# Escaping Social Pressure: Fixed-Term Contracts in Multi-Establishment Firms*

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## Abstract

We investigate the impact of local social pressure on the choice of employment contracts made by firms. Using linked employer-employee data, we show that secondary 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 selfish communities. In contrast, when firms' headquarters belong to unselfish communities, 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 selfish, i.e. cares about dismissals only when they take place at short distance, CEOs are under pressure to avoid dismissing workers close to headquarters. By adding to the adjustment costs associated with permanent contracts, this creates an incentive for them to rely more on fixed-term contracts, in an attempt to escape social pressure when hiring workers close to headquarters.

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## Introduction

Fixed-term contracts account for a very large and increasing share of hiring in many OECD countries (OECD, 2014) – see Figure 1.

**Figure 1 about here**

There exists a vast literature suggesting that whether firms choose to hire workers on temporary rather than permanent contracts depends on the adjustment costs associated with either type of contract. One of the determinants of these adjustment costs much emphasized in the recent literature is the strictness of employment protection legislation (EPL): the stricter the EPL on permanent as compared to temporary contracts, the stronger the incentive for firms to hire temporary workers as a way to reduce firing costs in case of negative productivity shock (e.g. Boeri and Van Ours, 2013).

In a recent paper, Bassanini, Brunello and Caroli (2017) show that adjustment costs associated with permanent contracts are also affected by the local social pressure faced by CEOs. 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 as costly by local communities, the latter put the CEO under pressure to reduce firing in their immediate surroundings. This social pressure acts as an additional adjustment cost which leads firms to reduce dismissals in plants located at short distance from the headquarters where reputational effects are stronger for CEOs.

If local social pressure increases the relative adjustment costs associated with permanent contract terminations, firms should have a stronger incentive to hire workers on fixed-term contracts at short distance from headquarters where social pressure is higher. This is what we investigate in this paper.

We first present a simple theoretical model in which employment decisions are taken by the CEO at the firms' headquarters. Whether CEOs decide to hire workers on permanent or fixed-term contracts depends on the adjustment costs and on the risk of job destruction. There is evidence in the literature that the further away establishments are from firms' headquarters, the more severe monitoring and asymmetric information problems, and hence the higher the risk of job destruction.[1] Since legal termination costs are lower on fixed-term contracts than

[1] 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).

on permanent ones, this generates a positive relationship between the distance to the firm's headquarters and the incentive for firms to hire workers on fixed-term contracts. Beyond legal costs, a second determinant of adjustment costs is social pressure on CEOs. This varies according to the characteristics of the local community at the firm's headquarters. When this community is selfish, it cares about dismissals only if they affect the community itself or individuals with whom it is in close contact. 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. So, a first prediction of our model is that, when firms' headquarters are located in selfish communities, the impact of distance to headquarters on the share of fixed-term contracts in hiring is ambiguous since the effect of social pressure offsets that of monitoring and imperfect information. Fixed-term contracts may even be more numerous at short distances from headquarters if the effect of social pressure against dismissals is strong enough. In contrast, when the local community at headquarters is unselfish, 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 firing occur. In this case, the only mechanism that generates a relationship between distance to headquarters and the share of fixed-term contracts results from monitoring and asymmetric information problems. So, a second prediction of our model is that the impact of distance to headquarters on the share of fixed-term contracts in hiring should be positive when firms' headquarters are located in unselfish communities.

Our empirical analysis relies on French data. France is particularly interesting when studying the geography of employment contracts. This is due to the fact that firing decisions have to be coordinated at the firm level since the threshold that triggers (more expensive) collective redundancy procedures is computed on the basis of the total number of dismissals undertaken in all establishments of the firm. As a consequence, the choice between hiring on permanent versus fixed-term contracts is also likely to be made at the firm level, since it affects the cost of future staff adjustments. We match two large datasets. The *Déclarations Annuelles des Données Sociales* (DADS) contains social security records of 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 contracts 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 at which the establishment would have been located from the headquarters had its 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 selfish and unselfish communities. We measure unselfishness alternatively as the share of charitable giving in local GDP and as the difference in turnout rates between national and local elections. We show that, whatever the measure we use, for firms with headquarters located in selfish communities the impact of distance to headquarters on the share of fixed-term contracts in hiring is negative and statistically significant. In contrast, for firms with headquarters located in unselfish communities, the effect is positive and significant. 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 selfish 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 show that the negative impact of distance on the share of fixed-term contracts that we observe when firms' headquarters are located in selfish communities is stronger whenever CEOs not only work but also live in that community. This suggests that they are more sensitive to social pressure arising from the community at headquarters when they are full members of that community. Finally, we consider a measure of distance to headquarters based on social ties rather than geography. 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 we obtain when using physical distance. This is consistent with the idea that monitoring or asymmetric information problems are unlikely to vary with the strength of social ties.

In the light of our model, we interpret these findings as suggesting 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 the negative relationship between distance and the share of fixed-term contracts that we uncover when headquarters are located in selfish communities 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 temporary contracts. The first generation of papers on the choice of labor contract has much emphasized the role of hiring and firing regulations in determining differences in adjustment costs between permanent and temporary contracts. These papers show that employers prefer to hire on temporary contracts whenever firing costs are higher than the sum of 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 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).[2] 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 legislated adjustment costs.

Our paper also speaks to 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, and Garicano, Palacios-Huerta and Prendergast, 2005). 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, 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. Another piece of evidence comes from the impact of

[2] 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)

social pressure on non-civic behaviors. Policy reforms that aim at reducing the cost of civic actions may indeed foster non-civic behavior if they make the latter less visible – Funk (2010).

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 (2018) show that firms are also sensitive to stronger forms of social pressure, in particular, consumer boycott. But social pressure may also arise from within the firm. As shown in the literature – 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 wages higher than the profit-maximizing level. Cronqvist et al. (2009) show that the 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 particularly strong in this case. 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 et al. (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 assuming employees on fixed-term rather than on permanent contracts.

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. Focusing on the choice of job contracts as the distance to the headquarters 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 risk[3]. Following Cahuc et al. (2016), job risk, noted $\gamma_{ij} > 0$, is the probability that at each period the job becomes unproductive and is destroyed. It is drawn, upon recruitment, in a distribution with cdf $F_{ij}(\gamma)$. 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[4] who works – and often lives – in the municipality where the headquarters are located. Establishments located further away from the headquarters are more difficult to monitor for the CEO and her imperfect information on local conditions in distant establishments heightens the risk of productivity shocks. As a consequence, we assume that job risk increases with the distance $\delta$ between the establishment and the firm's headquarters[5] – i.e. the distribution of $\gamma$ shifts upward:

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

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 contract of fixed duration *D*. Since the choice of the contract duration is irrelevant for the empirical analysis developed below, we assume here that there is a unique possible duration *D* defined by the law.[6] 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.[7] By law, however, it is impossible to fire a worker before the end of a fixed-term contract.[8]

[3] Taking into account productive heterogeneity wouldn't change our predictions and our empirical strategy will deal with establishment heterogeneity.
[4] Our assumption is that employment decisions are taken centrally at headquarters. For the sake of simplicity, we represent these decisions as taken by the CEO even if, in practice, other top executives may also take them.
[5] We do not model here why a firm has more than one plant, and why plants are located at different distances from headquarters.
[6] In many countries the maximum duration of fixed-term contracts, including possible renewals, is fixed by the law (see e.g. OECD, 2014).
[7] This is only a simplifying assumption. Results would remain the same if termination costs at the end of a fixed-term contract were included.
[8] 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 for both types of contract.

Near each establishment and the headquarters lives a community. Following Akerlof (1980) and Bassanini et al. (2017), we assume that the CEO cares about profits and her reputation. A community can 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.[9]

The CEO's intertemporal utility from a job $i$ in establishment $j$ is the sum of the *expected* instantaneous profits minus contracting, legal, and administrative costs as well as social sanctions undergone in the case of dismissal.[10] The latter type of sanction occurs if the dismissal is perceived as harmful to the community of the headquarters. Because the perception is not the same if it takes place within the community itself or at a more distant place, we allow the level of social sanction (denoted $S_j$) to depend both on the type of contract and the distance to 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, selfish and unselfish. Selfish communities care only about dismissals of their members or dismissals occurring in other communities with which they interact. In this case, the more intense the interactions of the community of the headquarters with 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 selfish communities, the social sanction implied by a separation in establishment $j$ is a 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,[11] $S_j$ will be a decreasing function of distance from headquarters $\delta_j$:

$$S_j = s - m(\delta_j) \qquad [1.3]$$

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

[10] We assume that termination of fixed-term contracts at end date does not entail any social sanction. This is consistent with evidence in the literature suggesting that terminations are considered unfair only in case of commitment to long-term employment (Rousseau and Anton, 1991; Charness and Levine, 2000).

[11] Bassanini et al. (2017) provide evidence that the intensity of social relations, measured as the frequency of encounters of an individual with her parents, in-laws, children and friends, decreases with the geographical distance between individuals.

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

$$S_j = s \quad \forall j$$

For the sake of simplicity, we assume here that communities are indifferent between fixed-term and permanent contracts. However, we show in Appendix A1.4 that the main predictions of the model still hold if communities put pressure on CEOs to hire workers on permanent rather than fixed-term contracts.

Firms are wage-takers and workers are paid wage *w*.[12] Assuming away discounting for simplicity, the CEO's expected utility from hiring on an open-ended contract on a job with risk $\gamma$ in establishment *j* is:

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

The first two terms 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 administrative and legal costs and the social sanction.[13] Re-arranging eq. [1.4] yields:

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

where $c^o = d^o + S + h^o$. 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:

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

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 $h^f$.

[12] 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.

[13] 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.

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 A1.1, both expected utilities in eqs. [1.5] and [1.6] are decreasing and convex in $\gamma$. 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.[14] 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 $\gamma$, denoted $\bar{\gamma}$ hereafter, such that the firm hires on open-ended contract if $\gamma < \bar{\gamma}$ (see Appendix A1.2). Intuitively, when 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 2).

**Figure 2 about here**

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 A1.3 but it can be easily understood since an increase in adjustment costs for open-ended contracts make these contracts more expensive for any job risk $\gamma$, 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, therefore resulting in a reduction 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 A1.5). 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 adjustment costs on open-ended contracts increase, the CEO becomes choosier which reduces

[14] 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 $\gamma$, since – as shown in Appendix A1.1 – expected utilities in eqs. [1.5] and [1.6] are decreasing and convex in $\gamma$ and when $\gamma \to 0$, $U^o(\gamma) \to +\infty$, while this is not the case for $U^f(\gamma)$.

the job-risk cut-off and therefore the probability of hiring on an open-ended contract. In turn, it 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 $\gamma$. 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 eq. [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 sanction 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

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

When the headquarters are located in an unselfish 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 eq. [1.1] above):

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

which implies that the share of fixed-term contract rises with distance in unselfish communities. In contrast, in selfish 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 negative, the first one is positive, which results in an ambiguous sign of $dL^f/d\delta$. In other words, when the headquarters are located in a selfish community the

threat of social sanctions may offset 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 selfish communities. By contrast, when the headquarters are located in areas characterized by unselfish 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, Selfishness and Short-term Contracts

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

$$L^f{}_{jFt} = \beta_0 + \beta_1 Dist_{iFt} + X_{iFt}\beta_2 + D_t + D_F + \varepsilon_{iFt} \qquad [2.1]$$

where $L^f{}_{jFt}$ denotes the share of fixed-term contracts in new hires in establishment *j* of firm *F* at year *t*, $Dist_{jt}$ 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.

We estimate this equation on our full sample of firms and separately for firms with headquarters located in selfish and unselfish 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 unselfish 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 selfish, 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 selfish and unselfish 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 outperform establishments located closer to headquarters. If performance is, to some extent, correlated with the type of employment contracts, OLS estimates of (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 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 $PC$ 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 of these markets to the closest establishment of the firm. As is classical in

economic geography, we capture purchasing capacity by population as measured in 1999[15] and local markets by employment areas.[16]

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.[17] Formally, the *potential location* ($PL$) is defined as:

$$PL_i = \underset{h}{\text{argmax}}\{CMPF_h\} = \underset{h}{\text{argmax}} \left\{ \sum_{k \in \left\{ Dist_{kh} < \min_{j \in F \setminus \{i\}} (Dist_{kj}) \right\}} \frac{POP_k}{Dist_{kh}} \right\} \qquad [2.2]$$

where $h$ indexes the employment areas. One concern here could be that the population we use to compute $CMPF_j$ is not pre-dated with respect to our sample. To overcome this problem, as suggested by the literature in economic geography, we use land ruggedness as an exogenous predictor of local population.[18] The underlying assumption is that more rugged locations are

[15] 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.

[16] 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 km$^2$.

[17] 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. To do so, we assume that all other 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 a few thousand establishments.

[18] See Combes et al. (2010) and Nunn and Puga (2012).

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,[19] $PL_i$ can be written as:

$$PL_i = \underset{h}{\operatorname{argmax}} \left\{ \sum_{k \in \left\{ Dist_{kh} < \min_{j \in F \setminus \{i\}} (Dist_{kj}) \right\}} \frac{RUG_{max} - RUG_k}{Dist_{kh}} \right\}$$

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 uncorrelated 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. As shown in Table A1, potential distance is uncorrelated to local demand, as measured by the *CMPF*.[20] This suggests that the orthogonality condition required for instrument validity holds for the potential distance.[21]

## II.B Extensions

### *II.B.1 Firm visibility*

The literature on social pressure suggests that it affects individuals' decisions only when they are visible (Della Vigna et al., 2012; Funk, 2010). In our setup, this suggests that

[19] 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 1km by 1km. The correlation between ruggedness and population across employment areas is significant at the 1% level in our data.

[20] 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.

[21] 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 the Appendix, our results are robust to using this instrument although it is not our preferred one since it contains very little information and is therefore somewhat weaker.

CEOs will be subject to social pressure against dismissals arising from the local community of their headquarters, only when their firm is visible in that community. We test this prediction by estimating the following equation:

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

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 $\beta_2$ 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. $\beta_1$) is ambiguous since the positive impact to due 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 selfish and unselfish communities. When the firms' headquarters are located in unselfish 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, 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 selfish areas if the social pressure effect is strong enough.

*II.B.2 CEOs' place of living*

CEOs are likely to be more sensitive to social pressure exerted by the local community at headquarters when they not only work but also live in that community. We have information about the CEO's place of living for a limited subsample of our data. So, we test this prediction estimating the following equation:

$$L^f{}_{jFt} = \beta_0 + \beta_1 Dist_{iFt} * Self_{Ft} * Same_{Ft} + \beta_2 Dist_{iFt} * Self_{Ft} * Diff_{Ft} + \beta_3 Dist_{iFt} * Unself_{Ft} * Same_{Ft} + \beta_4 Dist_{iFt} * Unself_{Ft} * Diff_{Ft} + X_{iFt}\beta_2 + D_t + D_F + \varepsilon_{iFt} \quad [2.4]$$

where $Self_{Ft}$ (resp. $Unself_{Ft}$) is a dummy variable capturing whether the local community at the firm's headquarters is selfish (resp. unselfish) and $Same_{Ft}$ (resp. $Diff_{Ft}$) is a dummy variable capturing whether the CEOs lives in the same (resp. different) community as the

firm's headquarters. We use this specification rather than splitting our sample since in the latter case sample size would be too small with respect to the number of control variables to obtain meaningful estimates. If CEOs are more sensitive to social pressure when they live and work in the same place, we expect $\beta_1$ to be more negative than $\beta_2$, and $\beta_3$ and $\beta_4$ to be positive and of similar magnitude.

*II.B.3 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 selfish communities, as the distance between the establishment and its headquarters increases, social pressure decreases. The underlying assumption is that social ties become looser, which tends to decrease the adjustment cost associated with permanent contracts thus reducing the share of fixed-term contracts. However, as distance increases, monitoring problems get worse which increases the probability of a negative economic shock. This pushes the share of fixed-term contracts to co-vary with distance.

By using a concept of distance based on the intensity of social ties among communities, one should reduce the effect related to monitoring, since monitoring problems are unlikely to vary with the intensity of such ties. In this case, the most important effect, by far, should be that of social pressure. To test this prediction, we consider that an establishment is located close to headquarters when a high proportion of individuals living at headquarters were born in the geographical area of the establishment. We estimate then the following equation:

$$L^f{}_{jFt} = \beta_0 + \beta_1 SocDist_{iFt} + X_{iFt}\beta_2 + D_t + D_F + \varepsilon_{iFt} \qquad [2.5]$$

where $SocDist_{iFt}$ is a proxy of the distance of establishment *j* to the firm's headquarters based on social ties. With this specification, we expect to find an unambiguously negative impact of distance on fixed-term contracts for firms with headquarters located in selfish communities and no significant effect of distance for firms with headquarters located in unselfish communities – since neither monitoring problems nor social pressure vary with this measure of distance when headquarters are in unselfish communities.

## III. The Data

The data that we use come from the matching of 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*[22]) 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 occupational structure of the workforce as of December 31st of each year. Since we want our control variables to be lagged at least one year, our estimates are run on the period 1998-2009.

For each establishment in the DADS, we know the identifier of its headquarters as of December 31st of each year 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 database. 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.[23] Both databases have information on hiring flows (excluding temporary agency workers) including their occupational, gender, age and

[22] *Arrondissements,* are subdivisions of municipalities. They exist only for the three largest French cities: Paris, Lyon and Marseille.
[23] We do not have any information on worker flows for establishments with less than 10 employees.

nationality composition and the type of contract on which employees are hired.[24] 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 they have 0 hiring. 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*[25] 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*. 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 square kilometers – the error we are making on the actual location is very small.[26] 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*[27] to which municipalities belong and the *Base Communale des Zones d'Emploi* allows us to know in which employment areas each municipality is located.[28]

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 1988-1997. 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 over 1988-1997. The underlying assumption is that the greater this proportion, the more social and family ties across the populations of both *départements*. This suggests taking the inverse of proximity as a measure of distance. 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 departments from those with the highest (rank 1) to those with the lowest

[24] The type of contract on which individuals are employed is not available for transfers. So, we cannot use them in our analysis.
[25] This database is produced by the French *Institut National de l'Information Géographique et Forestière* (IGN).
[26] All French municipalities but nine are no larger than a square of 14x14 kilometers. Therefore, assuming that establishments are located at the barycenter implies that the maximum possible error for these 36,561 municipalities is less than 10 kilometers. Moreover, the nine larger municipalities account for only 0.12% of the French population altogether.
[27] *Départements* are regional subdivisions larger that municipalities but smaller than regions.
[28] This database is provided by the French Statistical Institute (INSEE).

(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).

Information on the level of unselfishness of the area where the firm's headquarters are located is obtained through two different proxies. The first one is based on charity giving as measured at the *département* level. The underlying assumption is that more unselfish people will be more prone to make donations since they are more concerned by others and less self-centered. Using data from the 1890 *Annuaire Statistique de la France*, we compute the total *département*-level receipts of local secular charity centers as of 1887. We standardize these donations by *département* GDP.[29] This measure of generosity being dated more than one century ago, there is no doubt that it is exogenous with respect to the share of fixed-term contracts as measured in 1998-2009.[30] As shown in Appendix Table A2, the distribution of charity donations is quite skewed. Therefore, in our empirical analysis we consider that headquarters are located in unselfish (high-charity) *départements* when the latter belong to the upper 25% of the donation-to-GDP distribution. Symmetrically, headquarters are considered to be located in selfish (low-charity) *départements* when they belong to the bottom 75% of the distribution. The distribution of charity donations to GDP by *département* is shown on Appendix Figure A3.

Our second proxy of the level of unselfishness of local communities is based on the differential turnout rates at the national versus local elections provided by the French Ministry of Interiors for all French municipalities. We aggregate turnout rates at the level of *départements* and we proxy unselfishness with the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 national referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. The underlying assumption behind this measure is that more unselfish people will be relatively more concerned by national stakes than by local ones, so that their participation to the national referendum (as compared to local elections) will be higher. As for charity, we consider headquarters as located in unselfish *départements* when the headquarters'

[29] *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.

[30] At the same time, this measure of unselfishness is correlated with current unselfishness as measured by the 2003-2010 average 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.

*département* belongs to the upper 25% of the distribution of differences in turnout rates at the national referendum and municipal elections. Symmetrically, we attribute headquarters to selfish *départements* when the headquarters' *département* belongs to the bottom 75% of the distribution. Descriptive statistics for the difference between national and municipal elections' turnout rates and its geographical distribution are provided in Appendix Table A2 and Appendix Figure A4. The difference is negative all over the distribution, indicating that election turnout was systematically higher at the 2001 municipal elections than at the 2000 national referendum.

We match these data sources and keep all business companies – excluding non-for-profit organizations (charities, foundations, etc.) and public administrations. We only keep firms with at least two secondary establishments in our dataset[31] 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. Our matched sample contains 39,645 secondary establishments belonging to 7,252 different firms. The distributions of headquarters and secondary establishments by employment area are presented in Appendix Figures A5 and A6, respectively. In the empirical analysis, 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 almost 50% of all headquarters in France. Moreover, Paris and its close suburbs turn out to be systematically unselfish areas (whether measured on the basis of charity donations or election turnout). This sample contains 23,126 secondary 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 Paris region).

The DADS dataset also provides information on 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 only have information on the CEOs' place of living for a small sub-sample of observations in our data, namely 1,866 firms covering 8,764 establishments. We use these data to construct a dummy variable equal to 1 if CEOs live and work in the *département* of the firm's headquarters and 0 otherwise. Alternatively, we define a dummy variable equal to 1

[31] 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.

if the CEO lives in a *département* different from that of the headquarters and 0 otherwise. In this subsample 55.8% 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 hiring flows in France, we can compute the weighted sum of all fixed-term contracts over all establishments for each quarter and divide it by the weighted sum[32] of all hiring in all establishments. 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, 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 larger shares of fixed-term contracts than average. The distribution of these shares by employment area is shown on 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 239km – see Appendix Table A5. The mean distance to the closest establishment is 97km and 263km 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 going from 1 to 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 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 3 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

[32] Using aggregation weights provided in the DMMO-EMMO.

fixed-term contracts turns out to be slightly positive with a coefficient of correlation of 0.3, although insignificant at conventional levels. This is consistent with our model which predicts that the overall effect of distance to headquarters on the share of fixed-term contracts should be close to zero to the extent that it is the combination of a positive effect in firms with headquarters located in unselfish communities and an ambiguous, but possibly negative effect, in firms with headquarters located in selfish communities.

This is actually what we observe when we consider separately firms with headquarters located in selfish and unselfish *départements*. Whatever the measure of selfishness we use (either based on charity donations or on election turnout), we find that the share of fixed-term contracts increases with distance to headquarters for firms with headquarters in unselfish communities, with coefficients of correlation ranging from 0.56 to 0.58 (significant at conventional levels) according to the indicator of selfishness. 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 selfish 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 try and confirm it.

*IV.2 Fixed-Term Contracts and Physical Distance to Headquarters*

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, 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 et al., 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 employ a larger share of individuals on open-ended contracts to the extent that it may be easier for them to relocate employees within the plant in case of negative shock. This argument may carry on to firms with several small establishments in the same employment area, but a large overall size. 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 females 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.

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 selfish and unselfish communities, the average impact of distance to headquarters on fixed-term contracts results from two counterbalancing 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 selfish and unselfish *départements*, we confirm that the patterns of impact of distance to headquarters on the share of fixed-term contracts in hiring is opposite in both types of firms. For establishments with headquarters located in unselfish *départements* as measured on the basis of charity donations, the distance between the former and the latter has a positive and significant impact on the share of fixed-term contracts in hiring – see Table 1, col (2). Results are similar when selfishness is measured on the basis of differential turnout at the local and national elections – 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 selfish *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 selfishness we use – see Table 1, cols (3) and (5).[33] 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. 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 kilometers, the share of fixed-term contracts decreases by 2.18 percentage points – see col (3), i.e. by 3.8% as measured at the sample average (57.5%).[34]

As mentioned in Section III, our preferred sample excludes headquarters located in the Paris area since, as they represent almost 50% 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 A8. When we do so, the number of observations with headquarters located in unselfish *départements* is multiplied by more than 2 whereas the number of those in selfish *départements* does not change. Despite this major difference, our results are similar – see Table A8, 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 unselfish *départements*, the impact of distance to headquarters on the share of fixed-term contracts in hiring is positive and significant at the

[33] 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 21.

[34] OLS estimates of equation [2.1] are presented in Table A7 in the Appendix. For establishments of firms with headquarters in unselfish *départements*, the impact of distance to headquarters on the share of fixed-term contracts in hiring is positive but smaller than in Table 1 and not significant at conventional levels – 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 suffer from 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 which is likely to account for the fact that although the point estimate we find is positive, it is not significant at conventional levels. In contrast, for establishments of firms with headquarters located in selfish *départements*, the impact of distance remains negative and significant – see Table A7 cols (3) and (5). When estimated on the full sample, the impact of distance on the share of fixed-term contracts is negative and insignificant, since it combines a small positive and insignificant effect for firms with headquarters in unselfish *départements* and a negative effect for firms with headquarters in selfish *départements* – see Table A7 col (1).

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 A8, 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 unselfish *départements*, while it is negative and significant for establishments with headquarters located in selfish *départements*.

Another concern could be that the selfishness of *départements* could capture other local characteristics such as economic deprivation or specialization, 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 selfishness of the *département* of the headquarters could actually be due to the fact that more unselfish (resp. selfish) communities are so because they are richer, more (or less) educated, more (or less) 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 respectively with the dummy variables for selfishness and unselfishness, controlling for the interactions between physical distance and each of the following potential confounders. As regards charity giving, the potential confounders that we consider are *département* GDP per capita as of 1864, the share of agriculture in total employment in 1886, the birth and literacy rates in 1886, property and violent crime rates in 1887 and the number of priests per capita in 1791. Concerning election turnout, the potential confounders 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 25-34 without any diploma in 2011, property and violent crime rates in 2011 and the average proportion of Catholics in 2005-2009. [35]

By controlling for the interaction between physical distance and each of these variables, we make sure that the differential impact that we find in high and low-charity (resp. high and low election turnout) *départements* is due to the interplay of local social pressure and selfishness rather than to any other economic or cultural local characteristics. The

[35] These variables aim at capturing the same potential confounding factors as for charity, taking 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 the tertiary sector as a measure of economic specialization at the beginning of the XXI century, while we use the employment share of agriculture in the late XIX century. The latter is indeed extremely low in all French *départements* nowadays (the median being 5.2%).

corresponding results are presented in Table 2. 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: whatever the measure of selfishness we use, physical distance has a positive and significant impact on the share of fixed-term contracts in establishments with headquarters located in unselfish *départements*, while its impact is negative and significant for establishments with headquarters located in selfish communities. The results are virtually the same when adding controls for physical distance interacted with each of the potential confounders of *département* selfishness – see cols (2) and (4).[36] This suggests that our findings are not driven by differences in economic development or social characteristics across *départements*.

*IV.3 Extensions*

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.[37] As shown in Table 3 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, 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

[36] If we re-estimate the specification in Table 2 using unselfishness as a continuous – rather than dichotomized – variable, our findings are qualitatively unchanged. The point estimate on the interaction between distance to headquarters and unselfishness as measured on the basis of charity giving is 20.62 with standard errors 5.84, significant at the 1% level. Similarly, the point estimate on the interaction between distance to headquarters and unselfishness as measured by election turnout is 0.62 with standard errors 0.26, significant at the 5% level. This confirms that the positive relationship between distance and short-term contracts gets stronger when unselfishness at headquarters is higher.

[37] 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.

selfish and unselfish *départements* are consistent with this pattern of results. When firms' headquarters are located in unselfish *départements*, no social pressure arises from the local community so that the effect of monitoring and asymmetric information dominates – see cols (2) and (4) of Table 3: the impact of distance to headquarters on the share of fixed-term contracts is positive and significant – except in the case of charity donations and highly visible firms. In contrast, for firms with headquarters located in selfish *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 *département* where the local community cares about dismissals to the extent that they threaten people with whom they have close contacts. Finally, whenever local communities at headquarters are selfish but the firm is not visible – because it accounts for a small enough share of local employment – the impact of distance on the share of fixed-term contracts in hiring is positive although insignificant.

We also expect the negative impact of distance to headquarters on the share of fixed-term contracts that we observe in selfish *départements* to be stronger whenever CEOs not only work but also live at headquarters. In contrast, in unselfish *départements*, we expect that the place of living of the CEO will make little difference since social pressure does not vary with distance. To test these predictions, we make use of the information on the CEO's place of living. However, as discussed in Section III, this is available only for a limited subsample of our observations, which may not be representative at the aggregate level. So the following results have to be interpreted with caution. As a first check of the specificity of this sample, we re-estimate the model presented in Table 2 in which distance is interacted with the degree of selfishness at headquarters on this subsample. As can be seen in Table 4 – cols (1) and (3), results are highly similar when selfishness is measured on the basis of election turnout. By contrast, they are weaker when selfishness is measured based on charity giving: the impact of distance on the share fixed-term contracts in hiring is still positive and significant when firms' headquarters are located in unselfish *départements*, but the effect is essentially zero when headquarters are located in selfish communities. We then estimate equation [2.4] where physical distance is interacted both with selfishness/unselfishness of the headquarters' *département* and with our dummy variable for CEO living/not living at headquarters. As expected, for firms with headquarters located in unselfish *départements*, the impact of distance to headquarters on the share of fixed-term contracts is positive and the point

estimates are very close whatever the place of living of the CEO – see Table 4, cols (2) and (4). This result holds whether we measure selfishness on the basis of charity giving or election turnout. Conversely, for firms with headquarters in selfish *départements* and selfishness measured on the basis of election turnout, distance to headquarters has a negative and significant effect (at the 10% level) on the share of fixed-term contracts. Moreover this effect is twice as large as the one we obtain for CEOs not living in the *département* of the headquarters. When selfishness is measured based on charity giving this effect is also negative, although not significant at conventional levels, and it is very close to what we obtain on the interaction between physical distance and selfishness in Table 2. By contrast, all other point estimates in column 2 of Table 4 are positive. These findings yield support to the hypothesis that CEOs are more sensitive to social pressure in the community of the headquarters when they not only work, but also live in that community.

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 [2.3]. The corresponding results are presented in Table 5. 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 selfish and unselfish *départements*. As expected, whatever the measure of selfishness we use, the impact of birthplace distance is positive but insignificant for firms with headquarters in unselfish *départements* – see col (2) and (4), whereas it is negative and significant for firms with headquarters in selfish *départements* – see col (3) and (5). [38] These findings confirm that when distance to headquarters is measured on the basis of social relations, there is no positive impact of distance on the share of fixed-term contracts. As expected, monitoring problems do not vary with birthplace distance since it is based on social ties. In contrast, social pressure decreases with birthplace distance so that adjustment costs on open-ended contracts tend to be higher for establishments located closer to headquarters. This translates into the fact that these establishments rely more on fixed-term contracts whenever their headquarters are located in a selfish community.

[38] 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 selfish 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 permanent 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 selfishness of the local community at headquarters while we observe that this is the case only for firms with headquarters located in selfish communities. For firms with headquarters in unselfish *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 selfishness of the local community at headquarters, which is not the case in our results.

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 reasons for this are 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 selfishness, 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 selfish areas. In our data we actually observe that the turnout rate at professional elections is higher in selfish than in unselfish *départements* (34% as compared to 31%). In France, all candidates at

professional 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 professional elections is considered a good proxy of unions' strength. We re-estimate the model in Table 2 – cols (2) and (4) adding an interaction term between distance to headquarters and the turnout rate at professional elections in the *département* of the headquarters in 2002. Our results are virtually unchanged.[39] This suggests that the differences in our results between establishments of firms with headquarters located in selfish and unselfish communities 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 be used for hiring workers locally, and if firms perceive the subsidies as non-permanent, they will hire more workers close to headquarters and 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 hiring – see Table A9 –, even in establishments of firms with headquarters located in selfish *départements*.

## 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 selfish communities, the share of fixed-term contracts in hiring in larger in establishments located closer to headquarters while the opposite holds for firms with headquarters located in unselfish communities. These findings are the same whether we use a measure of selfishness based on charity giving or on election turnout. They are also robust to using a measure of distance to headquarters based on social ties rather than geography. We also show that the negative impact of distance to headquarters on the share of fixed-term contracts when headquarters are located in selfish communities is concentrated on firms that are highly

[39] The point estimate (resp. standard error) is 0.0212 (resp. 0.0098) on physical distance interacted with unselfish headquarters and -0.0319 (resp. 0.0117) on physical distance interacted with selfish headquarters for selfishness measured on the basis of charity giving and 0.0182 (resp. 0.0071) on physical distance interacted with unselfish headquarters and -0.0332 (resp. 0.0120) on physical distance interacted with selfish headquarters for selfishness measured on the basis of local vs national election turnout.

visible at headquarters and that it is stronger when 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 work-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 or local employment subsidies.

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. 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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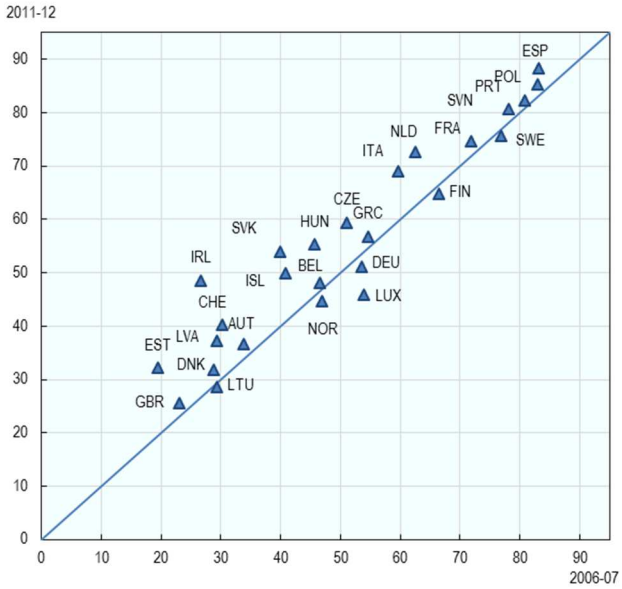
# Tables and Figures

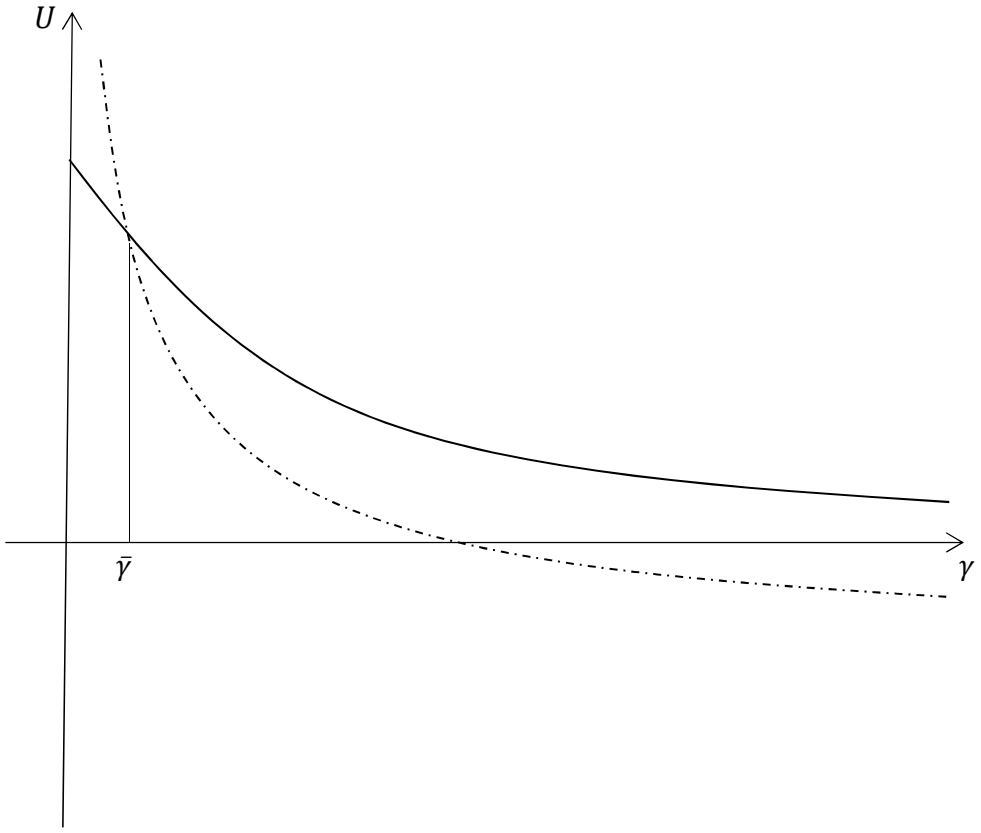
**Figure 1. Proportion of Employees on fixed-term contracts among employees with no more than three months of tenure,**
2006-07 and 2011-12




*Source:* OECD calculations based on microdata from the European Union Labour Force Survey (EU-LFS).

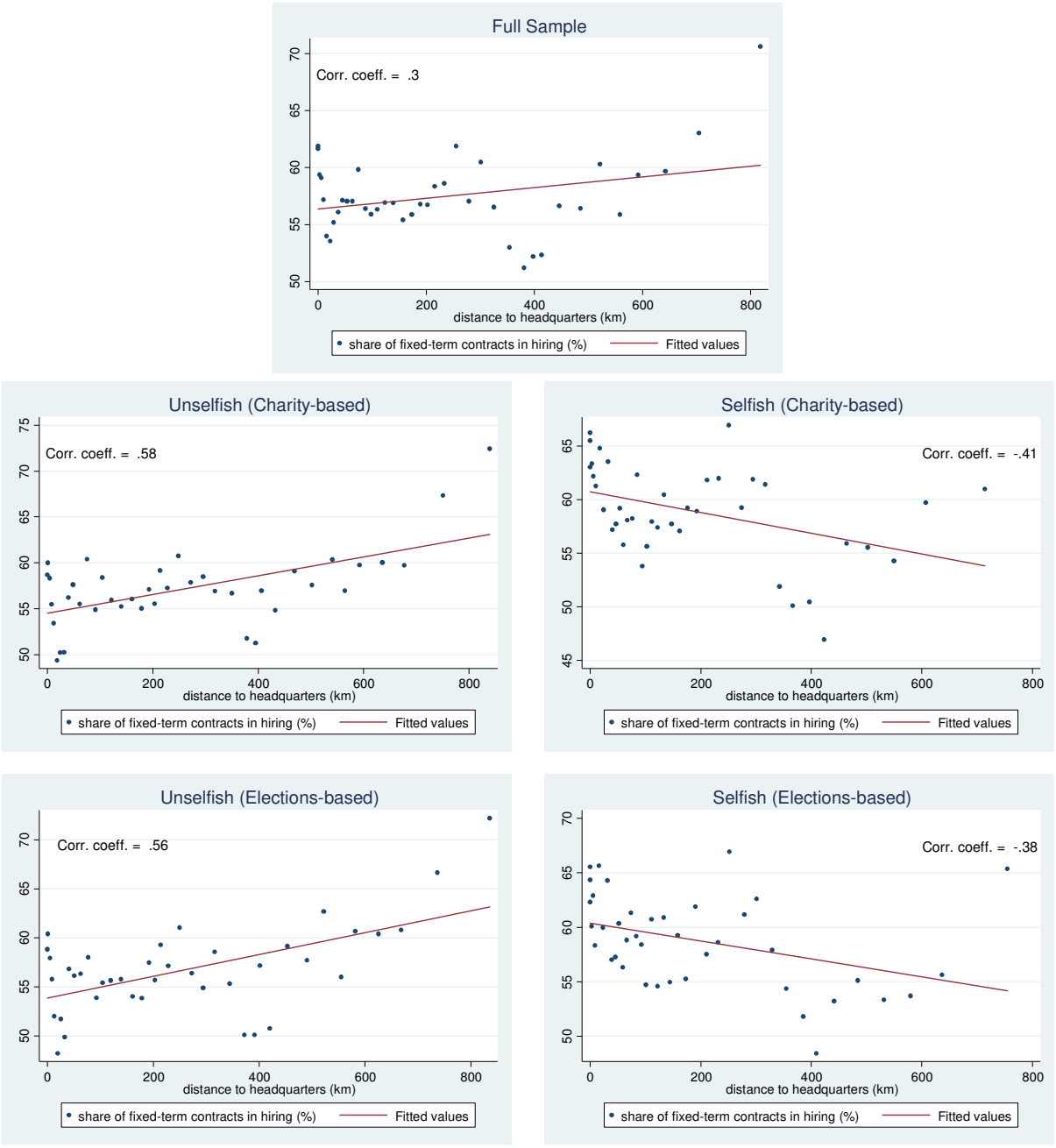
**Figure 2**

**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 3. 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 selfishness/ unselfishness | | Charity | | Election turnout | |
| *Département* of Headquarters (HQ) | Full Sample | Unselfish (High charity) | Selfish (Low charity) | Unselfish (High turnout) | Selfish (Low turnout) |
| Actual physical distance to HQ | 0.0074 | 0.0167*** | -0.0218*** | 0.0176*** | -0.0284*** |
| | (0.0048) | (0.0039) | (0.0075) | (0.0042) | (0.0083) |
| Control variables | yes | yes | yes | yes | yes |
| Observations | 73,601 | 44,195 | 25,333 | 46,958 | 26,643 |
| R-squared | 0.510 | 0.517 | 0.521 | 0.512 | 0.519 |
| First stage coefficient on instrument | 0.529*** | 0.516*** | 0.528*** | 0.478*** | 0.458*** |
| | (0.033) | (0.055) | (0.042) | (0.057) | (0.056) |

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, 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. Charity 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 unselfish *département* if this *département* belongs to the upper 25% of the charity distribution. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. A firm is assumed to have headquarters located in an unselfish *département* if this *département* belongs to the upper 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a selfish *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. Controlling for other characteristics of the Headquarters' *Département* interacted with distance. Physical Distance – IV estimates**

| Dep.var: Share of fixed-term contracts | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Charity | | Election Turnout | |
| Physical distance*Unselfish HQ | 0.0124*** | 0.0182** | 0.0146*** | 0.0191*** |
| | (0.0040) | (0.0091) | (0.0040) | (0.0073) |
| Physical distance* Selfish HQ | -0.0179** | -0.0299*** | -0.0250*** | -0.0355*** |
| | (0.0091) | (0.0114) | (0.0085) | (0.0118) |
| Baseline control variables | yes | yes | yes | yes |
| Extended control variables | no | yes | no | yes |
| Angrist-Pischke F-test on Dist*Unselfish | 171.62 | 38.73 | 142.82 | 87.83 |
| Angrist-Pischke F-test on Dist*Selfish | 136.80 | 83.47 | 159.55 | 72.58 |
| Observations | 69,528 | 67,142 | 73,601 | 73,601 |
| R-squared | 0.512 | 0.510 | 0.508 | 0.504 |

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, 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. Charity 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 unselfish *département* if this *département* belongs to the upper 25% of the charity distribution. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. A firm is assumed to have headquarters located in an unselfish *département* if this *département* belongs to the upper 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. In the specifications where unselfishness 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 1886, the birth and literacy rates in 1886, property and violent crime rates in 1887 and the number of priests per capita in 1791. In the specifications where unselfishness 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, the time-varying unemployment rate, the poverty rate in 2006, the share of youth aged 25-34 without any diploma in 2011, property and violent crime rates in 2011 and the average proportion of Catholics in 2005-2009. 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 Firm Visibility at Headquarters – IV estimates**

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

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, 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. Charity 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 unselfish *département* if this *département* belongs to the upper 25% of the charity distribution. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. A firm is assumed to have headquarters located in an unselfish *département* if this *département* belongs to the upper 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a selfish *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: Differential Impact of Distance to Headquarters on the Share of Fixed-term Contracts according to CEOs' place of living.**
**Physical Distance – IV estimates**

| Dep.var: Share of fixed-term contracts | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Charity | | Election Turnout | |
| Physical distance*Unselfish HQ | 0.0152*** | | 0.0189*** | |
| | (0.0056) | | (0.0055) | |
| Physical distance*Selfish HQ | 0.0013 | | -0.0208** | |
| | (0.0127) | | (0.0100) | |
| Physical distance* CEO not living at HQ*Unselfish HQ | | 0.0149** | | 0.0187*** |
| | | (0.0061) | | (0.0063) |
| Physical distance*CEO living at HQ*Unselfish HQ | | 0.0166* | | 0.0193** |
| | | (0.0097) | | (0.0092) |
| Physical distance* CEO not living at HQ*Selfish HQ | | 0.0073 | | -0.0151 |
| | | (0.0168) | | (0.0140) |
| Physical distance*CEO living at HQ*Selfish HQ | | -0.0168 | | -0.0277* |
| | | (0.0212) | | (0.0167) |
| Baseline control variables | yes | yes | yes | yes |
| Angrist-Pischke F-test on Dist*Unselfish | 108.93 | | 93.85 | |
| Angrist-Pischke F-test on Dist*Selfish | 36.72 | | 62.46 | |
| Angrist-Pischke F-test on Dist*Not Living at HQ*Unselfish | | 49.91 | | 38.51 |
| Angrist-Pischke F-test on Dist* Living at HQ*Unselfish | | 26.21 | | 27.94 |
| Angrist-Pischke F-test on Dist*Not Living at HQ*Selfish | | 13.25 | | 6.16 |
| Angrist-Pischke F-test on Dist*Living at HQ*Selfish | | 9.70 | | 14.48 |
| Observations | 18,223 | 18,223 | 19,711 | 19,711 |
| R-squared | 0.535 | 0.534 | 0.531 | 0.531 |

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, 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. Charity 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 unselfish *département* if this *département* belongs to the upper

25% of the charity distribution. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. A firm is assumed to have headquarters located in an unselfish *département* if this *département* belongs to the upper 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. A CEO is considered to live at the firm's headquarters if she lives in the *département* of the headquarters (this information is available only for CEOs who are wage-and-salary employees of their firm). 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 5: Impact of Birthplace 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 selfishness/ unselfishness | | Charity | | Election turnout | |
| *Département* of Headquarters (HQ) | Full Sample | Unselfish (High charity) | Selfish (Low charity) | Unselfish (High turnout) | Selfish (Low turnout) |
| Actual birthplace distance to HQ | -0.0011 | 0.0054 | -0.0048*** | 0.0049 | -0.0050*** |
| | (0.0019) | (0.0043) | (0.0015) | (0.0039) | (0.0016) |
| Control variables | yes | yes | yes | yes | yes |
| Observations | 73,601 | 44,195 | 25,333 | 46,958 | 26,643 |
| R-squared | 0.511 | 0.495 | 0.499 | 0.492 | 0.497 |
| First stage coefficient on instrument | 0.122*** | 0.073*** | 0.166*** | 0.077*** | 0.157*** |
| | (0.024) | (0.024) | (0.031) | (0.025) | (0.024) |

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, 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. Charity 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 unselfish *département* if this *département* belongs to the upper 25% of the charity distribution. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. A firm is assumed to have headquarters located in an unselfish *département* if this *département* belongs to the upper 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a selfish *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

## A1. Theoretical appendix

Under the model's assumptions, the utility functions satisfy

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

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 $\gamma$. Second, we characterize the risk level $\bar{\gamma}$ such that the CEO is indifferent between the two contracts and we demonstrate it is unique. Then we show that it decreases with the adjustment costs of open-ended contracts. Finally, we consider a case where risk distributions can shift with distance.

### *A1.1. 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

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

### *A1.2. 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 $\gamma$. Then remark that

$$\lim_{\gamma \to O^+} U_j^o(\gamma) \to +\infty$$

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

while

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

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

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 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

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

and

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

there is a unique risk threshold $\bar{\gamma}$. See Figure 2 for a graphical illustration.

### *A1.3. 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

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

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

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

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 decreases the threshold.

### *A1.4. The effect of distance when communities put pressure to hire worker on permanent rather than fixed-term contracts*

If communities put pressure on CEOs to hire workers on permanent rather than fixed-term contracts, the adjustment cost paid at hiring would be the sum of the writing cost and the social sanction, which in turn would decrease with distance in selfish 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 $h^f$, it is easy to show that all the statements concerning the unselfish case made in the main text as well as in Appendices A1.1 and A1.2 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 in Appendix A1.3 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 selfish case, where $C$ may vary as a function of $\delta$. 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 $\alpha < 1$.

### *A1.5 The effect of distance when there is a maximum level of profitable risk*

Consider that no job is profitable above a certain level noted $\gamma^{max}$. 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

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

were $F(\gamma^{max}, \delta)$ stands for the probability that the job is profitable and therefore the worker is hired. Then the effect of adjustment costs for open-ended contract 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 push 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, on gets

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

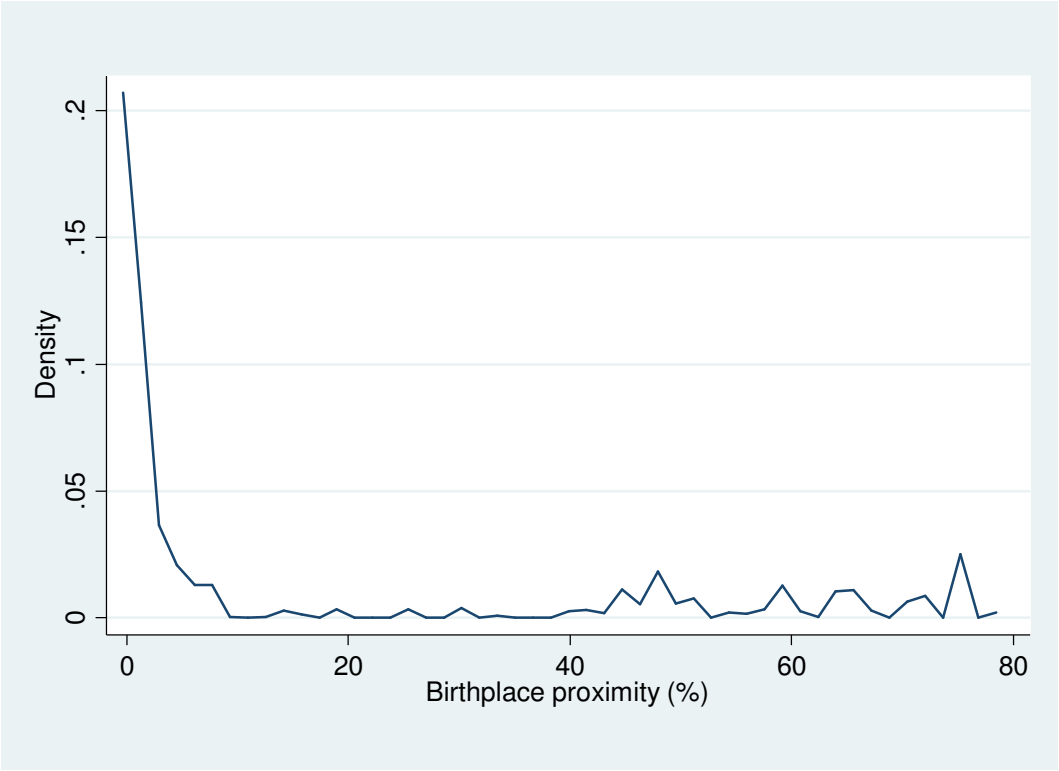
When headquarters are located in an *unselfish* community, social sanctions are independent of distance, $dS/d\delta = 0$, it simplifies

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

The sign of the above expression is undetermined. Intuitively, when distribution of risk shifts, more matches are unprofitable and thus both the number of open-ended contracts and the number of fixed-term contracts are changing. However, $\partial L^o/\partial \delta < 0$ in unselfish 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 A9 in Appendix A2, however, we find no evidence of this in our data.

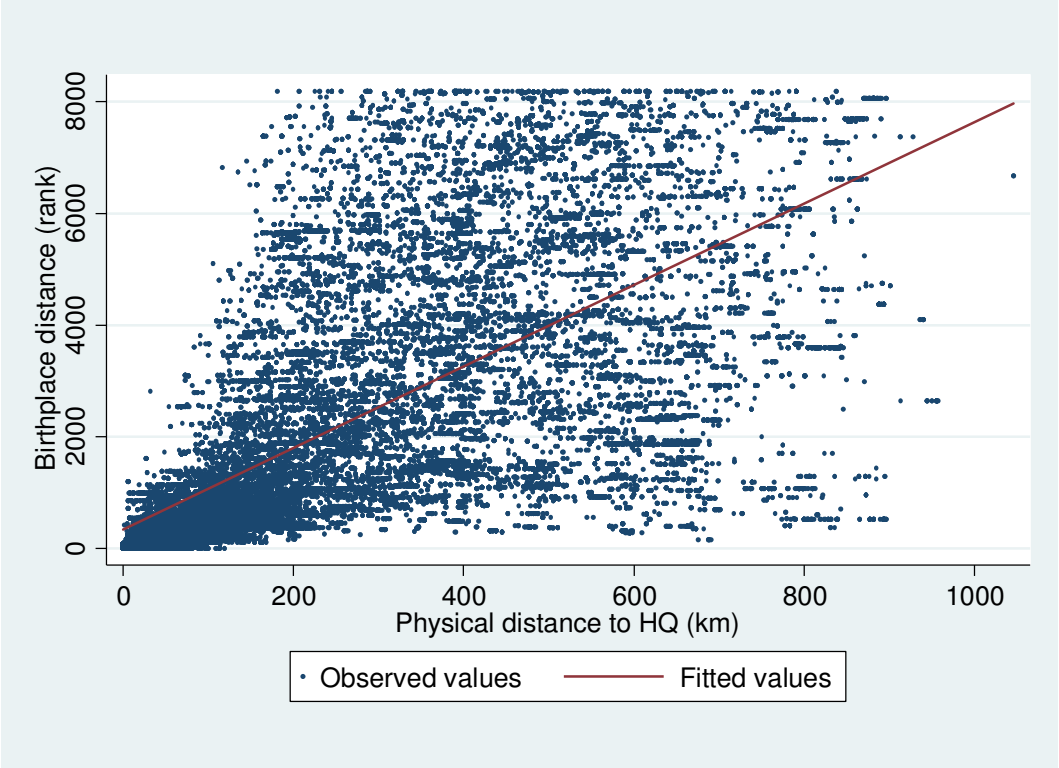
## A2. Appendix Figures and Tables

**Figure A1 – Density of Birthplace proximity**



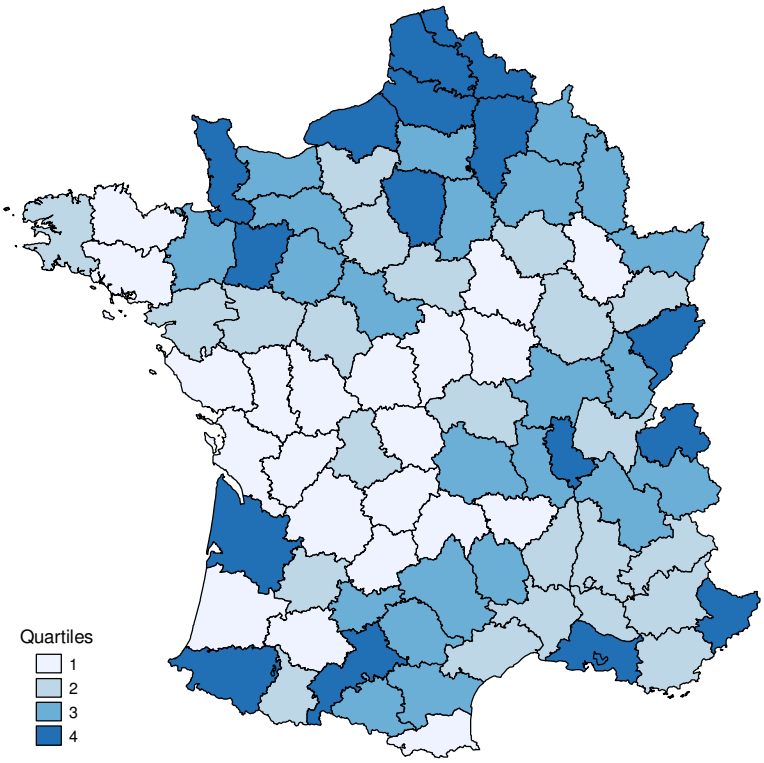

Note: Birthplace proximity is measured by the share of individuals living in the *département* of the headquarters who were born in the *département* of the establishment.

**Figure A2 – Physical and Birthplace Distances**



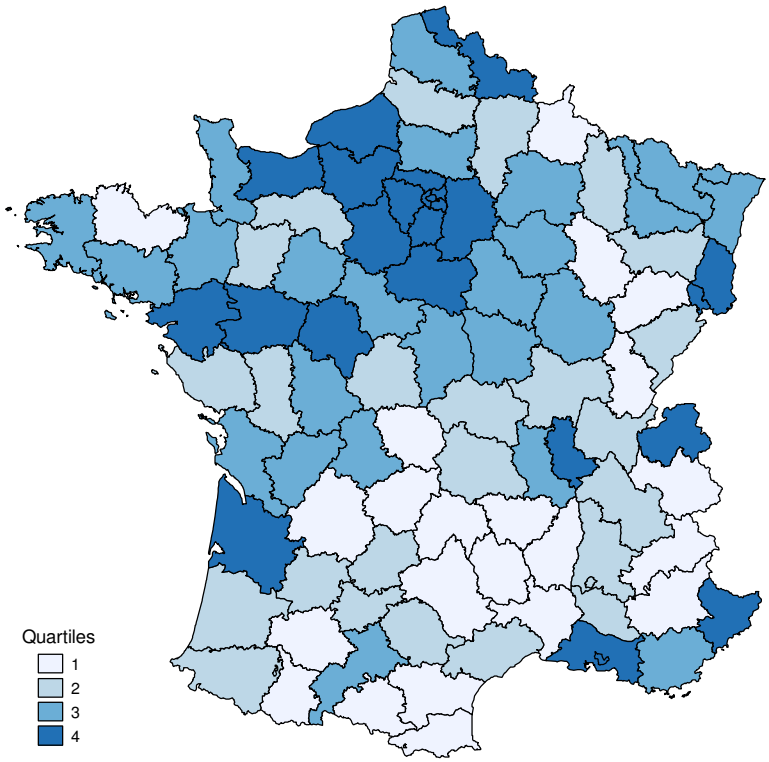

Note: Physical distance is measured in kilometers. Birthplace proximity is measured by the share of individuals living in the *département* of the headquarters who were born in the *département* of the establishment.

**Figure A3 – Ratio of charity donations to GDP in French *départements*, by quartile of the distribution.**



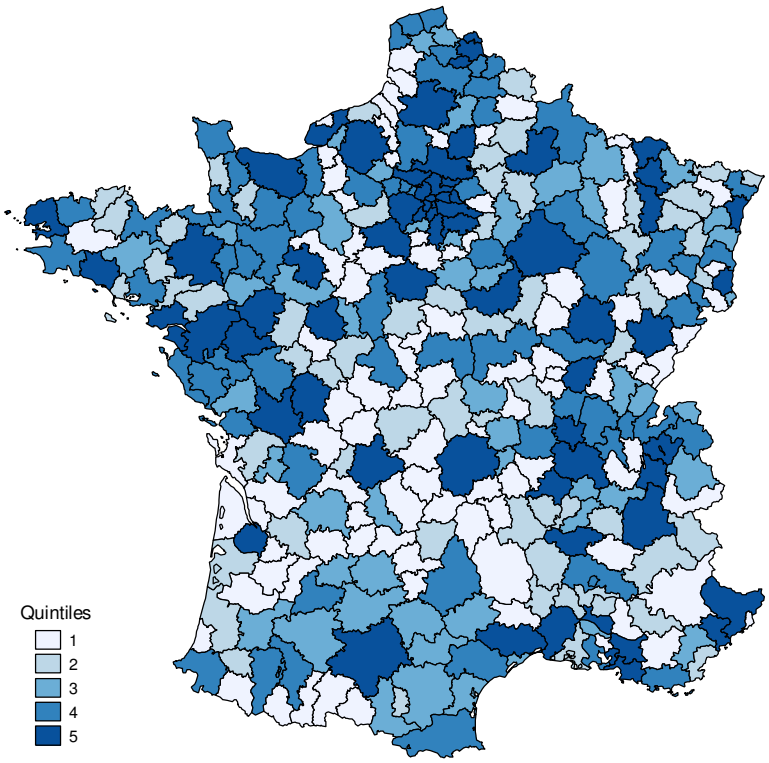

Note. – *Département*-level charity giving is measured in 1887; *département*-level GDP is measured in 1864. A few *départements* have been aggregated due to changes in their historical borders. Quartiles are ordered from the lowest to the highest. *Départements* with missing data are not shown on the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

**Figure A4 – Difference between national and municipal elections' turnout rate in French *départements*, by quartile of the distribution.**



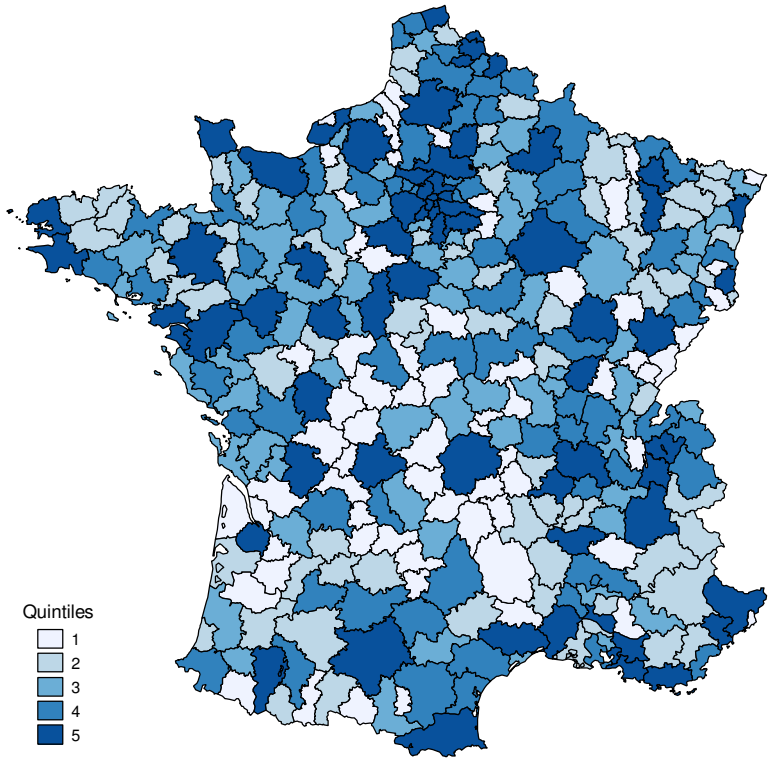

Note. – Quartiles are ordered from the lowest to the highest.

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



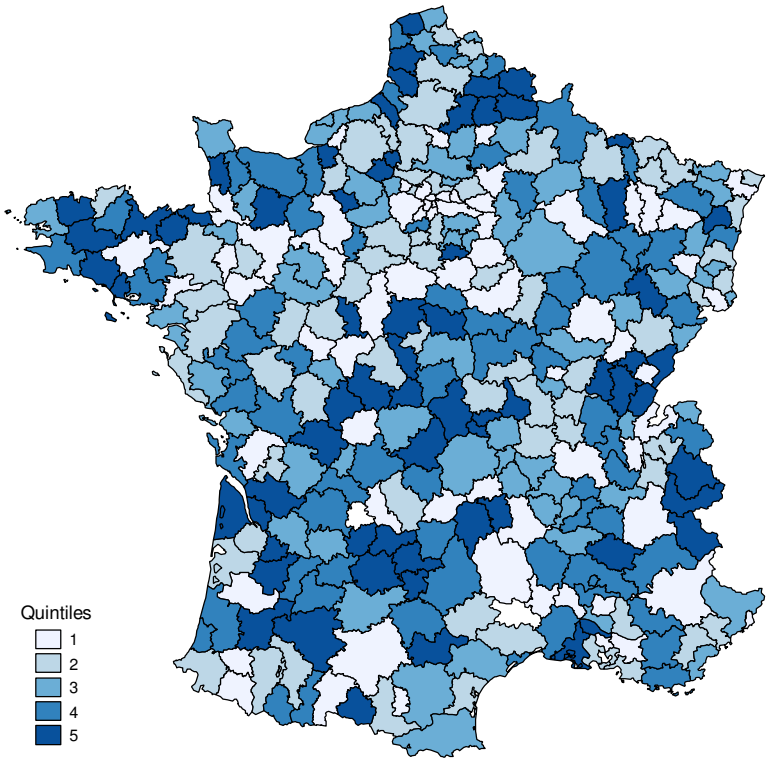

Note. – Quintiles are ordered from the lowest to the highest.

**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.**

| | *CMPF* |
|---|---|
| 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, Charity, Election turnout at Headquarters**

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

**Table A3 Descriptive Statistics of observations in our sample**

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

**Table A4 Number of Secondary Establishments per Firm by year.**

| | (1) Establishments in our Sample | (2) Establishments in France |
|---|---|---|
| 1st quartile | 1 | 4 |
| Median | 1 | 7 |
| Mean | 3.0 | 23.6 |
| 3rd 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.

**Table A5 Distance to Headquarters.**

| *Variables* | Mean | S.D. |
|---|---|---|
| *Physical distance in kilometers* | | |
| 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 |
| *Birthplace proximity* | | |
| Share of individuals born in the *département* of the establishment (% of individuals living in the *département* of the HQ) | 11.9 | 22.7 |
| *Birthplace distance (rank)* | | |
| 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 selfishness/ unselfishness | | Charity | | Election turnout | |
| *Département* of Headquarters (HQ) | Full Sample | Unselfish (High charity) | Selfish (Low charity) | Unselfish (High turnout) | Selfish (Low turnout) |
| Actual physical distance to HQ | 0.0034 | 0.0123*** | -0.0349*** | 0.0116*** | -0.0357*** |
| | (0.0051) | (0.0040) | (0.0113) | (0.0043) | (0.0117) |
| Control variables | yes | yes | yes | yes | yes |
| Observations | 73,601 | 44,195 | 25,333 | 46,958 | 26,643 |
| R-squared | 0.511 | 0.519 | 0.517 | 0.515 | 0.516 |
| First stage coefficient on instrument | 0.455*** | 0.440*** | 0.437*** | 0.402*** | 0.441*** |
| | (0.037) | (0.051) | (0.051) | (0.056) | (0.045) |

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, 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. Charity 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 unselfish *département* if this *département* belongs to the upper 25% of the charity distribution. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. A firm is assumed to have headquarters located in an unselfish *département* if this *département* belongs to the upper 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a selfish *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 selfishness/ unselfishness | | Charity | | Election turnout | |
| *Département* of Headquarters (HQ) | Full Sample | Unselfish (High charity) | Selfish (Low charity) | Unselfish (High turnout) | Selfish (Low turnout) |
| Actual physical distance to HQ | -0.0023 | 0.0009 | -0.0092*** | -0.0007 | -0.0073*** |
| | (0.0015) | (0.0016) | (0.0022) | (0.0017) | (0.0022) |
| Control variables | yes | yes | yes | yes | yes |
| Observations | 73,601 | 44,195 | 25,333 | 46,958 | 26,643 |
| R-squared | 0.512 | 0.521 | 0.522 | 0.517 | 0.523 |

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 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, 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. Charity 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 unselfish *département* if this *département* belongs to the upper 25% of the charity distribution. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. A firm is assumed to have headquarters located in an unselfish *département* if this *département* belongs to the upper 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a selfish *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: Impact of Physical Distance to Headquarters on the Share of Fixed-term Contracts – IV estimates.**

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

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, 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. Charity 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 unselfish *département* if this *département* belongs to the upper 25% of the charity distribution. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. A firm is assumed to have headquarters located in an unselfish *département* if this *département* belongs to the upper 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a selfish *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 A9: Impact of Distance to Headquarters on the Hiring Rate – IV estimates**

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

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, 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. Charity 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 unselfish *département* if this *département* belongs to the upper 25% of the charity distribution. Symmetrically, firm headquarters are considered to be located in a selfish *département* if this *département* belongs to the bottom 75% of the distribution. Election turnout is measured as the difference between the *département*-level turnout rates (in % of registered voters) at the 2000 referendum (on the 5-year – instead of 7-year – term for the President of Republic) and the first round of the 2001 municipal elections. A firm is assumed to have headquarters located in an unselfish *département* if this *département* belongs to the upper 25% of the distribution of differential turnout rates. Symmetrically, firm headquarters are considered to be located in a selfish *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.