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# The impact of the number of courts on the demand for trials\*

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## Abstract

The recent reforms of the "judicial map" in Europe have drastically reduced the number of courts, raising fears of a decline in access to justice. This paper addresses this issue through a litigation model within a Salop (1979) framework. We assume that victims of accidents differ both in terms of compensatory damages expected and in terms of distance from court. Due to distance costs, it might be too expensive to file cases for some victims with low expected awards. We show that the link between the number of courts and the demand for trials is not clear cut when the probability of an accident occurring is determined by the defendant through his level of care. Reducing the number of courts can, under certain conditions, increase the amount of care taken by the defendant.

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## 1 Introduction

For decades, the geographical distribution of courts in Europe (*i.e.* the number and the location of courts) remained the same, following “traditions, cultures and historical reasons” (Chemla, Hess and Lindgren [2003]). However, due to public debt concerns and the rise in efficiency issues, the revision of the judicial map has become an issue for of several European countries.<sup>1</sup>

In France, the revision was initiated in 2007 and ended in December 2010 with the closure of 21 *Tribunaux de Grande Instance* and 178 *Tribunaux d’Instance*.<sup>2</sup> The total number of courts and tribunals was reduced from 1206 to 819. In the Netherlands, municipal courts were merged with district courts (Mak [2008]), and –at a later stage- the number of district courts has been reduced from 19 to 10, and the number of district for courts of appeal from 5 to 4.

Proponents of these reforms highlight the more efficient use of resources brought about by a reduction in the number of courts, due to judges’ specialization and economies of scale. Among other things, the concentration of courts is viewed as enhancing specialization of judges. The belief is that specialization of courts would reduce delays. Furthermore, the aim of the reforms is to attain the optimum size, which would allow the aim of an efficient public management to be pursued (Ficet [2011]), or the “optimal scale of judicial decision-making” (Mak [2008]). In France for example, courts with less than 1500 civil cases addressed each year threshold have been closed. Also,

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<sup>1</sup>Especially in countries with civil law tradition, such as Belgium, France, Germany, The Netherlands, Norway, Portugal, Sweden. See Gomes [2007], Ficet [2011]. Note that in Germany, the drawing of the judicial map is decided by each Land.

<sup>2</sup>In addition, 62 *Conseils de prud’hommes* and 55 *Tribunaux de commerce* have been closed.

the overall displacement times and the existence of economic activities areas have been considered.<sup>3</sup>

Critics have focused on the risk of diminishing access to justice.<sup>4</sup> More distance between victims and the court might negatively affect their decision to sue. According to Mak [2008], the former approach to judicial organization used to be based on the territorial standard. The prevailing standard nowadays is the functionality standard, based on efficiency. The territorial standard encompasses both the notion of the geographical location of courts and the issues of timeliness, accessibility, comprehensibility, and visibility towards society. Decreasing the number of courts might not only increase the distance costs, but might more generally affect the feeling of “proximity” of users to judicial services (Lhuillier *et al.* [2010]). Even if new ways of organizing the judicial system emerge (such as itinerant judges, or the development of new technologies of communication), the symbolic aspect of access to justice is undermined by the reduction of the distribution of courts.

Hence, the optimal number of courts has become a matter of growing concern in Europe. In this paper we address the issue of access to justice by analyzing changes in defendants’ incentives to take care and in victims’ incentives to sue caused by the change in the number of courts. This issue is particularly significant in the French legal system. Indeed, the reform of the judicial map has mainly concerned the *tribunaux d’instance* (courts of first instance of limited jurisdiction). These courts handle mainly small claims (up to 10000 euros): debt, divorce, unpaid rent, neighborhood conflict... The functioning of these courts requires the parties to appear in person before the judge and possibly several times, and the assistance of a lawyer is never mandatory.<sup>5</sup> For this reason the issue of access to justice appears to be highly

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<sup>3</sup>The number of new civil cases per district court in France in 2008 varied from 507 (Millau) to 48166 (Paris). Source: French Ministry of Justice, *Annuaire statistique de la Justice 2008*. The statistics for 2011 year are not publicly available yet.

<sup>4</sup>This view defines access to justice as the demand for trials. It is the definition of access to justice that we use in this paper, although it is a narrow view. Most disputes are resolved without resorting to formal legal institutions.

<sup>5</sup>The French judicial system is based on an inquisitorial system in which the parties and

relevant regarding claims before the *tribunaux d'instance*. Since there is no lawyer and the parties are compelled to move in person, distance to court matters for a person subject to legal proceedings.<sup>6</sup> The only statistical study available (Borvo Cohen-Seat *et al.* [2012]) indicates that distance to court has sometimes risen from 50 km to more than 100 km and that the reform has created “judicial deserts”<sup>7</sup>. The report also mentions the implementation by some cities of assistance devices to enable mobility for individuals in financial difficulty to go to court.

The issue of distance and justice is also important for large countries or less developed ones. A recent survey attempts to evaluate the impact of distance on the access to justice in a rural region of Australia (Coverdale [2011]). According to the report, almost 80 per cent of survey participants agreed or strongly agreed that rural residents were disadvantaged regarding the access to the delivery of justice due to traveling to distant courts. The report recalls that the number of courts’ locations has significantly decreased during the last 130 years. Such issue is also underlined in Justice reports regarding Africans countries, such as Malawi and Kenya. In Malawi for instance, the question of distance is pregnant due to the lack of public transportation.

To our knowledge, little academic work has been done on this subject, specifically in the law and economics literature. This paper tries to fill this gap by proposing a theoretical analysis of the following question: Does the reduction of the number of courts lead to reduced access to justice?

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their lawyer (if they have one) are less present during the procedure than in adversarial systems.

<sup>6</sup>Waiting costs and lawyers fees are generally considered as having an impact on the decision whether to sue or not. Since counsel is not compulsory, we focus on the impact of distance costs particularly when the expected compensatory damages are low. Furthermore, the use of new technologies of communication, often seen as a solution to avoid the negative effects of closing courts, is not yet entirely satisfactory. Indeed, these new technologies often do not bring the level of service quality and efficiency gains expected. For further details, see Velicogna [2008] and Velicogna, Errera, Derlange [2011].

<sup>7</sup>The expression judicial deserts is used when over 100km an area is deprived of any legal jurisdiction. For example, in Corsica, Brittany and Auvergne.

To that end, a model of litigation is developed within a Salop [1979] model. The paper borrows elements from two areas of distinct literature: litigation and spatial competition. Our litigation model is a two-stage game: the occurrence of an accident and the decision whether to sue. This framework incorporating tort liability and litigation is quite similar to that of Polinsky and Rubinfeld [1988], Gravelle [1990]. We combine this framework with models of spatial competition (Salop [1979]). Nevertheless, our approach is somewhat different since there is no competition between courts.<sup>8</sup> Victims go to the nearest court. Victims differ in terms of (geographical) location, that is, their distance from court varies. We assume that there are two types of victims who differ in damages (“high” and “low”).

This paper highlights two main results. First, reducing the number of courts might either enhance or diminish the care taken and thus the probability of accident, depending on the relative effects of the defendant’s transport cost and the victim’s transport costs. If the first effect is greater than the second effect, then diminishing the number of courts increases deterrence. Second, the impact of reducing the number of courts on the demand for trials may be ambiguous. Particularly, if the defendant’s transport costs are high, diminishing the number of courts induces more care (fewer accidents) and fewer suits.

This paper is organized as follows. Section 2 introduces the general framework of the following game: first of all, the policy maker chooses the number of courts, secondly an accident occurs and thirdly the victim decides whether to sue or not. Section 3 presents the results. Section 4 considers the optimal number of courts. Section 5 concludes.

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<sup>8</sup>We do not consider the possibility of forum shopping, since we assume that the judges award the same level of damages in any court for a given case. In our formal model, location has no impact on the level of damages.

## 2 The general framework

Using Salop's model [1979], we consider a circular country of length 1.<sup>9</sup>  $M$  identical courts (indicated  $j = 1, \dots, M$ ) are uniformly distributed around the circle: therefore the distance between courts is equal to  $\frac{1}{M}$ .

We have two main assumptions regarding the victims:

(i) Victims differ in their compensatory damages to be awarded if they file a suit.<sup>10</sup> More specifically, we assume there are two types of victims: l-type victims who have suffered a monetary equivalent loss of  $l$  and L-type victims who have suffered a larger loss  $L$ , with  $L > l$ . We further assume that the proportion of L-type victims is given by  $\lambda$ , with  $0 \leq \lambda \leq 1$ , and the proportion of l-type by  $1 - \lambda$ .

(ii) Victims differ in their distance  $x$  to the closest court. The victim transport cost per unit distance is denoted  $t_V$ . Hence, victims face distance costs  $t_V x$  in addition to the usual litigation fees  $f$ . Distance costs do not need to be exclusively physical; they might more generally reflect the justice proximity, which goes with timeliness, accessibility, comprehensibility, and visibility of the judicial system. Both types of victims are uniformly distributed around the circle.

The utility of suing for a L-type victim is given by

$$U_V^L(x) = L - f - t_V x \quad (1)$$

Equivalently, the utility of a l-type victim is given by

$$U_V^l(x) = l - f - t_V x \quad (2)$$

where  $l - f > 0$ .

We concentrate on cases where the L-segment is always covered, while

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<sup>9</sup>We assume that the courts and the plaintiffs are distributed around a circle to avoid boundary problems found in line models.

<sup>10</sup>We assume that a victim filing a case is completely compensated for the harm he or she has suffered, whatever the defendant's care (strict liability).

the l-segment is only partially covered.<sup>11</sup> That is, some l-type victims will not sue in equilibrium.

The  $M$  courts have identical cost functions. The total cost of a court<sup>12</sup>  $j$  is  $z\pi D_j + Z$ , where  $Z$  is a fixed cost,  $D_j$  the quantity of potential victims who would be served by the court  $j$  if they are injured,  $\pi$  the probability of accident and  $z$  is marginal variable cost.

The timing of the game is the following:

1. The policy maker chooses the number of courts to minimize the social costs of accidents and the social costs of operating the courts.
2. An accident occurs with probability  $\pi$  which results from the defendant's decision to take care.
3. The victim decides whether to sue or not. If the victim drops the case, then the game ends. If the victim decides to file a suit, trial occurs.

### 3 The legal process

We proceed backwards.

#### 3.1 The victim decides whether to sue

A L-type victim located at a distance  $x$  will sue if  $U_V^L > 0$ . Knowing that the country is of length 1, the maximum distance a victim has to travel is  $\frac{1}{2}$ , when there is only one court.

**Assumption 1** *The expected compensatory damages  $L$  of the L-type victim are high enough so that the L victim always sues:*

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<sup>11</sup>See Brekke *et al.* [2008] for a similar framework in the context of hospital competition. They assume that there are two types of patients who differ in expected benefits from hospital treatment. Hospitals compete on the segment of demand with high benefits, while they are local monopolists on the demand segment with low benefits.

<sup>12</sup>The cost function expressed here follows the general structure found in the spatial economics literature.



$$L > \frac{t_V}{2} + f$$

Since the distance between courts is equal to  $\frac{1}{M}$ , the total demand for court  $j$  from the L-type victim is given by  $D_j^L = \frac{1}{M}$ . An increase in the number of courts decreases the demand from the L-type victim ( $\frac{\partial D^L}{\partial M} = -\frac{1}{M^2}$ ). For the  $M$  courts, the global demand is given by  $D^L = 1$ .

A l-type victim located at a distance  $x$  will sue if  $U_V^l > 0$ . That is if

$$\frac{l - f}{t_V} > x \quad (3)$$

We note  $\hat{x}$  the distance at which a l-type victim would be indifferent between filing a suit and dropping the case:

$$\hat{x} = \frac{l - f}{t_V} \quad (4)$$

The maximum distance a l-type victim may be from court is  $\frac{1}{2M}$ .<sup>13</sup> If the threshold distance is larger than the maximum distance, that is if  $\hat{x} \geq \frac{1}{2M}$ , all the victims go to trial.<sup>14</sup> If, however the threshold distance is shorter than the maximum distance, that is,  $\hat{x} < \frac{1}{2M}$ , then some victims, those who live farther away, will not go to court. They will find it more expensive to go to court than to suffer from non compensated harm.<sup>15</sup>

**Assumption 2** *We consider cases in which some victims, those who live farther away, will not go to court  $\hat{x} < \frac{1}{2M}$ , which is the case if and only if  $t_V > (l - f)2M$ . In other words, the number of courts  $M$  must not be too large.*

We will later derive the conditions for this assumption to hold in equilibrium. It must be noted that even when the litigation fees  $f$  and unit distance cost  $t_V$  remain constant, the proportion of l-type victims filing suits

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<sup>13</sup>Since we assumed that  $M$  courts are evenly distributed around a circle of circumference 1.

<sup>14</sup>This case is referred to as the competition case in the spatial competition literature. See Salop [1979]

<sup>15</sup>This case is called the monopoly case in the spatial competition literature.

increases as the number of courts increases, since the distance between any two providers is reduced. Accordingly, the l-type victim's demand for court services is a function of three variables: the fee charged, the costs of distance and the number of courts.

Total demand facing court  $j$  from the l-type victims is given by  $D_j^l = 2\hat{x}$ . The total demand for the  $M$  courts is given by  $D^l = 2M\hat{x}$ . Total demand facing court  $j$  from both segments is thus given by :

$$D_j = \lambda D_j^L + (1 - \lambda)D_j^l = \lambda \frac{1}{M} + (1 - \lambda)2\hat{x} \quad (5)$$

where  $\lambda \in [0, 1]$  and  $D_j \in [2\hat{x}, \frac{1}{M}]$ . The total demand (all courts) from the victims is given by  $D = \sum_{j=1}^M D_j \in [2M\hat{x}, 1]$ , with

$$D = \lambda + (1 - \lambda)2M\hat{x} \quad (6)$$

and

$$\frac{\partial D}{\partial M} = (1 - \lambda)2\hat{x} > 0 \quad (7)$$

The total demand from the victims increases with the number of courts.

### 3.2 The defendant chooses the level of care

Let us assume now that the defendant can reduce the probability of accident by increasing his/her level of care  $\chi$  with  $\pi'(\chi) < 0$  and  $\pi''(\chi) > 0$ .<sup>16</sup> The defendant's transport cost per unit distance is denoted  $t_D$  and his/her usual litigation fees  $c$ . The defendant chooses his/her level of care  $\chi$  to minimize the sum of his/her care costs and his/her expected accident costs:  $\chi + \pi(\chi)H$ , where  $H$  is function of  $M$ :

$$H(M) = \lambda D^L(L + c + t_D \int_0^{\frac{1}{2M}} y dy) + (1 - \lambda)D^l(l + c + t_D \int_0^{\frac{1}{2M}} y dy) \quad (8)$$

with  $D^L = 1$  and  $D^l = 2M\hat{x}$ .

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<sup>16</sup>We assume that increasing the level of care has an impact on the probability of accident, but does not affect the level of damages.

The optimal level  $\chi^*$  satisfies:

$$1 + \pi'(\chi^*)H = 0 \quad (9)$$

The optimal level of care is increasing in  $H$ <sup>17</sup>.

$$\chi^* = \chi^*(H(M)) \quad (10)$$

The defendant's care and the probability of accidents depend on the litigant's distance costs, and the litigation fees. In order to assess the effects of  $M$  on the incentive for care, we compute  $\frac{\partial H}{\partial M}$ .

$$\frac{\partial H}{\partial M} = (1 - \lambda) \frac{\partial D^l}{\partial M} (l + c) - \left[ \frac{\lambda}{M} + (1 - \lambda)\hat{x} \right] \frac{t_D}{4M^2} \quad (11)$$

**Proposition 1.** - *If  $t_D$  is sufficiently high ( $t_D > \frac{(1-\lambda)(l+c)4M^2}{\lambda/M+(1-\lambda)\hat{x}}$ ), then decreasing the number of courts increases the defendant's expected cost of accident ( $\frac{\partial H}{\partial M} < 0$ ) and his/her optimal level of care.*

- *If  $t_D$  is small ( $t_D < \frac{(1-\lambda)(l+c)4M^2}{\lambda/M+(1-\lambda)\hat{x}}$ ), then decreasing the number of courts decreases the defendant's expected cost of accident, and his/her optimal level of care ( $\frac{\partial H}{\partial M} > 0$ ).*

Two countervailing effects explains the sign of  $\frac{\partial H}{\partial M}$ :

On the one hand, decreasing the number of courts induces a decrease in the demand for trials from l-type victims that decreases the expected trial payment. On the other hand, decreasing the number of courts increases the defendant's distance costs. When the defendants' distance costs are high enough, the second effect (the distance cost effect) is larger than the first effect (the demand effect). The effect on the expected accident costs is negative:  $\frac{\partial H}{\partial M} < 0$ . When the defendants' distance costs are low enough, the second effect (the distance cost effect) is smaller than the first effect (the demand effect). The effect on the expected accident costs is positive:  $\frac{\partial H}{\partial M} > 0$ .

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<sup>17</sup>Differentiating (9) with regard to  $\chi$ , we obtain  $0 = -\pi''(\chi(H))\chi'(H)H - \pi'(\chi)$  so that  $\chi'(H) = -\pi'(\chi)/\pi''(\chi(H))H > 0$  since  $\pi'(\chi) < 0$  and  $\pi''(\chi) > 0$ .

### 3.3 The demand for trials

There is a trial only if there is an accident, which occurs with the probability  $\pi(\chi^*(M))$  and the victim filing suit  $D$ . The demand for trials is defined by:  $T(M) = \pi(\chi^*(M))D(M)$

$$\frac{\partial T}{\partial M} = \pi(\chi^*(M))\frac{\partial D}{\partial M} + \frac{\partial \pi}{\partial \chi^*} \frac{\partial \chi^*}{\partial H} \frac{\partial H}{\partial M} D(M) \leq 0 \quad (12)$$

since  $\frac{\partial \pi}{\partial \chi^*} < 0$ ,  $\frac{\partial \chi^*}{\partial H} > 0$ , and  $\frac{\partial D}{\partial M} > 0$ , the sign of  $\frac{\partial T}{\partial M}$  depends on the sign of  $\frac{\partial H}{\partial M}$ .

When the defendant's unit distance cost is high ( $t_D > \frac{(1-\lambda)(l+c)4M^2}{\lambda/M+(1-\lambda)\hat{x}}$ ), decreasing the number of courts increases his/her expected accident cost  $H$ , as the distance cost effect is larger than the demand effect. The defendant is encouraged to increase his/her level of care, and therefore the probability of accident decreases. Furthermore, a smaller number of courts encourages victims to file fewer suits (since distance costs are greater). Thus, if the defendant's distance costs are high, both effects go in the direction of increasing the number of trials as the number of courts increases:  $\frac{\partial T}{\partial M} > 0$ .

When the defendant unit cost is low ( $t_D < \frac{(1-\lambda)(l+c)4M^2}{\lambda/M+(1-\lambda)\hat{x}}$ ), reducing the number of courts decreases his/her expected accident cost  $H$ . The defendant is encouraged to decrease his/her level of care, and therefore the probability of accident goes up. Still, a smaller number of courts encourages victims to file fewer suits. Thus, if the defendant's distance costs are low, effects on the victim and on the defendant side go in opposite directions: less suits and less care (more accidents). The sign of  $\frac{\partial T}{\partial M}$  is ambiguous. If the impact on the victim (number of suits) outweighs the impact on the defendant (number of accidents), then decreasing the number of courts will reduce the number of trials. Otherwise decreasing the number of courts will increase the number of trials.

**Proposition 2.** *When defendant's transport cost per unit distance is high, decreasing the number of courts reduces the number of trials. When defendant's transport cost per unit distance is low, decreasing the number of courts*

has an ambiguous impact on the number of trials.

## 4 The optimal number of courts

The policy maker chooses the number of courts to minimize the social costs  $SC$ . The social costs consist of the social costs of accidents and the social costs of operating the courts.

The social costs of accident are given by the level of care costs  $\chi^*(M)$ , the litigation fees  $T(c + f)$ , the distance costs of both victims segments  $\pi(\chi^*(M))(2M) \left[ \lambda \int_0^{\frac{1}{2M}} xt_V dx + (1 - \lambda) \int_0^{\hat{x}} xt_V dx \right]$ , the defendant's distance costs  $T \int_0^{\frac{1}{2M}} yt_D dy$ , and the damages suffered by the excluded victims (those who renounce filing a suit)  $(1 - \lambda)\pi(\chi^*(M))l[1 - D(M)]$ . The social costs of operating the courts are given by  $zT + ZM$ .

The policy maker's objective is to minimize social costs, which can be written as:

$$\begin{aligned} \min_M SC &= \chi^*(M) + T(c + f) \\ &+ \pi(\chi^*(M))(2M) \left[ \lambda \int_0^{\frac{1}{2M}} xt_V dx + (1 - \lambda) \int_0^{\hat{x}} xt_V dx \right] \\ &+ T \int_0^{\frac{1}{2M}} yt_D dy + (1 - \lambda)\pi(\chi^*(M))l[1 - D(M)] + zT + ZM \end{aligned} \quad (13)$$

The optimal number of courts is obtained by minimizing social costs with respect to the number of courts, yielding the following first-order condition (F.O.C.):<sup>18</sup>

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<sup>18</sup>The second-order condition is given by:  $\frac{\partial^2 SC}{\partial M^2} = \chi''(M) + \pi''D(c + f) + \pi'D'(c + f) + t_D\pi''D\frac{1}{8M^2} + t_D\pi'D(-\frac{1}{2M^3}) + t_D\pi D\frac{3}{4M^4} + t_D\pi D'(-\frac{1}{4M^3}) + \pi''t_V[-\frac{\lambda}{4M^2} + (1 - \lambda)\hat{x}^2] + \pi t_V[-\frac{\lambda}{2M^3}] + (1 - \lambda)\pi''l(1 - D) + (1 - \lambda)\pi l(-D') > 0$

$$\begin{aligned}
0 &= \frac{\partial \chi}{\partial H} \frac{\partial H}{\partial M} + \frac{\partial T}{\partial M} (c + f) \\
&+ t_V \left[ \left( \lambda \frac{1}{4M^2} + (1 - \lambda) \hat{x}^2 \right) \left( \frac{\partial \pi}{\partial \chi} \frac{\partial \chi}{\partial H} \frac{\partial H}{\partial M} M + \pi \right) - \frac{\lambda \pi}{2M^2} \right] \\
&+ \frac{t_D}{4M^2} \left[ \frac{\partial T}{\partial M} \frac{1}{2} - \frac{T}{M} \right] \\
&+ (1 - \lambda) l \left[ \frac{\partial \pi}{\partial \chi} \frac{\partial \chi}{\partial H} \frac{\partial H}{\partial M} (1 - D) - \pi \frac{\partial D}{\partial M} \right] + \frac{\partial T}{\partial M} z + Z \quad (14)
\end{aligned}$$

The first term is the marginal impact of a change in the number of courts  $M$  on the defendant care costs. The second term represents the marginal effect on litigation fees, due to a change in the demand for trials. The third term shows the marginal impact on the distance costs of both victims segments, due to a change in distance costs and in the probability of accidents. The fourth term is the marginal effect on the defendant distance costs. It depends on the elasticity of the demand for trials to the number of courts  $\frac{\partial T}{\partial M} \frac{M}{T}$ .<sup>19</sup> The fifth term shows the marginal impact on the number of excluded victims, due to a change in the probability of accidents and in the demand from the victims. The sixth term is simply the fixed cost  $Z$  from an additional court plus the marginal cost  $z$ .

The optimal number of courts is the number for which the marginal benefit is equal to the marginal cost. Let us consider the interesting case where a decrease in the number of courts increases deterrence ( $\frac{\partial H}{\partial M} < 0$ ,  $t_D$  is high)<sup>20</sup>. In this case, the first term of the F.O.C. represents a cost since the level of care increases. The second and sixth terms represent benefits since the number of trials diminishes ( $\frac{\partial T}{\partial M} > 0$ )<sup>21</sup>. The three remaining terms may represent costs or benefits depending on the responsiveness of the litigants to the change in the number of courts. When the impact on deterrence ( $\frac{\partial \pi}{\partial \chi} \frac{\partial \chi}{\partial H} \frac{\partial H}{\partial M}$ ) is strong enough, these three terms represent benefits since the impact of reducing the number of accidents outweighs each other effects (in particular

<sup>19</sup>  $\frac{\partial T}{\partial M} \frac{1}{2} - \frac{T}{M} > 0$  if and only if  $\frac{\partial T}{\partial M} \frac{M}{T} > 2$ .

<sup>20</sup> See proposition 1.

<sup>21</sup> See proposition 2.

the increase in transport costs due to a decrease in the number of courts). In other words, more the defendant is responsive to the distance to court, the smaller the optimal number of courts.

## 5 Concluding remarks and suggestions for future research

In Europe, the debates regarding the “judicial map” reforms focus on the consequences of reducing the number of courts. The issue of distance and justice is also pregnant in large countries, such as Australia, or less developed ones. In each cases, distance is feared to be a severe impediment to “access to justice”. This paper shows that a decrease in the number of courts (and thus an increase in the average distance to the nearest court) may have counterintuitive effects, when the incentives of the defendant are taken into account.

At first sight, reducing the number of courts might reduce the volume of litigation. Some low damages plaintiffs might decide not to sue. Intuitively, the impact of a decrease in the number of courts is weaker when the proportion of large damages cases is higher, and when distance costs and fees are lower. However, this assertion has to be mitigated when the defendant’s incentives are taken into account. In this case, it is unclear whether decreasing the number of courts reduces or increases resort to trial. To clarify this point, it is necessary to underline a joint result: diminishing the number of courts might increase or decrease the care taken by defendants and thus the probability of accident. It depends on the relative importance of two countervailing effects on the expected accident costs: the increase in the defendant’s transport costs and in the victim’s transports costs (fewer suits from low damages victims).

If the defendant’s distance costs are low, then diminishing the number of courts reduces the care taken by defendants and increases the probability

of accident. Nevertheless, the total impact on the demand for trials may be positive or negative since, in this case, there is fewer suits but more accidents.

If the defendant's distance costs are high enough, then the effect on the defendant's transport costs is larger than the effect on the victim's transport cost. In this case, diminishing the number of courts improves the care taken by defendants and reduces the demand for trials (fewer suits and fewer accidents).

Finally, our results call for careful implementation of such reforms, accompanied with case by case studies. First of all, policy makers have to consider the existence of victims expecting small damages who could be excluded from trial. Secondly, the impact on incentives to take care might be very counterintuitive. Consequently, policy makers have to examine the differences in the costs of defendants and victims to increased travel distances to court.

In France, the report of the *Sénat* mentions the appearance of so-called "judicial deserts". For example, these situations appear in Auvergne, in Brittany and in Corsica. These regions are often associated with high transport costs (mountainous region and little transportation by road off season). Assessing the impact in terms of "access to justice" requires examination of which party, victim or defendant, is the more responsive to increased travel distances to court. This assessment will depend on the type of defendant, and the relative importance of transport costs for him/her. For example, large corporations are generally in large cities with easy access to courts. Therefore, distance costs may be negligible. In such a case, reducing the number of courts has not a positive impact on deterrence. On the contrary, distance costs may be more significant for a "small" defendant, such as an individual. In such a case, a remote courthouse might be inconvenient to him and might induce him to take more care.

Future empirical research may be useful to test the following question: has the number of cases filed evolved differently in merged courts rather than in unaffected ones? But as mentioned above, this question will not suffice



because the impact on the demand for trials may come from a change in the probability of accident. Hence a second question should be tested: has the number of accident increased or decreased in the regions where the courts have closed? The judicial map reform in France is a good opportunity to test the relevance of the paper's propositions. Of course, any result on the evolution of the number of cases filed should be interpreted carefully.

As mentioned above, waiting costs and lawyers' fees could be considered since they both impact the behavior of the parties. These extensions have to be made in future works. Indeed the number of courts might have an impact on congestion, and therefore on waiting costs. Fewer courts means fewer claims from victims. The decrease in the demand of justice might in turn have an impact on the level of congestion. Introducing lawyers might be another interesting extension<sup>22</sup> and might better reflect the adversarial system. In particular fewer courts might have an impact on the decision of lawyers to accept or drop cases. Furthermore additional costs caused by distance might be passed on to clients by higher lawyers' fees.

## References

- [1] Borvo Cohen-Seat, N., Detraigne, Y., 2012. La réforme de la carte judiciaire. Rapport d'information du Sénat, n°662.
- [2] Brekke, K.R., Siciliani, L., Straume, O.R., 2008. Competition and waiting times in hospital markets. *Journal of Public Economics*. 92, 1607–1628.
- [3] Chemla, D., Hess B., Lindgren A., 2003. Territorial Jurisdiction. *European Commission for the Efficiency of Justice (CEPEJ)*. 18 (D3).
- [4] Coverdale R., 2011. Postcode justice: rural and regional disadvantage in the administration of the law. *Deakin Law Review*. 16 (1), 155-187.

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- [5] Ficet, J., 2011. Trajectoires de réforme de la carte judiciaire et managérialisation de l'Etat. Analyse comparée des politiques de territorialisation de la justice en France et en Belgique. *Revue internationale de politique comparée* 4, 91–118.
- [6] Gomes, C., 2007. The transformation of the Portuguese judicial organization: Between efficiency and democracy. *Utrecht Law Review* 3, 101–111.
- [7] Gravelle, H. S. E., 1990. Rationing trials by waiting: welfare implications. *International Review of Law and Economics* 10, 255–270.
- [8] Lhuillier, J., Lhuillier-Solenik D., 2010, Access to Justice in Europe, European Commission For the Efficiency of Justice (CEPEJ) Studies No. 9.
- [9] Mak, E., 2008. Balancing Territoriality and Functionality; Specialization as a Tool for Reforming Jurisdiction in the Netherlands, France and Germany. *International Journal For Court Administration*, October.
- [10] Polinsky, A. M., Rubinfeld, D. L., 1988. The deterrent effects of settlements and trials. *International Review of Law and Economics* 8, 109–116.
- [11] Salop, S.C., 1979. Monopolistic competition with outside goods. *Bell Journal of Economics* 10, 141–156.
- [12] Velicogna, M., 2008. Use of information and communication technologies (ICT) in European judicial systems. CEPEJ Study No. 7.
- [13] Velicogna, M., Errera, A., Derlange, S., 2011. e-Justice in France: the e-Barreau experience. *Utrecht Law Review* 7, 163–187.