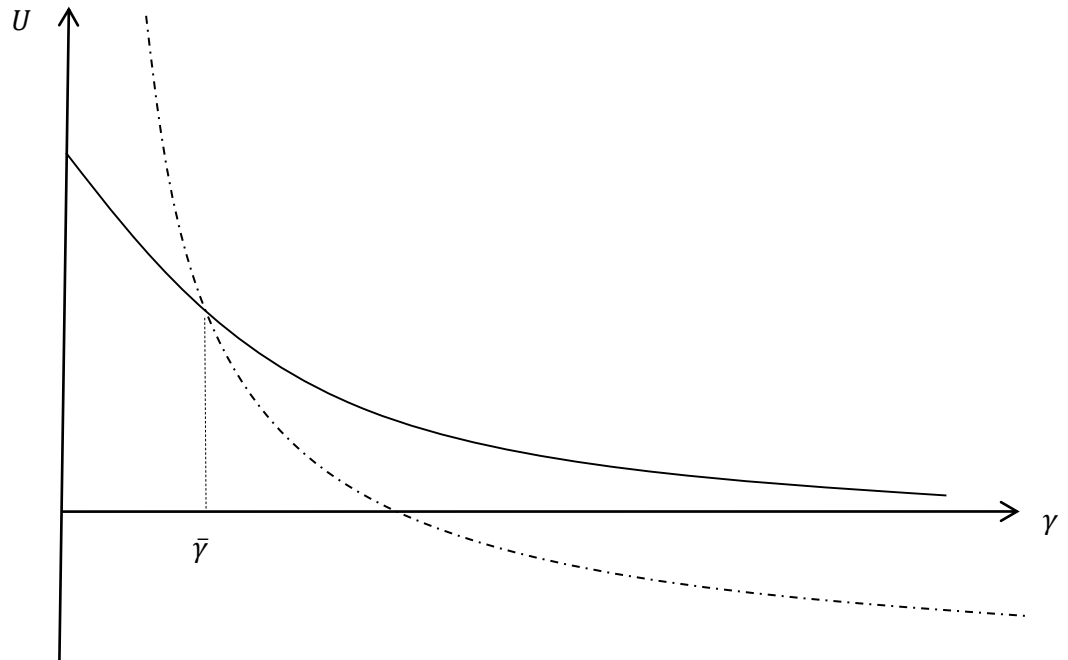
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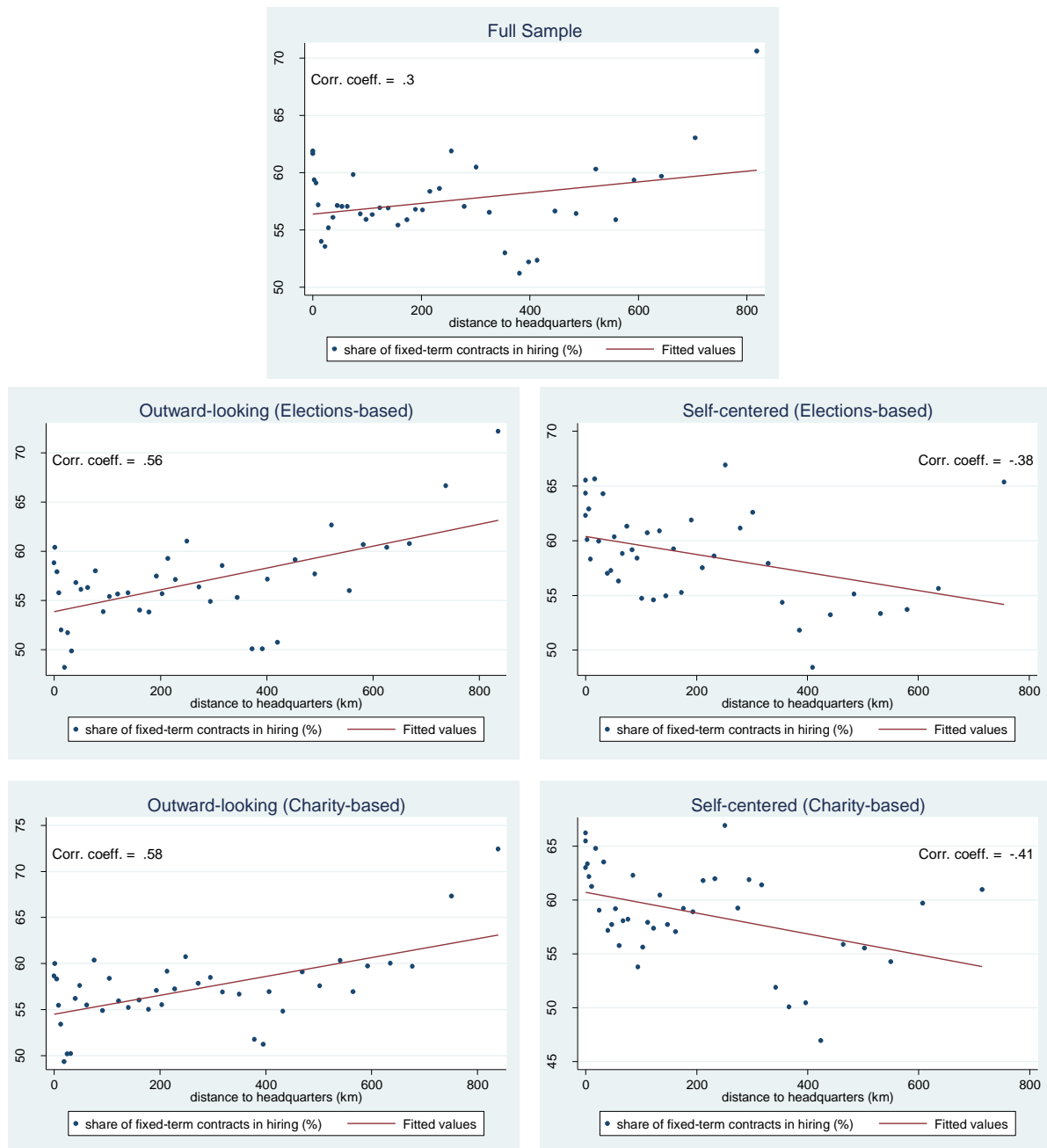
Tables and Figures

Figure 1 – Job risk and contract choice



Note – the chart shows the utility derived from hiring on fixed-term or open-ended contracts for different job risk levels. The continuous and dot-and-dashed lines represent the utility schedule for fixed-term and open-ended contracts, respectively.

Figure 2 – Share of fixed-term contracts in new hires and distance to headquarters



Note – In each sample, plant-by-year observations are ranked by distance to headquarters and then aggregated into 40 bins of equal size. Each dot represents the average distance to headquarters and the average share of fixed-term contracts of each bin.

Table 1 – Impact of physical distance to headquarters on the share of fixed-term contracts – IV estimates

Dep.var: Share of fixed-term contracts	(1)	(2)	(3)	(4)	(5)
Definition of self-centered/outward-looking		Election turnout		Charity giving	
<i>Département</i> of Headquarters (HQ)	Full Sample	Outward-looking	Self-centered	Outward-looking	Self-centered
Actual physical distance to HQ	0.0074 (0.0048)	0.0176*** (0.0042)	-0.0284*** (0.0083)	0.0167*** (0.0039)	-0.0218*** (0.0075)
Control variables	yes	yes	yes	yes	yes
Observations	73,601	46,958	26,643	44,195	25,333
R-squared	0.510	0.512	0.519	0.517	0.521
First stage coefficient on instrument	0.529*** (0.033)	0.478*** (0.057)	0.458*** (0.056)	0.516*** (0.055)	0.528*** (0.042)

Note – Models are estimated with 2SLS estimators. The dependent variable is the annual average share of fixed-term contracts in total hiring in percentage, as measured at the establishment level. Actual and potential physical distances to headquarters are measured in kilometers. Control variables include establishment age (6 classes) and size (7 classes), occupational and gender structure of the establishment workforce, firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying unemployment at the *département* level, year dummies, 4 dummies for missing establishment in a given quarter and firm and employment-area fixed effects. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and the 2000 referendum (on the 5-year – instead of 7-year – term for the President of the Republic). A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the bottom 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the top 75% of the distribution. Charity giving is measured as the ratio of total charity donations in 1887 to *département*-level GDP. A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the upper 25% of the charity giving distribution. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the bottom 75% of the distribution. Firms with headquarters in the Paris area are excluded from our sample. Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 2 – Differential impact of distance to headquarters on the share of fixed-term contracts according to firm visibility at headquarters – IV estimates

Dep.var: Share of fixed-term contracts	(1)	(2)	(3)	(4)	(5)
Definition of self-centered/outward-looking		Election turnout		Charity giving	
<i>Département</i> of Headquarters (HQ)	Full Sample	Outward-looking	Self-centered	Outward-looking	Self-centered
Physical distance*High Visibility	-0.0022 (0.0076)	0.0164* (0.0085)	-0.0367** (0.0154)	0.0123 (0.0085)	-0.0267** (0.0114)
Physical distance*Low Visibility	0.0104** (0.0053)	0.0160*** (0.0051)	0.0189 (0.0279)	0.0154*** (0.0049)	0.0042 (0.0157)
Control variables	yes	yes	yes	yes	yes
Observations	71,783	45,692	26,091	42,946	24,807
R-squared	0.511	0.512	0.487	0.516	0.520
Angrist-Pischke F-test on Dist*HVisib	197.71	71.42	41.05	82.05	130.72
Angrist-Pischke F-test on Dist*LVisib	309.61	191.27	49.87	229.67	51.55

Note – Models are estimated with 2SLS estimators. The dependent variable is the annual average share of fixed-term contracts in total hiring in percentage, as measured at the establishment level. Actual and potential physical distances to headquarters are measured in kilometers. Control variables include establishment age (6 classes) and size (7 classes), occupational and gender structure of the establishment workforce, firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying unemployment at the *département* level, year dummies, 6 dummies for firm size in the employment area of the headquarters interacted with physical distance, 4 dummies for missing establishment in a given quarter and firm and employment-area fixed effects. Visibility is measured as the share of the firm's employment in total employment of the local labor market where its headquarters are located. High visibility is captured by a dummy variable equal to 1 when the firm's share of local employment belongs to the upper 25% of the visibility distribution and 0 otherwise. Low visibility is equal to 1 if the firm belongs to the lower 75% of the distribution and 0 otherwise. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and the 2000 referendum (on the 5-year – instead of 7-year – term for the President of the Republic). A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the bottom 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the top 75% of the distribution. Charity giving is measured as the ratio of total charity donations in 1887 to *département*-level GDP. A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the upper 25% of the charity giving distribution. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the bottom 75% of the distribution. Firms with headquarters in the Paris area are excluded from our sample. Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3 – Differential impact of distance to headquarters on the share of fixed-term contracts according to CEOs' place of living – IV estimates

Dep.var:	(1)	(2)	(3)	(4)	(5)
Share of fixed-term contracts					
Definition of self-centered/outward-looking		Election turnout		Charity giving	
<i>Département</i> of Headquarters (HQ)	Full Sample	Outward-looking	Self-centered	Outward-looking	Self-centered
Physical distance*CEO living at HQ	0.0076 (0.0068)	0.0179** (0.0074)	-0.0422** (0.0181)	0.0167** (0.0077)	-0.0340* (0.0180)
Physical distance* CEO not living at HQ	0.0219*** (0.0071)	0.0256*** (0.0071)	-0.0179 (0.0311)	0.0219*** (0.0076)	0.0251 (0.0187)
Control variables	yes	yes	yes	yes	yes
Observations	15,365	9,476	5,889	8,581	5,898
R-squared	0.544	0.530	0.590	0.541	0.572
Angrist-Pischke F-test on Dist*Living	94.62	74.47	37.28	65.76	13.88
Angrist-Pischke F-test on Dist*Not living	76.47	75.18	11.72	73.66	19.90

Note – Models are estimated with 2SLS estimators. The dependent variable is the annual average share of fixed-term contracts in total hiring in percentage, as measured at the establishment level. Actual and potential physical distances to headquarters are measured in kilometers. Control variables include establishment age (6 classes) and size (7 classes), occupational and gender structure of the establishment workforce, firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying unemployment at the *département* level, year dummies, 4 dummies for missing establishment in a given quarter and firm and employment-area fixed effects. A CEO is considered to live at the firm's headquarters if she lives within 50 km from the headquarters (this information can be constructed only since 2003 and for CEOs who are wage-and-salary employees of their firm). Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and the 2000 referendum (on the 5-year – instead of 7-year – term for the President of the Republic). A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the bottom 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the top 75% of the distribution. Charity giving is measured as the ratio of total charity donations in 1887 to *département*-level GDP. A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the upper 25% of the charity giving distribution. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the bottom 75% of the distribution. Firms with headquarters in the Paris area are excluded from our sample. Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4 – Impact of birthplace distance to headquarters on the share of fixed-term contracts – IV estimates

Dep.var:	(1)	(2)	(3)	(4)	(5)
Share of fixed-term contracts					
Definition of self-centered/outward-looking		Election turnout		Charity giving	
<i>Département</i> of Headquarters (HQ)	Full Sample	Outward-looking	Self-centered	Outward-looking	Self-centered
Actual birthplace distance to HQ	-0.0011 (0.0019)	0.0049 (0.0039)	-0.0050*** (0.0016)	0.0054 (0.0043)	-0.0048*** (0.0015)
Control variables	yes	yes	yes	yes	yes
Observations	73,601	46,958	26,643	44,195	25,333
R-squared	0.511	0.492	0.497	0.495	0.499
First stage coefficient on instrument	0.122*** (0.024)	0.077*** (0.025)	0.157*** (0.024)	0.073*** (0.024)	0.166*** (0.031)

Note – Models are estimated with 2SLS estimators. The dependent variable is the annual average share of fixed-term contracts in total hiring in percentage, as measured at the establishment level. We define birthplace proximity as the share of individuals living in the *département* of the firm headquarters who were born in the *département* of the establishment. We rank all couples of departments from those with the highest (rank 1) to those with the lowest (rank 8,188) proximity. Our measure of birthplace distance is the position in this ranking. Control variables include establishment age (6 classes) and size (7 classes), occupational and gender structure of the establishment workforce, firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying unemployment at the *département* level, year dummies, 4 dummies for missing establishment in a given quarter and firm and employment-area fixed effects. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and the 2000 referendum (on the 5-year – instead of 7-year – term for the President of the Republic). A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the bottom 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the top 75% of the distribution. Charity giving is measured as the ratio of total charity donations in 1887 to *département*-level GDP. A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the upper 25% of the charity giving distribution. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the bottom 75% of the distribution. Firms with headquarters in the Paris area are excluded from our sample. Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Appendix

A.1. Theoretical appendix

Under the model's assumptions, the utility functions satisfy:

$$U_j^o(\gamma) = \sum_{k=0}^{\infty} (1-\gamma)^k (1-w) - h^o - \sum_{k=0}^{\infty} (1-\gamma)^k \gamma (S_j + d^o)$$

and

$$U_j^f(\gamma) = \sum_{k=0}^{D-1} (1-\gamma)^k - wD - h^f$$

We first show that they are both decreasing and convex in γ . Second, we characterize the risk level $\bar{\gamma}$ such that the CEO is indifferent between the two contracts and we demonstrate it is unique. Third we show that it decreases with the adjustment costs on open-ended contracts. We then consider a case where communities put pressure to hire workers on open-ended rather than fixed-term contracts. Finally, we consider a case where risk distributions can shift with distance.

A.1.1. Utility functions are decreasing and convex in γ

Consider the utility derived by the CEO from an open-ended contract:

$$U_j^o(\gamma) = \frac{(1-w)}{\gamma} - c^o$$

One gets

$$\frac{\partial U_j^o(\gamma)}{\partial \gamma} = -\frac{(1-w)}{\gamma^2} < 0$$

and

$$\frac{\partial^2 U_j^o(\gamma)}{\partial \gamma^2} = \frac{2(1-w)}{\gamma^3} > 0$$

In the same way, the utility from a fixed-term contract reads:

$$U_j^f(\gamma) = \sum_{k=0}^{D-1} (1-\gamma)^k - wD - h^f$$

Then

$$\frac{\partial U_j^f(\gamma)}{\partial \gamma} = - \sum_{k=0}^{D-1} k(1-\gamma)^{k-1} < 0$$

and

$$\frac{\partial^2 U_j^f(\gamma)}{\partial \gamma^2} = \sum_{k=0}^{D-1} k(k-1)(1-\gamma)^{k-2} > 0$$

A.1.2. Characterization of the risk threshold $\bar{\gamma}$

The risk threshold is defined by the indifference condition:

$$U_j^o(\bar{\gamma}) = U_j^f(\bar{\gamma})$$

First notice that both utilities are strictly decreasing and convex in γ . Then remark that:

$$\lim_{\gamma \rightarrow 0^+} U_j^o(\gamma) \rightarrow +\infty$$

$$\lim_{\gamma \rightarrow 0^+} U_j^f(\gamma) = D(1-w) - h^f$$

while

$$\lim_{\gamma \rightarrow 1} U_j^o(\gamma) = 1 - w - c^o$$

$$\lim_{\gamma \rightarrow 1} U_j^f(\gamma) = 1 - Dw - h^f$$

We only consider non-degenerate cases where $U_j^f(\gamma = 1) > U_j^o(\gamma = 1)$, that is where the fixed-term contracts are more profitable for the riskiest jobs. If it were not the case, open-ended contracts would always be chosen.

Notice that we do not assume that utilities are positive for $\gamma = 1$ but that the *loss*, if any, is smaller under fixed-term contract than under open-ended contract. Then, since both utilities are monotonic, decreasing and convex, and because:

$$\lim_{\gamma \rightarrow 0^+} U_j^o(\gamma) - U_j^f(\gamma) \rightarrow +\infty$$

and

$$\lim_{\gamma \rightarrow 1} U_j^o(\gamma) - U_j^f(\gamma) < 0$$

there is a unique risk threshold $\bar{\gamma}$. See Figure 1 for a graphical illustration.

A.1.3. The effect of adjustment costs c^o on contract choice

We have just demonstrated that there is a unique risk threshold $\bar{\gamma}$. Moreover, remember that both utilities are monotonic, convex and that the difference $U_j^o(\gamma) - U_j^f(\gamma)$ is such that, for the lowest risk level, the utility from open-ended contract is higher than the utility from fixed-term contracts:

$$\lim_{\gamma \rightarrow 0^+} U_j^o(\gamma) - U_j^f(\gamma) \rightarrow +\infty$$

and, for the maximum risk level, the utility from open-ended contracts is lower than the utility from fixed-term contracts:

$$\lim_{\gamma \rightarrow 1} U_j^o(\gamma) - U_j^f(\gamma) < 0$$

Then, in the vicinity of $\bar{\gamma}$:

$$\left. \frac{\partial(U_j^o(\gamma) - U_j^f(\gamma))}{\partial \gamma} \right|_{\gamma=\bar{\gamma}} < 0$$

Consider now the effect of a change in c^o . Differentiating $U_j^o(\bar{\gamma}) = U_j^f(\bar{\gamma})$, one gets:

$$\underbrace{\frac{\partial U_j^o(\bar{\gamma})}{\partial \bar{\gamma}} d\bar{\gamma} - \frac{\partial U_j^f(\bar{\gamma})}{\partial \bar{\gamma}} d\bar{\gamma}}_{<0} = dc^o$$

and thus

$$\frac{d\bar{\gamma}}{dc^o} < 0$$

An increase in the adjustment costs of the open-ended contract decreases the threshold. Hence, distance reduces the threshold.

A.1.4. The effect of distance when communities put pressure to hire workers on open-ended rather than fixed-term contracts

If communities put pressure on CEOs to hire workers on open-ended rather than fixed-term contracts, the adjustment cost paid upon hiring would be the sum of the writing cost and the social sanction, which in turn would decrease with distance in self-centered communities. Denoting the overall adjustment cost with c^f , we have:

$$c^f = S^f + h^f$$

with $dS^f/d\delta \leq 0$. By substituting c^f for h^f in all the equations of the main text, it is easy to show that all the statements concerning the outward-looking case made in the main text as well as in Appendices A.1.1 and A.1.2 still hold, since in this case c^f , like h^f , does not depend on distance. Similarly, denoting with C the difference in overall adjustment costs between open-ended and fixed-term contracts, that is $C = c^o - c^f$, and repeating the same proof as in Appendix A.1.3 but replacing c^o with C , we obtain:

$$\frac{d\bar{\gamma}}{dC} < 0$$

which implies:

$$\frac{dL^f}{dC} = -f(\bar{\gamma}, \delta) \frac{d\bar{\gamma}}{dC} > 0$$

and

$$\frac{dL^f}{d\delta} = -f(\bar{\gamma}, \delta) \frac{d\bar{\gamma}}{dC} \frac{dC}{d\delta} - \frac{\partial F(\gamma, \delta)}{\partial \delta}.$$

The first term on the right-hand side is different from zero only in the self-centered case, where C may vary as a function of δ . In that case the sign of $dL^f/d\delta$ is ambiguous as long as $dC/d\delta < 0$, that is as long as $dS/d\delta < dS^f/d\delta$, that is if the social sanction associated with dismissals decreases with distance more rapidly than the social sanction associated with hiring

on fixed-term contracts. Note that this condition always holds if the latter is equal to a fraction of the former, that is if $S^f = \alpha S$, with $\alpha < 1$.

A.1.5 The effect of distance when there is a maximum level of profitable risk

Consider that no job is profitable above a certain level, denoted with γ^{max} . That is

$$U_j^f(\gamma^{max}) = 0$$

since we work under the assumption that $U_j^f(\gamma = 1) > U_j^o(\gamma = 1)$ (non-degenerate case). Notice that the adjustment costs related to open-ended contracts have no effect on the maximum risk level, that is:

$$\frac{\partial \gamma^{max}}{\partial c^o} = 0$$

The share of open-ended contracts reads:

$$L^o = \frac{F(\bar{\gamma}, \delta)}{F(\gamma^{max}, \delta)}$$

where $F(\gamma^{max}, \delta)$ stands for the probability that the job is profitable and therefore the worker is hired. Then the effect of adjustment costs for open-ended contracts satisfies:

$$\frac{\partial L^o}{\partial c^o} = \frac{f(\bar{\gamma}, \delta)F(\gamma^{max}, \delta) \frac{d\bar{\gamma}}{dc^o}}{F(\gamma^{max}, \delta)^2} < 0$$

We get the same effect as before: an increase in the adjustment costs for open-ended contracts pushes the firm to be more selective and it decreases the risk threshold.

Looking at the effect of distance and allowing the distribution to shift with distance, one gets:

$$\frac{\partial L^o}{\partial \delta} = \frac{f(\bar{\gamma}, \delta)}{F(\gamma^{max}, \delta)} \frac{d\bar{\gamma}}{d\delta} \frac{dS}{d\delta} + \frac{F_2'(\bar{\gamma}, \delta)F(\gamma^{max}, \delta) - F(\bar{\gamma}, \delta)F_2'(\gamma^{max}, \delta)}{F(\gamma^{max}, \delta)^2}$$

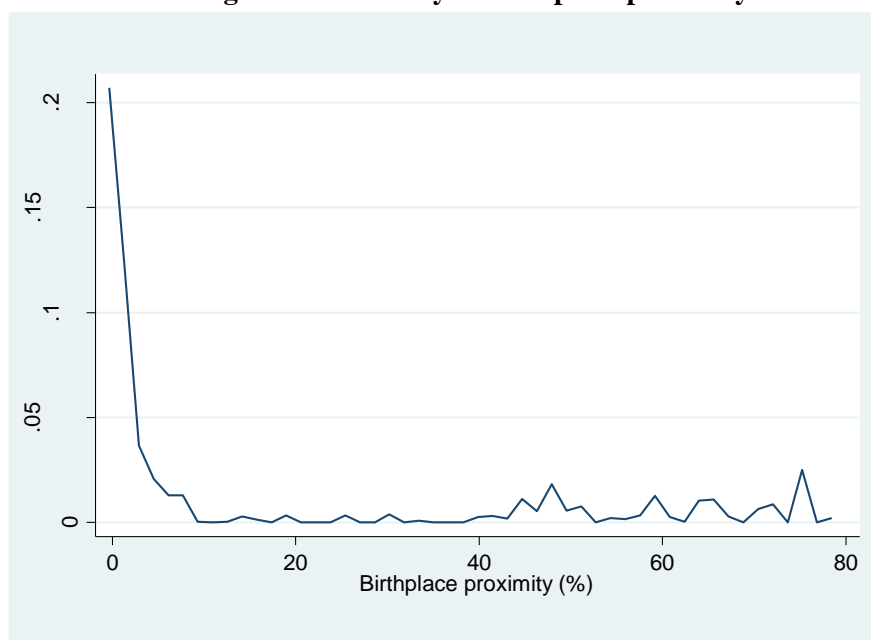
When headquarters are located in an outward-looking community, social sanctions are independent of distance, $dS/d\delta = 0$, so that the above expression can be rewritten as:

$$\frac{\partial L^o}{\partial \delta} = \frac{F_2'(\bar{\gamma}, \delta)F(\gamma^{max}, \delta) - F(\bar{\gamma}, \delta)F_2'(\gamma^{max}, \delta)}{F(\gamma^{max}, \delta)^2}$$

The sign of the above expression is undetermined. Intuitively, when the distribution of risk shifts, more matches are unprofitable and thus both the number of open-ended contracts and the number of fixed-term contracts change. However, $\partial L^o / \partial \delta < 0$ in outward-looking communities if $F'_2(\bar{\gamma}, \delta)F(\gamma^{max}, \delta) < F(\bar{\gamma}, \delta)F'_2(\gamma^{max}, \delta)$ which is a generalization of condition [1.1] when risk distribution can shift with distance. Since F is non-negative and $F'_2(\bar{\gamma}, \delta) < 0$, this generalized condition may not hold only if $F'(\gamma^{max}, \delta) < 0$, that is if, as distance increases, the probability that the worker is hired, and in large numbers the hiring rate, decreases. As shown in Table A10 in Appendix A.2, however, we find no evidence of this in our data.

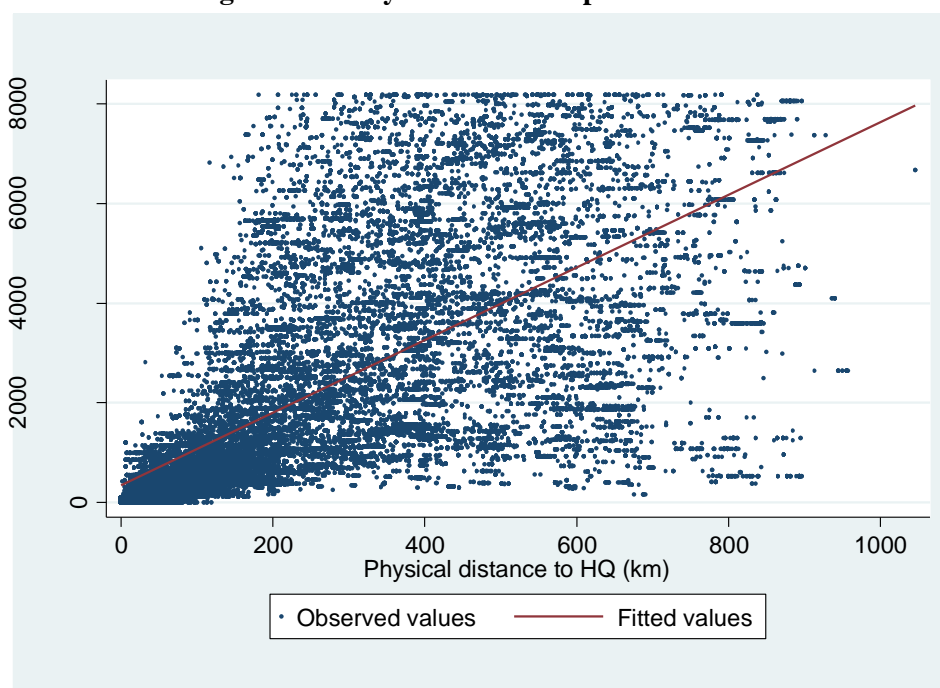
A.2. Appendix Figures and Tables

Figure A1 – Density of Birthplace proximity



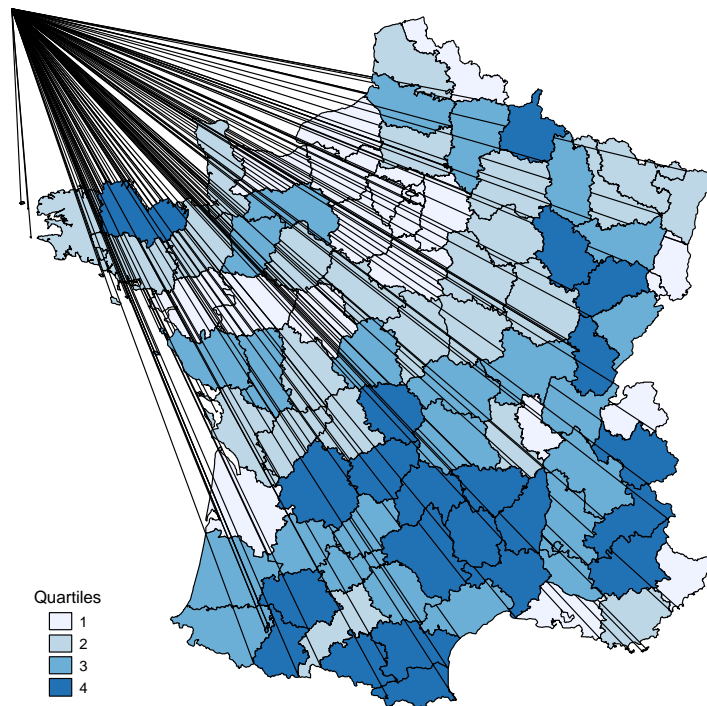
Note – Birthplace proximity is measured by the share of individuals living in the *département* of the headquarters who were born in the *département* of the establishment.

Figure A2 – Physical and Birthplace Distances



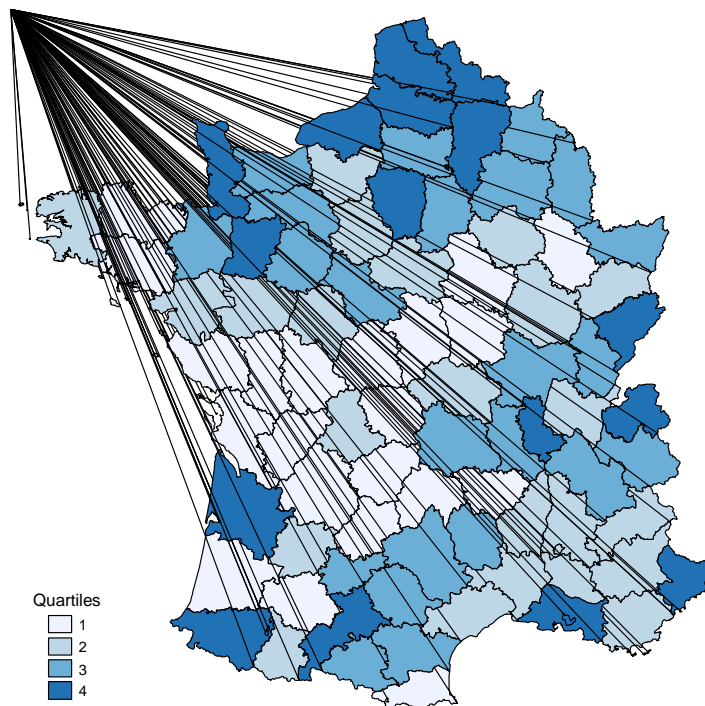
Note – Physical distance is measured in kilometers. We define birthplace proximity as the share of individuals living in the *département* of the firm headquarters who were born in the *département* of the establishment. We rank all couples of departments from those with the highest (rank 1) to those with the lowest (rank 8,188) proximity. Our measure of birthplace distance is the position in this ranking.

Figure A3 – Difference between municipal and national elections' turnout rates in French *départements*, by quartile of the distribution



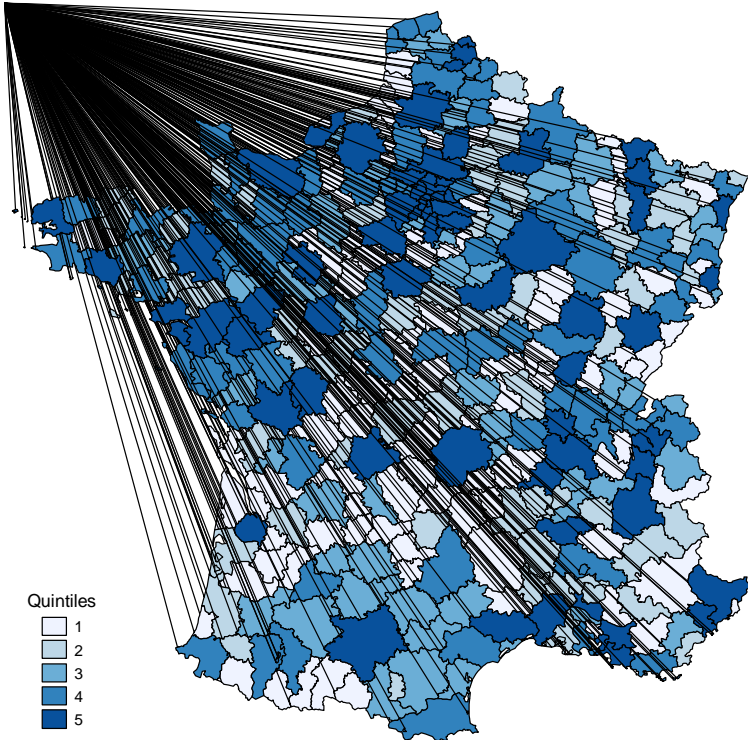
Note – Quartiles are ordered from the lowest to the highest.

Figure A4 – Ratio of charity donations to GDP in French *départements*, by quartile of the distribution



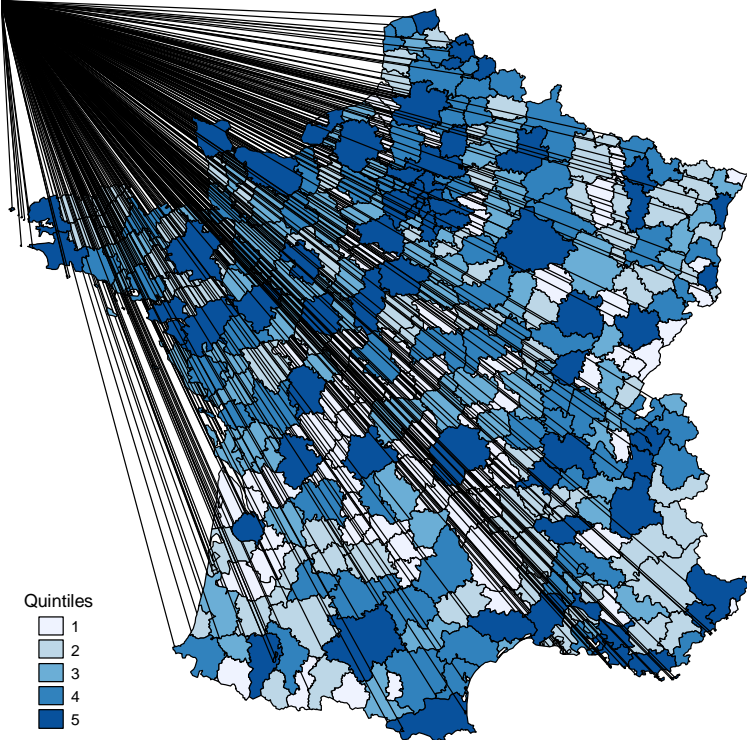
Note – *Département*-level charity giving is measured in 1887; *département*-level GDP is measured in 1864. A few *départements* have been aggregated due to changes in their historical borders. Quartiles are ordered from the lowest to the highest. *Départements* with missing data are not shown on the map.

Figure A5 – Number of headquarters in French employment areas, by quintile of the distribution



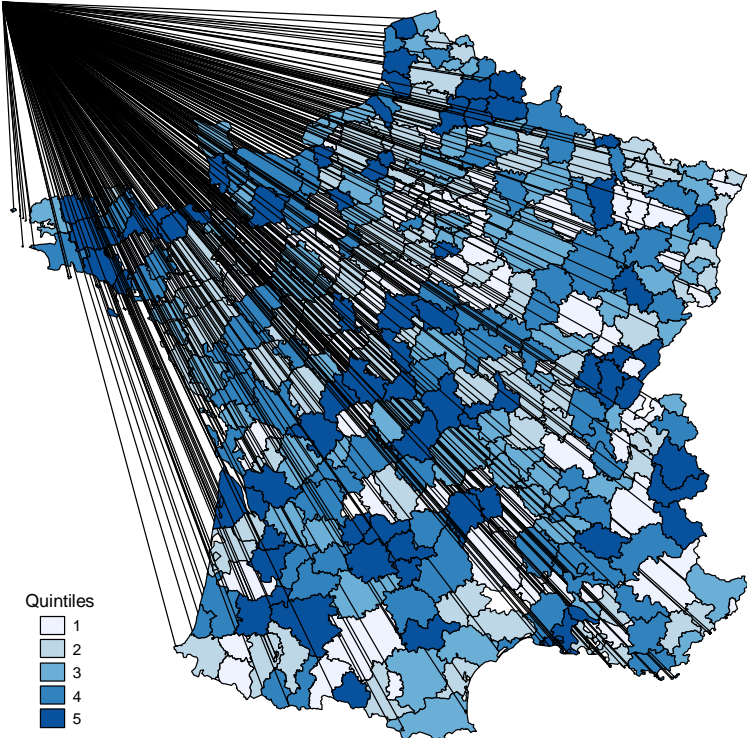
Note – Quintiles are ordered from the lowest to the highest.

Figure A6 – Number of secondary establishments in French employment areas, by quintile of the distribution



Note – Quintiles are ordered from the lowest to the highest.

Figure A7 – Distribution of the proportion of fixed-term contracts in hiring in French employment areas, by quintile of the distribution



Note – Quintiles are ordered from the lowest to the highest. Establishments with headquarters located in the Paris area are excluded.

Table A1 – Correlation between distance to headquarters and the contribution to the firm market potential

	<i>CMPF</i>
Potential Distance	-0.0077(0.763)
Actual Distance	0.1498***(0.000)

Note – Variables in deviation from the firm average. The sample covers secondary establishments of business companies with at least 2 secondary establishments that were operational between 1998 and 2009. p-values in parentheses. Significance obtained adjusting for clustering at the firm level.

Table A2 – Visibility, election turnout, charity giving at headquarters

<i>Variables</i>	
Firm's share of total employment in headquarters' employment area (%)	
Minimum	0.000
1 st quartile	0.016
Median	0.057
3 rd quartile	0.186
Maximum	28.071
Difference (% points) between municipal and national elections' turnout rates in HQ's <i>département</i>	
Minimum	24.7
1 st quartile	36.6
Median	39.2
3 rd quartile	48.4
Maximum	60.6
Ratio of total charity donations to GDP (%) in HQ's <i>département</i>	
Minimum	0.012
1 st quartile	0.093
Median	0.130
3 rd quartile	0.184
Maximum	0.658

Table A3 – Descriptive statistics of observations in our sample

<i>Variables</i>	Mean	S.D.	<i>Variables</i>	Mean	S.D.
Share of fixed-term contracts (% in total hiring)	57.50	35.54	Structure of the workforce (% of plant employment)		
Quarterly hiring rate (% in total employment)	13.01	51.01	Managers	10.71	16.35
Establishment size (headcount)	111.39	208.89	Technicians and supervisors	21.55	19.96
Establishment age (years)	8.82	11.70	Clerks	29.92	32.41
Firm size in the employment area of establishment	254.39	628.77	Blue collars	37.82	34.17
Local unemployment rate (%)	8.19	1.95	Women	37.67	27.01
			Industries (%)		
			Agriculture	0.18	4.23
			Mining, Manufacturing, Energy	20.58	40.43
			Construction	9.59	29.44
			Services	69.66	45.97

Table A4 – Number of secondary establishments per firm by year

	(1) Establishments in our sample	(2) Establishments in France
1 st quartile	1	4
Median	1	7
Mean	3.0	23.6
3 rd quartile	3	15
Maximum	231	2,808

Note – Column (1) only includes establishments belonging to the regression sample. Column (2) includes all establishments of the firms in the regression sample, whether or not these establishments belong to that sample. The difference between the figures in columns (1) and (2) is due to three main reasons: our sample contains neither establishments with zero hiring in a given year nor establishments with fewer than 10 employees and it has no more than 25% of establishments with 10 to 49 employees.

Table A5 – Distance to headquarters

<i>Variables</i>	Mean	S.D.
<i>Physical distance in kilometers</i>		
Distance to HQ	239.0	218.9
Distance to HQ of the closest observation (within firm)	97.0	148.8
Distance to HQ of the median observation (within firm)	172.5	184.1
Distance to HQ of the farthest observation (within firm)	262.5	245.2
<i>Birthplace proximity</i>		
% of individuals living in the <i>département</i> of the HQ who were born in the <i>département</i> of the establishment	11.9	22.7
<i>Birthplace distance (rank)</i>		
Distance to HQ	2,087.7	2,302.7
Distance to HQ of the closest observation (within firm)	640.5	1261.9
Distance to HQ of the median observation (within firm)	1,269.9	1,720.8
Distance to HQ of the farthest observation (within firm)	2,243.1	2,484.9

Note – Observations are establishment-year couples. The median observation is the observation that divides the within-firm distribution of distances in two equal parts. The mean (resp. standard deviation) of the median, the closest and the farthest distances to HQ are computed on the distribution of firms.

**Table A6 – Impact of physical distance to headquarters on the share of fixed-term contracts – IV estimates
Instrument based on constant population**

Dep.var: Share of fixed-term contracts	(1)	(2)	(3)	(4)	(5)
Definition of self-centered/outward-looking		Election turnout		Charity giving	
<i>Département</i> of Headquarters (HQ)	Full Sample	Outward-looking	Self-centered	Outward-looking	Self-centered
Actual physical distance to HQ	0.0034 (0.0051)	0.0116*** (0.0043)	-0.0357*** (0.0117)	0.0123*** (0.0040)	-0.0349*** (0.0113)
Control variables	yes	yes	yes	yes	yes
Observations	73,601	46,958	26,643	44,195	25,333
R-squared	0.511	0.515	0.516	0.519	0.517
First stage coefficient on instrument	0.455*** (0.037)	0.402*** (0.056)	0.441*** (0.045)	0.440*** (0.051)	0.437*** (0.051)

Note – Models are estimated with 2SLS estimators. The dependent variable is the annual average share of fixed-term contracts in total hiring in percentage, as measured at the establishment level. Actual and potential physical distances to headquarters are measured in kilometers. Control variables include establishment age (6 classes) and size (7 classes), occupational and gender structure of the establishment workforce, firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying unemployment at the *département* level, year dummies, 4 dummies for missing establishment in a given quarter and firm and employment-area fixed effects. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and the 2000 referendum (on the 5-year – instead of 7-year – term for the President of the Republic). A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the bottom 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the top 75% of the distribution. Charity giving is measured as the ratio of total charity donations in 1887 to *département*-level GDP. A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the upper 25% of the charity giving distribution. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the bottom 75% of the distribution. Firms with headquarters in the Paris area are excluded from our sample. Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A7 – Impact of physical distance to headquarters on the share of fixed-term contracts – OLS estimates

Dep.var: Share of fixed-term contracts	(1)	(2)	(3)	(4)	(5)
Definition of self-centered/outward-looking		Election turnout		Charity giving	
<i>Département</i> of Headquarters (HQ)	Full Sample	Outward-looking	Self-centered	Outward-looking	Self-centered
Actual physical distance to HQ	-0.0023 (0.0015)	-0.0007 (0.0017)	-0.0073*** (0.0022)	0.0009 (0.0016)	-0.0092*** (0.0022)
Control variables	yes	yes	yes	yes	yes
Observations	73,601	46,958	26,643	44,195	25,333
R-squared	0.512	0.517	0.523	0.521	0.522

Note – The dependent variable is the annual average share of fixed-term contracts in total hiring in percentage, as measured at the establishment level. Actual physical distance to headquarters is measured in kilometers. Control variables include establishment age (6 classes) and size (7 classes), occupational and gender structure of the establishment workforce, firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying unemployment at the *département* level, year dummies, 4 dummies for missing establishment in a given quarter and firm and employment-area fixed effects. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and the 2000 referendum (on the 5-year – instead of 7-year – term for the President of the Republic). A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the bottom 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the top 75% of the distribution. Charity giving is measured as the ratio of total charity donations in 1887 to *département*-level GDP. A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the upper 25% of the charity giving distribution. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the bottom 75% of the distribution. Firms with headquarters in the Paris area are excluded from our sample. Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A8 – Differential impact of distance to headquarters on the share of fixed-term contracts controlling for other characteristics of the headquarters' *Département* interacted with distance. Physical distance – IV estimates

Dep.var:	(1)	(2)	(3)	(4)
Share of fixed-term contracts				
Definition of self-centered/outward-looking	Election Turnout		Charity giving	
Physical distance*Outward-looking HQ	0.0146*** (0.0040)	0.0180** (0.0074)	0.0124*** (0.0040)	0.0136*** (0.0049)
Physical distance* Self-centered HQ	-0.0250*** (0.0085)	-0.0328** (0.0140)	-0.0179** (0.0091)	-0.0217*** (0.0081)
Baseline control variables	yes	yes	yes	yes
Extended control variables	no	yes	no	yes
Angrist-Pischke F-test on Dist*Outward-looking	142.82	256.96	171.62	113.14
Angrist-Pischke F-test on Dist*Self-centered	159.55	76.79	136.80	181.36
Observations	73,601	73,601	69,528	69,528
R-squared	0.508	0.503	0.512	0.510

Note – Models are estimated with 2SLS estimators. The dependent variable is the annual average share of fixed-term contracts in total hiring in percentage, as measured at the establishment level. Actual and potential physical distances to headquarters are measured in kilometers. Control variables include establishment age (6 classes) and size (7 classes), occupational and gender structure of the establishment workforce, firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying unemployment at the *département* level, year dummies, 4 dummies for missing establishment in a given quarter and firm and employment-area fixed effects. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and the 2000 referendum (on the 5-year – instead of 7-year – term for the President of the Republic). A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the bottom 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the top 75% of the distribution. Charity giving is measured as the ratio of total charity donations in 1887 to *département*-level GDP. A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the upper 25% of the charity giving distribution. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the bottom 75% of the distribution. In the specifications where self-centeredness is measured on the basis of election turnout, extended controls include physical distance interacted with each of the following variables measured at the level of the *département* of the headquarters: GDP per capita in 2005, the employment share of the tertiary sector (excluding public administration) in 2000, a dummy variable for mostly urban *département* in 2000, the time-varying unemployment rate, the poverty rate in 2006, the share of youth (aged 25 or less) in the population in 1999, the share of individuals aged 25-34 without any diploma in 2011, property and violent crime rates in 2011, a dummy variable for a high proportion of foreigners in the population in 1982, and the average proportion of Catholics in 2005-2009. In the specifications where self-centeredness is measured on the basis of charity donations, extended controls include physical distance interacted with each of the following variables measured at the level of the *département* of the headquarters: GDP per capita in 1864, the employment share of agriculture in 1896, the birth and literacy rates in 1886, property and violent crime rates in 1887 and a dummy variable for a high proportion of foreigners in the population in 1891. Firms with headquarters in the Paris area are excluded from our sample. Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A9 – Impact of physical distance to headquarters on the share of fixed-term contracts – IV estimates

Dep.var: Share of fixed-term contracts	(1)	(2)	(3)	(4)	(5)
Panel A. Including Paris and its close suburbs					
Definition of self-centered/outward-looking		Election turnout		Charity giving	
<i>Département</i> of Headquarters (HQ)	Full Sample	Outward-looking	Self-centered	Outward-looking	Self-centered
Actual physical distance to HQ	0.0026 (0.0051)	0.0117* (0.0064)	-0.0284*** (0.0083)	0.0105* (0.0059)	-0.0218*** (0.0075)
Control variables	yes	yes	yes	yes	yes
Observations	128,195	101,552	26,643	98,789	25,333
R-squared	0.479	0.472	0.519	0.474	0.521
First stage coefficient on instrument	0.314*** (0.035)	0.229*** (0.039)	0.458*** (0.056)	0.248*** (0.040)	0.528*** (0.042)
Panel B. Excluding the larger Paris area (Ile-de France)					
Definition of self-centered/outward-looking		Election turnout		Charity giving	
<i>Département</i> of Headquarters (HQ)	Full Sample	Outward-looking (Low turnout)	Self-centered (High turnout)	Outward-looking (High donations)	Self-centered (Low donations)
Actual physical distance to HQ	0.0067 (0.0046)	0.0163*** (0.0032)	-0.0284*** (0.0083)	0.0152*** (0.0031)	-0.0271*** (0.0085)
Control variables	yes	yes	yes	yes	yes
Observations	59,715	33,072	26,643	32,429	23,213
R-squared	0.521	0.533	0.519	0.532	0.528
First stage coefficient on instrument	0.584*** (0.032)	0.602*** (0.060)	0.458*** (0.056)	0.627*** (0.057)	0.465*** (0.049)

Note – Models are estimated with 2SLS estimators. The dependent variable is the annual average share of fixed-term contracts in total hiring in percentage, as measured at the establishment level. Actual and potential physical distances to headquarters are measured in kilometers. Control variables include establishment age (6 classes) and size (7 classes), occupational and gender structure of the establishment workforce, firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying unemployment at the *département* level, year dummies, 4 dummies for missing establishment in a given quarter and firm and employment-area fixed effects. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and the 2000 referendum (on the 5-year – instead of 7-year – term for the President of the Republic). A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the bottom 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the top 75% of the distribution. Charity giving is measured as the ratio of total charity donations in 1887 to *département*-level GDP. A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the upper 25% of the charity giving distribution. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the bottom 75% of the distribution. Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A10 – Impact of physical distance to headquarters on the hiring rate – IV estimates

Dep.var:	(1)	(2)	(3)	(4)	(5)
Hiring rate					
Definition of self-centered/outward-looking		Election turnout		Charity giving	
<i>Département</i> of Headquarters (HQ)	Full Sample	Outward-looking	Self-centered	Outward-looking	Self-centered
Actual physical distance to HQ	0.0054 (0.0078)	0.0112 (0.0125)	-0.0052 (0.0045)	0.0084 (0.0120)	0.0052 (0.0052)
Control variables	yes	yes	yes	yes	yes
Observations	78,998	50,121	28,877	47,278	27,332
R-squared	0.170	0.126	0.590	0.152	0.522
First stage coefficient on instrument	0.531*** (0.032)	0.481*** (0.055)	0.469*** (0.053)	0.520*** (0.053)	0.529*** (0.040)

Note – Models are estimated with 2SLS estimators. The dependent variable is the yearly ratio of new hires to total employment, in percentage, as measured at the establishment level. Actual and potential physical distances to headquarters are measured in kilometers. Control variables include establishment age (6 classes) and size (7 classes), occupational and gender structure of the establishment workforce, firm size in the establishment's employment area (6 classes), 2-digit industry dummies, time-varying unemployment at the *département* level, year dummies, 4 dummies for missing establishment in a given quarter and firm and employment-area fixed effects. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the first round of the 2001 municipal elections and the 2000 referendum (on the 5-year – instead of 7-year – term for the President of the Republic). A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the bottom 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the top 75% of the distribution. Charity giving is measured as the ratio of total charity donations in 1887 to *département*-level GDP. A firm is assumed to have headquarters located in an outward-looking *département* if this *département* belongs to the upper 25% of the charity giving distribution. Symmetrically, firm headquarters are considered to be located in a self-centered *département* if this *département* belongs to the bottom 75% of the distribution. Firms with headquarters in the Paris area are excluded from our sample. Robust standard errors clustered at the firm level in parentheses. *** p<0.01, ** p<0.05, * p<0.1.